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PLANT VARIETY PROTECTION ACT

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HEARING

BEFORE THE

SUBCOMMITTEE ON AGRICULTURAL RESEARCH AND GENERAL LEGISLATION

OF THE

COMMITTEE ON AGRICULTURE AND FORESTRY UNITED STATES SENATE

NINETY-FIRST CONGRESS

SECOND SESSION

ON

S. 3070

A BILL TO ENCOURAGE THE DEVELOPMENT OF NOVEL VARIETIES OF SEXUALLY REPRODUCED PLANTS AND TO MAKE THEM AVAILABLE TO THE PUBLIC, PROVIDING PROTECTION AVAILABLE TO THOSE WHO BREED, DEVELOP, OR DISCOVER THEM, AND THEREBY PROMOTING PROGRESS IN AGRICULTURE IN THE PUBLIC INTEREST

JUNE 11, 1970

Printed for the use of the Committee on Agriculture and Forestry



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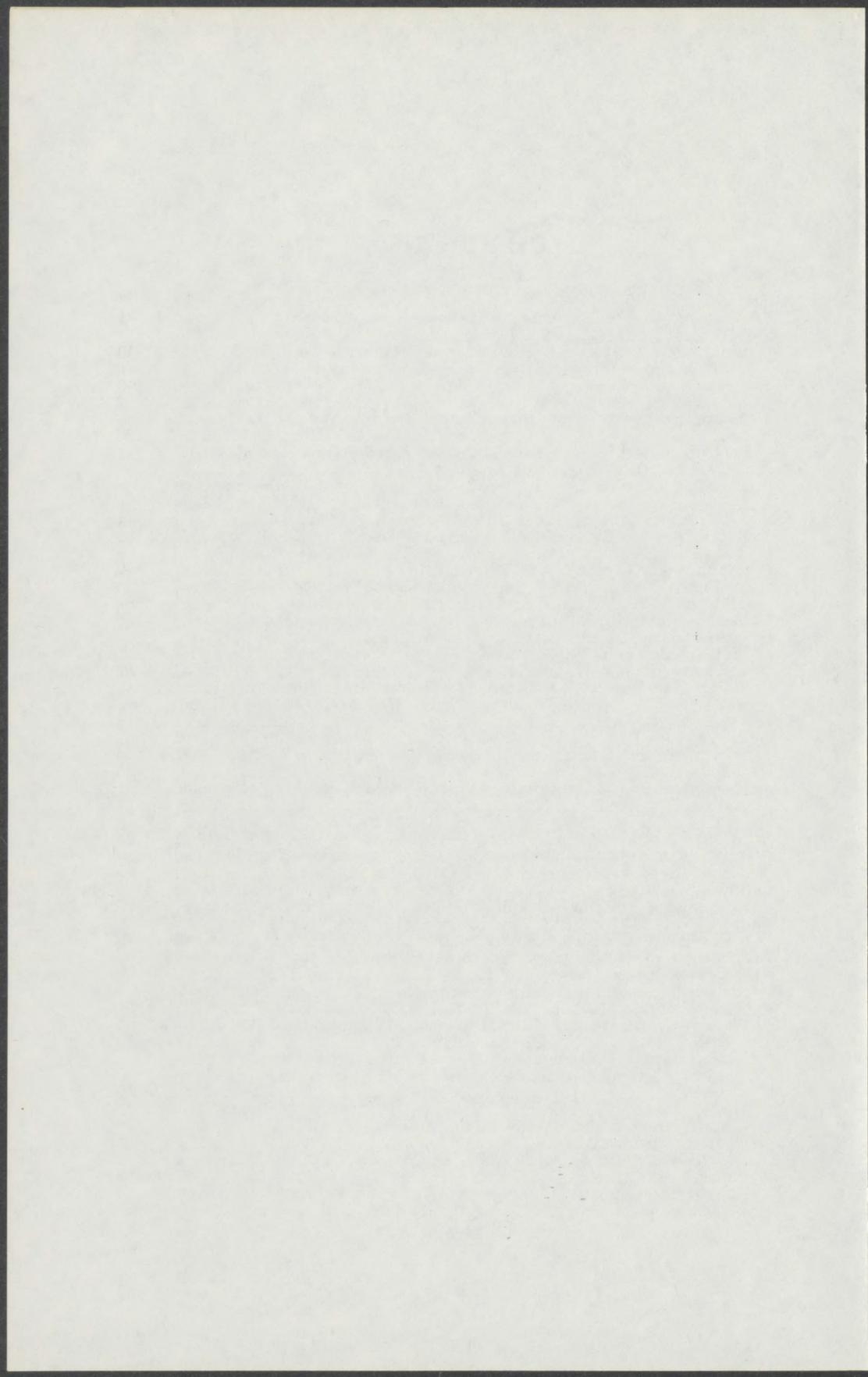
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PLANT VARIETY PROTECTION ACT

THURSDAY, JUNE 11, 1970

U.S. SENATE,
SUBCOMMITTEE ON AGRICULTURAL RESEARCH,
AND GENERAL LEGISLATION OF THE
COMMITTEE ON AGRICULTURE AND FORESTRY,
Washington, D.C.

The subcommittee met, pursuant to notice, at 9:40 a.m., in room 324, Old Senate Office Building, Senator B. Everett Jordan of North Carolina, chairman, presiding.

Present: Senator Jordan of North Carolina (presiding).

Also present: Senator Jack Miller of Iowa.

Senator JORDAN. The subcommittee is holding hearings today on S. 3070, the so-called Plant Variety Protection Act. The bill provides for the issuance of certificates of plant variety protection assuring the developers of novel varieties of sexually reproduced plants of exclusive rights to sell, reproduce, import, or export such varieties, or use them in the production of hybrids or different varieties, for a period of 17 years. Patents for asexually produced varieties are now provided for by 35 United States Code, 161-164.

Proponents of this legislation advise that it is needed to provide an incentive to plant breeders to develop new and improved varieties for the benefit of farmers, consumers, and industries concerned with the production, processing, and marketing of agricultural commodities.

Copies of the bill and the report of the Department of Agriculture will be inserted in the record at this point.

The Department states that it supports the objective of the bill but reserves further comment pending completion of an administration study of the laws protecting proprietary rights in the United States.

(S. 3070 and the report of the Department of Agriculture follow:)

(1)

91ST CONGRESS
1ST SESSION

S. 3070

IN THE SENATE OF THE UNITED STATES

OCTOBER 23, 1969

Mr. MILLER (for himself, Mr. DOLE, Mr. EASTLAND, Mr. HOLLINGS, Mr. JORDAN of North Carolina, and Mr. YOUNG of North Dakota) introduced the following bill; which was read twice and referred to the Committee on Agriculture and Forestry

A BILL

To encourage the development of novel varieties of sexually reproduced plants and to make them available to the public, providing protection available to those who breed, develop, or discover them, and thereby promoting progress in agriculture in the public interest.

- 1 *Be it enacted by the Senate and House of Representa-*
- 2 *tives of the United States of America in Congress assembled,*

II

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1 **TITLE I—PLANT VARIETY PROTECTION**2 **OFFICE**

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3. Plant Variety Protection Fees.....	31

3 **Chapter 1.—ORGANIZATION AND PUBLICATIONS**4 **Section 1. Establishment.**

5 There is hereby established in the Department of Agri-
6 culture a bureau to be known as the Plant Variety Protec-
7 tion Office, which shall have the functions set forth in this
8 Act.

9 **Sec. 2. Seal.**

10 The Plant Variety Protection Office shall have a seal
11 with which documents and certificates evidencing plant
12 variety protection shall be authenticated.

13 **Sec. 3. Officers and Employees.**

14 (a) There shall be in the Plant Variety Protection
15 Office a Commissioner of Plant Variety Protection, one As-
16 sistant Commissioner, and an appropriate staff. The Assistant
17 Commissioner shall perform the duties pertaining to the
18 office of Commissioner assigned to him by the Commissioner
19 and shall fill the office of Commissioner during a vacancy in
20 that office or in the absence of the Commissioner. The Com-

1 missioner of Plant Variety Protection shall be appointed by
2 the Secretary.

3 (b) The Secretary is authorized to fix the per annum
4 rate of basic compensation of each staff member in the Plant
5 Variety Protection Office at not in excess of the maximum
6 scheduled rate provided for positions in level V of section
7 5316 of title 5, United States Code.

8 **Sec. 4. Restrictions on Employees as to Interest in Plant**
9 **Variety Protection.**

10 Employees of the Plant Variety Protection Office, in-
11 cluding the Commissioner and Assistant Commissioner, shall
12 be ineligible during the periods of their employment, to apply
13 for plant variety protection and to acquire directly or in-
14 directly, except by inheritance or bequest, any right or
15 interest in any matters before that office. This section shall
16 not apply to members of the Plant Variety Protection Board
17 who are not otherwise employees of the Plant Variety
18 Protection Office.

19 **Sec. 5. Bond of Commissioner and Employees.**

20 The Commissioner and such other employees as he des-
21 ignates, before entering upon their duties, shall severally give
22 bond, with sureties, the former in the sum of \$10,000, and
23 the latter in sums prescribed by the Commissioner, condi-
24 tioned for the faithful discharge of their respective duties and
25 that they shall render to the proper officers of the Treasury

1 a true account of all money received by virtue of their
2 offices.

3 **Sec. 6. Duties of Commissioner, Regulations.**

4 The Commissioner, who shall report directly to the Sec-
5 retary, shall superintend or perform all duties required here-
6 under, and he shall have charge of property belonging to
7 the Plant Variety Protection Office. He may establish regula-
8 tions, not inconsistent with law, for the conduct of proceed-
9 ings in the Plant Variety Protection Office after consultations
10 with the Plant Variety Protection Board. All regulations
11 issued pursuant to this title shall be subject to the approval of
12 the Secretary.

13 **Sec. 7. Plant Variety Protection Board.**

14 (a) APPOINTMENT.—The Secretary shall appoint a
15 Plant Variety Protection Board. The Board shall consist
16 of individuals who, as a group, are expert in various areas of
17 varietal development covered by this Act. Membership of
18 the Board shall be drawn approximately equally from the
19 private or seed industry sector and from the sector of govern-
20 ment or the public. The Commissioner or his designee shall
21 act as chairman of the Board without voting rights except
22 in the case of ties.

23 (b) FUNCTIONS OF BOARD.—The functions of the Plant
24 Variety Protection Board shall include:

25 (1) Advising the Commissioner concerning the

1 adoption of Rules and Regulations to facilitate the proper
2 administration of this Act;

3 (2) Making advisory decisions on all appeals from
4 the Examiner. The Board shall determine whether to
5 act as a full Board or by panels it selects; and whether
6 to review advisory decisions made by a panel. For serv-
7 ice on such appeals, the Board may select, as temporary
8 members, experts in the area to which the particular
9 appeal relates; and

10 (3) Advising the Secretary on all questions under
11 section 44.

12 (c) COMPENSATION OF BOARD.—The members of the
13 Plant Variety Protection Board shall serve without compen-
14 sation except for standard government reimbursable expenses.

15 **Sec. 8. Library.**

16 The Commissioner shall maintain a library of scientific
17 and other works and periodicals, both foreign and domestic,
18 in the Plant Variety Protection Office to aid the officers in
19 the discharge of their duties.

20 **Sec. 9. Register of Protected Plant Varieties.**

21 The Commissioner shall maintain a register of published
22 specifications of United States protected plant varieties and
23 a file of such other scientific and technical information as may
24 be necessary or practicable.

1 **Sec. 10. Publications.**

2 (a) The Commissioner may publish, or cause to be pub-
3 lished, in such format as he shall determine to be suitable, the
4 following:

5 (1) The specifications for plant variety protection
6 including drawings and photographs.

7 (2) The Official Journal of the Plant Variety Pro-
8 tection Office, including annual indices.

9 (3) Pamphlet copies of the plant variety protection
10 laws and rules of practice and circulars or other publica-
11 tions relating to the business of the Office.

12 (b) The Plant Variety Protection Office may print the
13 heading of the drawings or photographs for protected plant
14 varieties for the purpose of photolithography and any lithog-
15 raphy to appear on the same page.

16 (c) The Commissioner may (1) establish public facili-
17 ties for the searching of plant variety protection records and
18 materials, and (2) from time to time, as through an informa-
19 tion service, disseminate to the public those portions of the
20 technological and other public information available to or
21 within the Plant Variety Protection Office to encourage inno-
22 vation and promote the progress of the useful arts.

23 (d) The Commissioner may exchange any of the pub-
24 lications specified for publications desirable for the use of the

1 Plant Variety Protection Office. The Commissioner may
2 exchange copies of specifications, drawings, and photographs
3 of United States protected plant varieties for copies of speci-
4 fications, drawings, and photographs of applications and pro-
5 tected plant varieties of foreign countries.

6 **Sec. 11. Copies for Public Libraries.**

7 The Commissioner may supply printed copies of speci-
8 fications, drawings, and photographs of protected plant varie-
9 ties to public libraries in the United States which shall main-
10 tain such copies for the use of the public.

11 **Chapter 2.—LEGAL PROVISIONS AS TO THE PLANT**
12 **VARIETY PROTECTION OFFICE**

13 **Sec. 21. Day for Taking Action Falling on Saturday, Sun-**
14 **day, or Holiday.**

15 When the day, or the last day, for taking any action or
16 paying any fee in the United States Plant Variety Protection
17 Office falls on Saturday, Sunday, a holiday within the District
18 of Columbia, or on any other day the Plant Variety Protec-
19 tion Office is closed for the receipt of papers, the action may
20 be taken or the fee paid, on the next succeeding business day.

21 **Sec. 22. Form of Papers Filed.**

22 The Commissioner may by regulations prescribe the form
23 of papers to be filed in the Plant Variety Protection Office.

1 **Sec. 23. Testimony in Plant Variety Protection Office**
2 **Cases.**

3 The Commissioner may establish regulations for taking
4 affidavits, depositions, and other evidence required in cases
5 before the Plant Variety Protection Office. Any officer author-
6 ized by law to take depositions to be used in the courts of the
7 United States, or of the State where he resides, may take such
8 affidavits and depositions, and swear the witnesses. If any
9 person acts as a hearing officer by authority of the Commis-
10 sioner, he shall have like power.

11 **Sec. 24. Subpoenas, Witnesses.**

12 (a) The clerk of any United States court for the district
13 wherein testimony is to be taken in accordance with regula-
14 tions established by the Commissioner for use in any con-
15 tested case in the Plant Variety Protection Office shall, upon
16 the application of any party thereof, issue a subpoena for any
17 witness residing or being within such district or within one
18 hundred miles of the stated place in such district, command-
19 ing him to appear and testify before an officer in such
20 district authorized to take depositions and affidavits, at the
21 time and place stated in the subpoena. The provisions of the
22 Federal Rules of Civil Procedure relating to the attendance
23 of witnesses and the production of documents and things shall
24 apply to contested cases in the Plant Variety Protection
25 Office insofar as consistent with such regulations.

1 (b) Every witness subpoenaed or in attendance shall be
2 allowed the fees and traveling expenses allowed to witnesses
3 attending the United States district courts.

4 (c) A judge of a court whose clerk issued a subpoena
5 may enforce obedience to the process or punish disobedience
6 as in other like cases, on proof that a witness, served with
7 such subpoena, neglected or refused to appear or to testify.
8 No witness shall be deemed guilty of contempt for disobeying
9 such subpoena unless his fees and traveling expenses in going
10 to, and returning from, one day's attendance at the place
11 of examination, are paid or tendered him at the time of the
12 service of the subpoena; nor for refusing to disclose any
13 secret matter except upon appropriate order of the court
14 which issued the subpoena.

15 **Sec. 25. Effect of Defective Execution.**

16 Any document to be filed in the Plant Variety Protec-
17 tion Office and which is required by any law or regulation to
18 be executed in a specified manner may be provisionally ac-
19 cepted by the Commissioner despite a defective execution,
20 provided a properly executed document is submitted within
21 such time as may be prescribed.

22 **Sec. 26. Regulations for Practice Before the Office.**

23 The Commissioner, subject to the approval of the Secre-
24 tary, may prescribe regulations governing the recognition

1 and conduct of persons representing applicants or other par-
2 ties before the Plant Variety Protection Office. The Com-
3 missioner may, after notice and opportunity for a hearing
4 suspend or exclude, either generally or in any particular
5 case, from further practice before the Office of Plant Variety
6 Protection any person shown to be incompetent or disrepu-
7 table or guilty of gross misconduct.

8 **Sec. 27. Unauthorized Practice.**

9 Anyone who engages in direct or indirect practice before
10 the Office of Plant Variety Protection while suspended or
11 excluded under section 26, or without being either authorized
12 to practice law where he maintains his office, or authorized
13 by the Commissioner on the basis of having established his
14 ability and character, shall be liable in a civil action for the
15 return of all money received, and for compensation for
16 damage done by such person and also may be enjoined from
17 such practice. However there shall be no liability for damage
18 if such person establishes that the work was done competently
19 and without negligence. This section does not apply to any-
20 one who, without a claim of self-sufficiency, works under
21 the supervision of another, who is thus authorized and is
22 the responsible party; nor to anyone who establishes that
23 he acted only on behalf of any employer by whom he was
24 regularly employed.

1 **Chapter 3.—PLANT VARIETY PROTECTION FEES**

2 **Sec. 31. Plant Variety Protection Fees.**

3 (a) The Commissioner shall charge the following fees:

4 (1) On filing each application for a certificate of
5 plant variety protection, \$50.

6 (2) For issuing each certificate of plant variety
7 protection, \$50 unless the drawing or photograph to be
8 reproduced is in color and in that event, \$75.

9 (3) On appeal under section 63 of this title, for
10 the first time from the examiner to the Plant Variety
11 Protection Board, \$50. In addition, when consideration
12 by the Plant Variety Protection Board is reached, \$50.

13 (4) For certificate under section 85 or under sec-
14 tion 86 of this title, \$15.

15 (5) As available: For uncertified copies of specifi-
16 cation, drawing, and photographs which have been pub-
17 lished, such fees and charges as the Commissioner may
18 establish.

19 (6) For recording every assignment, agreement,
20 or other paper relating to the property in a plant variety
21 protection application, \$10: where the document re-
22 lates to more than one plant variety protection applica-
23 tion, \$1 for each additional item.

1 (7) For each certificate certifying copies of records,
2 \$1.

3 (8) For delayed payment or other action when
4 permitted upon payment of special fee, \$10.

5 (b) The Commissioner may reduce any fees under this
6 section found to be in excess of direct costs.

7 (c) The Commissioner may establish charges for copies
8 of records, publications, or services furnished by the Plant
9 Variety Protection Office, not specified above.

10 **Sec. 32. Payment of Plant Variety Protection Fees; Re-**
11 **turn of Excess Amounts.**

12 All fees shall be paid to the Commissioner, who shall
13 deposit the same in the Treasury of the United States in
14 such manner as the Secretary of the Treasury directs, and
15 the Commissioner may refund any sum paid by mistake
16 or in excess of the fee required.

17 **TITLE II—PROTECTABILITY OF PLANT**
18 **VARIETIES AND CERTIFICATES OF PRO-**
19 **TECTION**

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1 mean the United States of America, its territories and posses-
2 sions, and the Commonwealth of Puerto Rico.

3 (c) The term "effective filing date," includes the filing
4 date to which an application for plant variety protection is
5 entitled under the provisions of section 55 of this title.

6 (d) The term "effective filing date actually in the United
7 States," means the earliest filing date to which an application
8 for plant variety protection is entitled under the provisions of
9 section 55 (b) of this title, excluding section 55 (a).

10 (e) The term "kind" means one or more related species
11 or subspecies singly or collectively known by one common
12 name, for example, soybean, flax, carrot, or radish.

13 (f) The term "date of determination" means the date
14 when there has been at least tentative determination that the
15 variety has been sexually reproduced with recognized char-
16 acteristics making it a novel variety, whether or not the
17 novelty thereof has been determined.

18 (g) The terms "breeder" and "discoverer" shall each
19 include the other as shall the terms "breed," "develop" and
20 "discover". The breeders or discoverers are those who direct
21 the final breeding, creating the novel variety or discover the
22 novel variety and, in either case, direct the determination
23 required by subsection (f).

24 (h) The term "sexually reproduced" shall include re-

1 peated sexual production through the reproduction system
2 designated by the breeder.

3 (i) The term "proprietor" when distinguished from
4 "breeder" means the employer when the breeder's work was
5 done for hire without contrary agreement, or other owner
6 by assignment or operation of law; but otherwise may in-
7 clude the applicant until his position is taken by his successor
8 in title, after which, the term "applicant" may mean
9 proprietor.

10 (j) The term "basic seed" means the seed planted to
11 produce certified or commercial seed.

12 (k) The term "testing" includes the period during
13 which there is testing of seed or other sexually reproducible
14 plant material, before any sale thereof, even though such
15 material may be given out, provided the purpose is for ex-
16 perimental testing on behalf of the proprietor, with observa-
17 tion by or reported to the proprietor (even though the crop
18 is used or sold for other than seed).

19 (l) The term "public variety" means a variety in this
20 country which is known or used, other than by the breeders
21 and their associates, or on sale; if other than secretly or for
22 the purpose of experimenting or testing; or as individual
23 plants not known to be either sexually self-reproducible or
24 repeatedly producible sexually at will.

1 (m) A variety described in a publication as specified
2 in section 42 (a) is "effectively available to workers in this
3 country" if a source from which it can be purchased is indi-
4 cated in a publication or readily determinable or if the publi-
5 cation teaches how to produce the variety from source-ma-
6 terial available to workers in this country.

7 **Sec. 42. Right to Plant Variety Protection; Plant Varieties**
8 **Protectable.**

9 Whoever is the breeder or the discoverer of any novel
10 variety of sexually reproduced plants, except as excluded in
11 section 45, or his successor in title, shall be entitled to plant
12 variety protection therefor, subject to the conditions and re-
13 quirements of this title unless one of the following bars exists:

14 (1) Before the date of determination thereof by the
15 breeder, or more than one year before the effective filing
16 date of the application therefor, the variety was (A) a
17 public variety in this country, or (B) effectively avail-
18 able to workers in this country and adequately described
19 by a publication reasonably deemed a part of the public
20 technical knowledge in this country which description
21 must include a disclosure of the principal characteristics
22 by which the variety is distinguished.

23 (2) The variety, though not in use or on sale in
24 this country, was in use or on sale elsewhere, other than
25 secretly or for the purpose of experimenting or testing,

1 by or in the knowledge of the applicant or his predeces-
2 sor in title, or their agents or representatives, more than
3 one year before the effective date of the application there-
4 for.

5 (3) An application for protection of the variety
6 based on the same breeders acts, was filed in a foreign
7 country by the proprietor or his privies more than one
8 year before the effective filing date actually in the United
9 States.

10 (4) Another is entitled to an earlier date of de-
11 termination for the variety: *Provided, however,* That the
12 benefit of a date of determination can be lost by not con-
13 tinuing a program of development and testing to com-
14 mercialization.

15 **Sec. 43. Reciprocity Limits.**

16 Protection under the Act shall be limited to proprietors
17 who are nationals of the United States, except where this lim-
18 itation would violate a treaty and except that proprietors
19 who are nationals of a foreign state in which they are dom-
20 icated shall be entitled to so much of the protection here
21 afforded as is afforded by said foreign state to nationals of the
22 United States for the same genus and species.

23 **Sec. 44. Public Interest In Wide Usage.**

24 The Secretary may declare a protected variety open to

1 use on a basis of equitable remuneration to the proprietor,
2 not less than a reasonable royalty, when he determines that
3 such declaration is necessary in order to insure an adequate
4 supply of fiber, food or feed in this country and that the
5 proprietor is not supplying the public needs at a price which
6 may reasonably be deemed fair. Such declaration may be,
7 with or without limitation, with or without designation of
8 what the remuneration is to be; and shall be subject to re-
9 view as under section 71 or 72 (any finding that the price
10 is not reasonable being reviewable), and shall remain in
11 effect not more than two years. In the event litigation is
12 required to collect such remuneration, a higher rate may be
13 allowed by the court.

14 **Sec. 45. Exclusions From Eligibility for Protection.**

15 Protection under this Act shall not be available for:

16 (a) Fungi and Bacteria,

17 (b) Hybrids.

18 **Chapter 5.—APPLICATIONS: FORM, WHO MAY FILE,**
19 **RELATING BACK, CONFIDENTIALITY**

20 **Sec. 51. Application for Recognition of Plant Variety**
21 **Rights.**

22 (a) An application for a certificate of Plant Variety
23 Protection may be filed by either the breeder or the pro-
24 prietor of the variety sought to be protected. The applica-
25 tion shall be made in writing to the Commissioner, shall be

1 signed by or on behalf of the applicant, and shall be accom-
2 panied by the prescribed fee. An application filed by a per-
3 son not the breeder shall state the basis on which it is filed.

4 (b) An error as to the naming of the breeder, without
5 deceptive intent, may be corrected at any time, in accordance
6 with regulation established by the Commissioner.

7 **Sec. 52. Content of Application.**

8 An application for a certificate recognizing plant variety
9 rights shall contain:

10 (1) The name of the variety except that a tempo-
11 rary designation will suffice until the certificate is to be
12 issued.

13 (2) A description of the variety setting forth its
14 novelty and a description of the genealogy and breeding
15 procedure, when known. The Commissioner may require
16 amplification, including the submission of adequate
17 photographs or drawings or plant specimens, if the
18 description is not adequate or as complete as is reason-
19 ably possible, and submission of records or proof of
20 proprietorship or of allegations made in the application.
21 A proprietor may add to or correct the description at
22 any time, before the certificate is issued, upon a showing
23 acceptable to the Commissioner that the revised descrip-
24 tion is retroactively accurate. Courts shall protect others
25 from any injustice which would result. The Commis-

1 sioner may accept records of the originator and of any
2 official seed certifying agency in this country as evidence
3 of stability where applicable.

4 (3) A declaration that a viable sample of basic seed
5 necessary for propagation of the variety will be deposited
6 and replenished periodically in a public repository in
7 accordance with regulations to be established hereunder.
8 This declaration may be added by amendment.

9 **Sec. 53. Joint Breeders.**

10 (a) When two or more persons are the breeders, one
11 (or his successor) may apply, naming the others.

12 (b) The Commissioner, after such notice as he may
13 prescribe, may issue a certificate of plant variety protection
14 to the applicant and such of the other breeders as may have
15 subsequently joined in the application.

16 **Sec. 54. Death or Incapacity of Breeder.**

17 Legal representatives of deceased breeders and of those
18 under legal incapacity may make application for plant vari-
19 ety protection upon compliance with the requirements and
20 on the same terms and conditions applicable to the breeder
21 or proprietor.

22 **Sec. 55. Benefit of Earlier Filing Date.**

23 (a) An application for plant variety protection for a
24 variety filed in this country by a person who has, or whose

1 predecessor or successor in title has, previously filed an
2 application for plant variety protection for the same variety
3 by the same breeder in a foreign country which affords simi-
4 lar privileges in the case of applications filed in the United
5 States or to citizens of the United States, shall have the same
6 effect as the same application would have if filed in the
7 United States on the date on which the application for plant
8 variety protection for the same variety was first filed in any
9 foreign country, if the application in this country is filed
10 within twelve months from the earliest date on which such
11 foreign application was filed. No application shall be entitled
12 to a right of priority under this section, unless the applicant
13 designates the foreign application in his application or by
14 amendment thereto and, if required by the Commissioner,
15 furnishes such copy, translation or both, as the Commissioner
16 may specify.

17 (b) An application for a certificate of plant variety pro-
18 tection for the same variety as was the subject of an applica-
19 tion previously filed in the United States by or on behalf
20 of the same proprietor, or by his predecessor in title, shall
21 have the same effect as to such variety as though filed on
22 the date of the prior application if filed before the issuance
23 of the certificate or termination of proceedings on the first
24 application or on an application similarly entitled to the
25 benefit of the filing date of the first application and if it con-

1 tains or is amended to contain a specific reference to the
2 earlier filed application.

3 (c) A later application shall not by itself establish that
4 a characteristic newly described was in the variety at the
5 time of the earlier application.

6 **Sec. 56. Confidential Status of Application.**

7 Applications for plant variety protection and their con-
8 tents shall be kept in confidence by the Plant Variety Pro-
9 tection Office, by the Board, and by the offices in the De-
10 partment of Agriculture to which access may be given under
11 regulations. No information concerning the same shall be
12 given without the authority of the applicant or proprietor,
13 unless necessary under special circumstances as may be de-
14 termined by the Commissioner, except that the Commis-
15 sioner may publish the variety names designated in applica-
16 tions, stating the kind to which each applies.

17 **Sec. 57. Publication.**

18 The Commissioner may establish regulations for the
19 publication of pending applications at the request of the
20 proprietor.

21 **Chapter 6.—EXAMINATION, RESPONSE TIME, INI-**

22 **TIAL APPEALS**

23 **Sec. 61. Examination of Application.**

24 The Commissioner shall cause an examination to be
25 made of the application and if on such examination it is

1 determined that the applicant is entitled to plant variety
2 protection under the law, the Commissioner shall issue a
3 notice of allowance of plant variety protection therefor as
4 hereinafter provided.

5 **Sec. 62. Notice of Refusal; Reconsideration.**

6 (a) Whenever an application is refused, or any objection
7 or requirement made by the examiner, the Commissioner
8 shall notify the applicant thereof, stating the reasons therefor,
9 together with such information and references as may be
10 useful in judging the propriety of continuing the prosecution
11 of the application; and if after receiving such notice the
12 applicant requests reconsideration, with or without amend-
13 ment, the application shall be reconsidered.

14 (b) For taking appropriate action after a refusal, an
15 applicant shall be allowed six months, or such other time as
16 the Commissioner in exceptional circumstances shall set in the
17 refusal, or such time as he may allow as an extension. With-
18 out such extension, action may be taken up to three months
19 late by paying a delayed filing fee.

20 **Sec. 63. Initial Appeal.**

21 When an application for plant variety protection has been
22 refused by the examiner, the applicant may appeal from the
23 decision of the examiner to the Commissioner. The Commis-
24 sioner shall seek the advice of the Plant Variety Protection
25 Board on all appeals, before deciding the appeal.

1 within sixty days after such decision or within such further
2 time as the Commissioner allows. A party contemplating ap-
3 peal as provided herein shall notify any adverse party of his
4 intention and such adverse party, not the Commissioner, shall
5 have the right, by notice served within ten days of the notice
6 to him, to elect that any review shall be by civil action. In
7 such suits the record in the Plant Variety Protection Office
8 shall be admitted on motion of either party upon the terms
9 and conditions as to costs, expenses, and the further cross-
10 examination of witnesses, as the court imposes, without prej-
11 udice to the right of the parties to take further testimony.
12 The testimony and exhibits of the record in the Plant Variety
13 Protection Office when admitted shall have the same effect as
14 if originally taken and produced in the suit.

15 (b) Such suit may be instituted against the party in
16 interest as shown by the record of the Plant Variety Protec-
17 tion Office at the time of the decision complained of, but any
18 party in interest may become a party to the action. If there
19 be adverse parties residing in a plurality of districts not em-
20 braced within the same State, or an adverse party residing
21 in a foreign country, the United States District Court for the
22 District of Columbia, or any United States district court to
23 which it may transfer the case, shall have jurisdiction and
24 may issue summons against the adverse parties directed to
25 the marshal of any district in which any adverse party resides.

1 Summons against adverse parties residing in foreign countries
2 may be served by publication or otherwise as the court
3 directs. The Commissioner shall not be made a party but he
4 shall have the right to intervene. Judgment of the court in
5 favor of the right of an applicant to plant variety protection
6 shall authorize the Commissioner to issue a certificate of plant
7 variety protection on the filing in the Plant Variety Protec-
8 tion Office of a certified copy of the judgment and on com-
9 pliance with the requirements of this Act.

10 **Chapter 8.—CERTIFICATES OF PLANT VARIETY**
11 **PROTECTION**

12 **Sec. 81. Plant Variety Protection.**

13 (a) If it appears that the proprietor is entitled to plant
14 variety protection under the law, a written notice of allow-
15 ance shall be given or mailed to the proprietor. The notice
16 shall specify the sum, constituting the issue fee, which shall
17 be paid within one month thereafter.

18 (b) Upon timely payment of this sum, and provided
19 that deposit of seed has been made in accordance with sec-
20 tion 52 (c), the certificate of plant variety protection shall
21 issue.

22 (c) If any payment required by this section is not
23 timely made, but is submitted with the fee for delayed
24 payment within nine months after the due date, or within
25 such further time as the Commissioner may allow, it shall
26 be accepted.

1 **Sec. 82. How Issued.**

2 A certificate of plant variety protection shall be issued
3 in the name of the United States of America under the seal
4 of the Plant Variety Protection Office, and shall be signed
5 by the Commissioner or have his signature placed thereon,
6 and shall be recorded in the Plant Variety Protection Office.

7 **Sec. 83. Contents and Term of Plant Variety Protection.**

8 (a) Every certificate of plant variety protection shall
9 certify that the breeder or proprietor, his heirs or assignees,
10 has the right, during the term of the plant variety protection,
11 to exclude others from selling the variety, or offering it
12 for sale, or reproducing it, or importing it, or exporting it,
13 or using it in producing (as distinguished from developing)
14 a hybrid or different variety therefrom, to the extent pro-
15 vided by this Act. If the proprietor so elects, the certificate
16 shall also specify that in the United States seed of the variety
17 shall be sold by variety name only as a class of certified
18 seed and, if specified, shall also conform to the number of
19 generations designated by the proprietor. Any rights, or all
20 rights except those elected under the preceding sentence,
21 may be waived; and the certificate shall conform to such
22 waiver. The Commissioner may at his discretion permit such
23 election or waiver to be made after certifying and amend
24 the certificate accordingly, without retroactive effect.

25 (b) The term of plant variety protection shall expire

1 seventeen years from the date of issue of the certificate in
2 the United States. If the certificate is not issued within
3 three years from the effective filing date, the Commissioner
4 may shorten the term by the amount of time attributed to
5 the applicant.

6 (c) The term of Plant Variety Protection shall also ex-
7 pire if a proprietor fails to comply with regulations, in force
8 at the time of certifying, relating to replenishing seed in
9 a public repository: *Provided, however,* That this expira-
10 tion shall not occur unless notice is mailed to the proprietor
11 and he fails, within the time allowed thereafter, not less than
12 three months, to comply with said regulations, paying the
13 delayed fee in section 31 (a) (8).

14 **Sec. 84. Certificate of Correction of Plant Variety Protec-**
15 **tion Office Mistake.**

16 Whenever a mistake in certifying a protected plant
17 variety, incurred through the fault of the Plant Variety
18 Protection Office, is clearly disclosed by the records of the
19 Office, the Commissioner may issue a certificate of correc-
20 tion stating the fact and nature of such mistake, under seal,
21 without charge, to be recorded in the records of plant variety
22 protection. A copy thereof shall be attached to each copy
23 of the application of the plant variety protection and such
24 certificate shall be considered as part of the original certifi-
25 cate of plant variety protection. Every such certificate of

1 plant variety protection shall have the same effect and opera-
2 tion in law on the trial of action as if the same had been
3 originally issued in such corrected form. The Commissioner
4 may issue a corrected certificate of plant variety protection
5 without charge in lieu of and with like effect as a certificate
6 of correction.

7 **Sec. 85. Certificate of Correction of Applicant's Mistake.**

8 Whenever a mistake of a clerical or typographical na-
9 ture, or of minor character, or in the description of the
10 variety, which was not the fault of the Plant Variety Pro-
11 tection Office, appears in certifying a plant variety protec-
12 tion and a showing has been made that such mistake oc-
13 curred in good faith, the Commissioner may, upon payment
14 of the required fee, issue a certificate of correction, if the
15 correction unquestionably could have been made before the
16 certificate issued. Such certificate of plant variety protection
17 shall have the same effect and operation in law on the trial
18 of actions for causes thereafter arising as if the same had
19 been originally issued in such corrected form.

20 **Sec. 86. Correction of Named Breeder.**

21 An error as to the naming of a breeder in the applica-
22 tion, without deceptive intent, shall not affect validity of plant
23 variety protection and may be corrected at any time by the
24 Commissioner in accordance with regulations established by

1 him or upon order of a federal court before which the matter
2 is called in question. Upon such correction the Commissioner
3 shall issue a certificate accordingly. Such correction shall not
4 deprive a breeder of any rights he otherwise would have had.

5 **Chapter 9.—REEXAMINATION AFTER ISSUE, AND**
6 **CONTESTED PROCEEDINGS**

7 **Sec. 91. Reexamination After Issue.**

8 (a) Any person may, within five years after the issu-
9 ance of a certificate of plant variety protection, notify the
10 Commissioner in writing of facts which may have a bearing
11 on the protectability of the variety, and the Commissioner
12 may cause such plant variety protection to be reexamined
13 in the light thereof.

14 (b) Reexamination of plant variety protection under
15 this section and appeals shall be pursuant to the same pro-
16 cedures and with the same rights as for original examina-
17 tions. Abandonment of the procedure while subject to a rul-
18 ing against the retention of the certificate shall result in can-
19 cellation of the plant variety certificate thereon and notice
20 thereof shall be endorsed on copies of the specification of the
21 protected plant variety thereafter distributed by the Plant
22 Variety Protection Office.

23 (c) If a person acting under subsection (a), within the
24 time specified above, makes a prima facie showing of facts
25 needing proof, the Commissioner may direct that the reexami-

1 nation include such interparty proceedings as he shall
2 establish.

3 **Sec. 92. Priority Contest.**

4 (a) If the Commissioner determines that two applica-
5 tions of different breeders or proprietors may be based on the
6 same variety, he may:

7 (1) Initiate a priority contest on his own motion
8 whether or not one of the applications may have been
9 certificated; or

10 (2) Issue a certificate on the application having the
11 earliest effective filing date, with notice to all; or

12 (3) Issue a certificate naming both proprietors as
13 alternative owners, under a single variety name accept-
14 able to both.

15 (b) On request of one proprietor when a certificate has
16 been issued naming another proprietor as an owner or alter-
17 native owner, both having applied for protection on the same
18 variety, the Commissioner shall institute a priority contest,
19 except that a proprietor shall have forfeited his right to assert
20 priority for the purpose of obtaining plant variety protection
21 when an adverse certificate has issued if he fails to make the
22 request within one year of the mailing of notice specified in
23 part (2) above or if he fails to make the request within the
24 period for taking action after refusal of his application on the
25 basis of the adverse certificate.

1 **Sec. 93. Effect of Adverse Final Judgment or of Non**
2 **Action.**

3 (a) A final judgment under section 92 adverse to an
4 application from which no appeal or other review had been
5 or can be taken or had shall constitute cancellation of any
6 certifying on that application, and notice thereof shall be
7 endorsed on copies of the specifications of the protected plant
8 variety thereafter distributed by the Plant Variety Protection
9 Office.

10 (b) Any person who has not proceeded in accordance
11 with the provision of this chapter shall not be foreclosed or
12 in any way prejudiced with respect to the defense of an
13 infringement suit or affirmative relief under declaratory judg-
14 ment proceedings.

15 (c) No person subject to an adverse decision in a pro-
16 ceeding under this chapter shall be foreclosed with respect to
17 asserting comparable grounds in defense of an infringement
18 suit or as a basis for affirmative relief under declaratory judg-
19 ment proceedings.

20 **Sec. 94. Interfering Plant Variety Protection.**

21 The proprietor of a certificate of plant variety protection
22 may have relief against another proprietor of a certificate of
23 the same variety, or in case alternate owners are named, by
24 civil action, and the court may adjudge the question of
25 validity of the respective certificates, or the ownership of the

1 certificate. The provisions of section 73 (b) of this title shall
 2 apply to actions brought under this section.

3 **TITLE III—PLANT VARIETY PROTECTION**
 4 **AND RIGHTS**

Chapter	Section
10. Ownership and Assignment.....	101
11. Infringement of Plant Variety Protection.....	111
12. Remedies for Infringement of Plant Variety Protection, and Other Actions.....	121
13. Intent and Severability.....	131
14. Temporary Provision and Related Enactments.....	141

5 **Chapter 10.—OWNERSHIP AND ASSIGNMENT**

6 **Sec. 101. Ownership and Assignment.**

7 (a) Subject to the provisions of this title, plant variety
 8 protection shall have the attributes of personal property.

9 (b) Applications for certificates of plant variety protec-
 10 tion, or any interest in a variety, shall be assignable by an
 11 instrument in writing. The proprietor may in like manner
 12 grant and convey an exclusive right to use of the variety in
 13 the whole or any specified part of the United States.

14 (c) A certificate of acknowledgment under the hand
 15 and official seal of a person authorized to administer oaths
 16 within the United States, or in a foreign country, of a diplo-
 17 matic or consular officer of the United States or an officer
 18 authorized to administer oaths whose authority is proved by
 19 a certificate of a diplomatic or consular officer of the United
 20 States, shall be prima facie evidence of the execution of an

1 assignment, grant or conveyance of plant variety protection
2 or application for plant variety protection.

3 (d) An assignment, grant, conveyance or license shall
4 be void as against any subsequent purchaser or mortgagee for
5 a valuable consideration, without notice, unless it, or an
6 acknowledgment by the assignor, and so forth, that there is
7 such encumbrance, is recorded in the Plant Variety Protec-
8 tion Office within one month from its date or one month prior
9 to the date of such subsequent purchase or mortgage.

10 **Sec. 102. Ownership During Testing.**

11 An owner who, with suitable notice, releases possession
12 of seed or other sexually reproducible plant material for
13 testing retains ownership with respect thereto; and any di-
14 version from authorized testing, or any unauthorized reten-
15 tion, of such material by anyone who has knowledge that
16 it is under such notice, or who is chargeable with notice, is
17 prohibited, and violates the property rights of the owner.
18 Anyone receiving the material tagged or labeled with the
19 notice is chargeable with the notice. The owner is entitled
20 to remedy and redress in a civil action hereunder. No remedy
21 available by state or local law is hereby excluded. No such
22 notice shall be used, or if used be effective, when the owner
23 has made identical sexually reproducible plant material
24 available to the public, as by sale thereof.

1 **Chapter 11.—INFRINGEMENT OF PLANT VARIETY**
2 **PROTECTION**

3 **Sec. 111. Infringement of Plant Variety Protection.**

4 Except as otherwise provided in this title, it shall be an
5 infringement of the rights of a proprietor of a novel variety
6 to perform without authority, any of the following acts in
7 the United States, or in commerce which can be regulated by
8 Congress or affecting such commerce, prior to expiration of
9 the right to plant variety protection but after either the issue
10 of the certificate or the distribution of a novel plant variety
11 with the notice under section 127:

12 (1) sell the novel variety, or offer it or expose it for
13 sale, deliver it, ship it, consign it, exchange it, or solicit
14 an offer to buy it, or any other transfer of title or pos-
15 session of it; except as otherwise provided herein;

16 (2) import the novel variety into, or export it from,
17 the United States;

18 (3) multiply the novel variety as a step in market-
19 ing (for growing purposes) the variety; or

20 (4) use the novel variety in producing (as dis-
21 tinguished from developing) a hybrid or different va-
22 riety therefrom; or

23 (5) use seed which had been marked "propaga-

1 tion prohibited" or progeny thereof to propagate the
2 novel variety; or

3 (6) dispense the novel variety to another, in a
4 form which can be propagated, without notice as to
5 being a protected variety under which it was received;
6 or

7 (7) perform any of the foregoing acts even in in-
8 stances in which the novel variety is multiplied other
9 than sexually; or

10 (8) instigate or actively induce performance of any
11 of the foregoing acts.

12 **Sec. 112. Right To Save Seed.**

13 Except under subsections (3) and (4) of section 111,
14 it shall not infringe any right hereunder for a person to save
15 seed and grow the resulting variety for his own use.

16 **Sec. 113. Private Defense Against Delayed Application.**

17 No plant variety protection under this Act shall abridge
18 the rights of any person who had developed a variety or his
19 successor in business to produce, reproduce or sell his own
20 variety, beginning more than one year prior to the effective
21 filing date of an adverse application for a certificate of plant
22 variety protection.

23 **Sec. 114. Crop Exemption.**

24 It shall not be an infringement to sell seed grown from
25 the protected variety, obtained (for growing) by authority

1 of the proprietor or by saving seed under section 112, for use
 2 as food, feed, in manufacture or the like, if the sale is bona
 3 fide for that purpose, and is in channels which are usual for
 4 that purpose and in a manner exclusively for that purpose. A
 5 purchaser who diverts such seed from those channels to grow-
 6 ing purposes shall not be entitled to any benefit for lack of
 7 notice under section 127.

8 **Sec. 115. Research Exemption.**

9 The use and reproduction of a protected variety for plant
 10 breeding or other bona fide research shall not constitute an
 11 infringement of the protection provided under this Act.

12 **Sec. 116. Intermediary Exemption.**

13 It shall not be an infringement to deliver, ship, consign
 14 or other acts of transport or change of possession when per-
 15 formed by a mere carrier or other innocent intermediaries, or
 16 to offer for sale by an innocent advertising medium.

17 **Chapter 12.—REMEDIES FOR INFRINGEMENT OF**
 18 **PLANT VARIETY PROTECTION, AND OTHER**
 19 **ACTIONS**

20 **Sec. 121. Remedy for Infringement of Plant Variety Pro-**
 21 **tection.**

22 A proprietor shall have remedy by civil action for in-
 23 fringement of his plant variety protection under section 111.
 24 If a variety is sold under the name of a proprietor's variety as

1 shown in his certificate, there is a prima facie presumption
2 that it is the same variety.

3 **Sec. 122. Presumption of Validity; Defenses.**

4 (a) Certificates of plant variety protection shall be pre-
5 sumed valid. The burden of establishing invalidity of a plant
6 variety protection shall rest on the party asserting invalidity.

7 (b) The following shall be defenses in any action charg-
8 ing infringement and shall be pleaded: (1) noninfringement,
9 absence of liability for infringement, or unenforceability; (2)
10 invalidity of the plant variety protection in suit on any
11 ground specified in section 42 of this title as a condition for
12 protectability; (3) invalidity of the plant variety protection
13 in suit for failure to comply with any requirement of section
14 52; (4) that the asserted infringement was performed un-
15 der an existing certificate adverse to that asserted and prior
16 to notice of the infringement; and (5) any other fact or
17 act made a defense by this Act.

18 **Sec. 123. Injunction.**

19 The several courts having jurisdiction of cases under this
20 title may grant injunctions in accordance with the principles
21 of equity to prevent the violation of any right hereunder on
22 such terms as the court deems reasonable.

23 **Sec. 124. Damages.**

24 (a) Upon finding for the proprietor the court shall
25 award damages adequate to compensate for the infringement

1 but in no event less than a reasonable royalty for the use
2 made of the variety by the infringer, together with interest
3 and costs as fixed by the court.

4 (b) When the damages are not determined by the jury,
5 the court shall determine them. In either event the court may
6 increase the damages up to three times the amount deter-
7 mined.

8 (c) The court may receive expert testimony as an aid
9 to the determination of damages or of what royalty would
10 be reasonable under the circumstances.

11 (d) As to infringement prior to, or resulting from a
12 planting prior to, issuance of a certificate for the infringed
13 variety, a court finding the infringer to have established
14 innocent intentions, shall have discretion as to awarding
15 damages.

16 **Sec. 125. Attorney Fees.**

17 The court in exceptional cases may award reasonable
18 attorney fees to the prevailing party.

19 **Sec. 126. Time Limitation on Damages.**

20 (a) No recovery shall be had for any infringement
21 committed more than six years (or three years with knowl-
22 edge of the proprietor) prior to the filing of the complaint
23 or counterclaim for infringement in the action.

24 (b) In the case of claims against the United States

1 Government for unauthorized use of a protected variety, the
2 period before bringing suit, up to six years, between the date
3 of receipt of written claim for compensation by the depart-
4 ment or agency of the Government having authority to settle
5 such claim, and the date of mailing by the Government of a
6 notice to the claimant that his claim has been denied shall
7 not be counted as part of the period referred to in the pre-
8 ceding paragraph.

9 **Sec. 127. Limitation of Damages; Marking and Notice.**

10 Proprietors may give notice to the public by physically
11 associating with or affixing to the container of seed of a novel
12 variety or by fixing to the novel variety, a label containing
13 the words "Propagation Prohibited" and after the certificate
14 issues, such additional words as "U.S. Protected Variety".
15 In the event the novel variety is distributed by authorization
16 of the proprietor and is received by the infringer without
17 such marking, no damages shall be recovered against such
18 infringer by the proprietor in any action for infringement,
19 except on proof that the infringer was notified of the in-
20 fringement and continued to infringe thereafter, in which
21 event damages may be recovered only for infringement oc-
22 curring after such notice. As to both damages and injunc-
23 tion, a court shall have discretion to be lenient as to disposal
24 of materials acquired in good faith by acts prior to such
25 notice.

1 **Sec. 128. False Marking.**

2 (a) Each of the following acts, if performed in connec-
3 tion with the sale, offering for sale, or advertising of sexually
4 reproducible plant material, is prohibited, and the Commis-
5 sioner may, if he determines after an opportunity for hear-
6 ing that the act is being so performed, issue an order to
7 cease and desist, said order being binding unless appealed
8 to the appropriate United States Court of Appeals under
9 the Federal Rules of Appellate Procedure:

10 (1) Use of the words "U.S. Protected Variety"
11 or any word or number importing that the material is
12 a variety protected under certificate, when it is not.

13 (2) Use of any wording importing that the ma-
14 terial is a variety for which an application for plant
15 variety protection is pending, when it is not.

16 (3) Use of the phrase "propagation prohibited" or
17 similar phrase without reasonable basis, a statement of
18 this basis being promptly filed with the Commissioner if
19 the phrase is used beyond experimental testing and no
20 application has been filed. Any reasonable basis expires
21 one year after commencement of use of the phrase be-
22 yond experimental testing except as justified thereafter
23 by a pending application or a certificate still in force.

24 (b) Anyone convicted of violating a binding cease and

1 desist order, or of performing any act prohibited in sub-
2 section (a) of this section for the purpose of deceiving the
3 public, shall be fined not more than \$10,000 and not less
4 than \$500.

5 (c) Anyone whose business is damaged or is likely to
6 be damaged by an act prohibited in subsection (a) of this
7 section, or is subjected to competition in connection with
8 which such act is performed, may have remedy by civil
9 action.

10 **Sec. 129. Nonresident Proprietors; Service and Notice.**

11 Every proprietor not residing in the United States may
12 file in the Plant Variety Protection Office a written desig-
13 nation stating the name and address of a person residing
14 within the United States on whom may be served process
15 or notice of proceedings affecting the plant variety protec-
16 tion or rights thereunder. If the person designated cannot
17 be found at the address given in the last designation, or if
18 no person has been designated, the United States District
19 Court for the District of Columbia shall have jurisdiction
20 and summons shall be served by publication or otherwise as
21 the court directs. The court shall have the same jurisdiction
22 to take any action respecting the plant variety protection, or
23 rights thereunder that it would have if the proprietor were
24 personally within the jurisdiction of the court.

1 The Federal Seed Act (53 Stat. 1275) is amended as
2 follows:

3 (a) By adding at the end thereof:

4 **“TITLE V—SALE OF UNCERTIFIED SEED OF**
5 **PROTECTED VARIETY**

6 **“Section 501.**

7 “(a) It shall be unlawful in the United States or in in-
8 terstate or foreign commerce to sell by variety name seed not
9 certified by an official seed certifying agency when it is a
10 variety for which a certificate of plant variety protection
11 under the Plant Variety Protection Act specifies sale only
12 as a class of certified seed: *Provided*, That such seed may
13 be labeled as to variety name when used in a mixture by, or
14 with the approval of, the proprietor of the variety.”

15 (b) By adding at the end of section 102 the following
16 wording: Seed shall be certified only when the basic seed
17 from which a variety was produced was furnished by the
18 originator of the variety, his successor in title, and, when
19 specified, conforms to the number of generations designated
20 by the originator.

21 **Sec. 143. Amendment of Judicial Code.**

22 Title 28 of the United States Code, entitled Judicial
23 Code and Judiciary, is amended as follows:

24 (a) After section 1544 add:

1 **Sec. 1545. Decision of the Plant Variety Protection Office.**

2 The Court of Customs and Patent Appeals shall have
3 nonexclusive jurisdiction to review by appeal decisions of
4 the Plant Variety Protection Office, provided that the deci-
5 sion appealed from is on appeal within the Plant Variety
6 Protection Office, if such appeal is permitted.

7 (b) In section 1338 after "Patents" in the heading,
8 after "patents" and after "patent" (both occurrences) insert
9 ", plant variety protection".

DEPARTMENT OF AGRICULTURE,
OFFICE OF THE SECRETARY,
Washington, D.C., June 10, 1970.

HON. ALLEN J. ELLENDER,
Chairman, Committee on Agriculture and Forestry,
U.S. Senate.

DEAR MR. CHAIRMAN: This is in reply to your request of October 24, 1969, for a report on S. 3070, a bill to encourage the development of novel varieties of sexually reproduced plants and making them available to the public, by making protection available to those who breed, develop, or discover them, thereby promoting progress in the useful art of agriculture.

This Department supports the objective of S. 3070.

We believe that it is desirable to provide incentive for private enterprise to undertake the research and development required to produce novel varieties of sexually produced plants. The proposed legislation would provide such incentive.

The Department is not prepared at this time to comment on the specific provisions of S. 3070. The Administration has under consideration a number of important changes to the laws protecting proprietary rights in the United States. This review will have implications for programs such as the one proposed here. We wish to reserve further comment on the provisions of S. 3070 until we have had an opportunity to evaluate them in the light of the findings of this Administration review.

The Bureau of the Budget advises that there is no objection to the presentation of this report from the standpoint of the Administration's program.

Sincerely,

J. PHIL CAMPBELL,
Under Secretary.

Senator JORDAN. I think it is an important piece of legislation. I am glad to see so many witnesses here. I do not think I am going to get to hear all of you, because I am going to have to leave here at 10:30. The Senate opens early today, and I have a duty to perform before that. If we do not get through, I shall set another day real soon to come back to hear the rest of you, because I do want to hear all of those who want to be heard and have something to contribute to this piece of legislation.

Senator MILLER. I am glad you are here this morning, because you are one of the most interested persons in this particular bill. It has been through your efforts that this bill has gotten this far, and I want to thank you for being with us.

You may proceed in any way you like.

**STATEMENT OF HON. JACK MILLER, A U.S. SENATOR FROM THE
STATE OF IOWA**

Senator MILLER. Thank you, Mr. Chairman. I deeply appreciate the opportunity to make this statement in support of S. 3070, a bill I introduced on October 23, 1969, along with Senators Dole, Eastland, Hollings, yourself, and Young of North Dakota as cosponsors. I am particularly grateful to you, Mr. Chairman, for scheduling this hearing immediately following hearings in the House on a similar bill.

All should be interested in the growth and well-being of agriculture, the world's largest industry. One of the smallest but most vital raw materials for this industry is seed. American farmers spend approximately three-quarters of a billion dollars for seed each year. The bill under your consideration is designed to encourage the development of new varieties of sexually reproduced plants by providing protection for those who breed and develop them, thus promoting the growth and well-being of agriculture.

The protection afforded by this bill covers plants which are reproduced by seeds, such as alfalfa, carrots, lettuce and grass, to name just a few. It would leave unchanged the present Federal laws which give protection to plant varieties reproduced asexually—that is, other than by seeds—such as by cutting and grafting.

Breeding programs, whether public or private, require substantial investments in research, facilities, land and labor. A private company cannot afford to make such investments unless it has the opportunity to make a profit. Heavy commercial investments in research have already produced new varieties of corn and sorghum hybrids. One of the most well-known discoveries of recent years is high lysine corn, the inbred lines of which would be covered by this bill. Hybrids have their own built-in protection for their developer, since he can control the inbred or parental stocks and the hybrid cannot be reproduced from hybrid seed. Therefore, hybrids are excluded from the bill.

Other areas where research has produced useful new varieties are in the vegetable-seed industry, where open pollinated tomato varieties have been developed which are much more adaptable to mechanical harvesting than previous varieties, and in the grain food industry where new open pollinated wheat varieties and dwarf rice have been developed.

The constitutional authority for providing plant variety protection is found in the authors and inventors' clause of the U.S. Constitution (art. I, sec. 8, clause 8), which gives Congress the power to secure "for limited times to authors and inventors the exclusive right to their respective writings and discoveries;" and also in the commerce clause (art. I, sec. 8, clause 3). The Constitution clearly intended recognition of inventors and discoverers for their work in all segments of industry, including agriculture. Therefore, it is entirely proper to extend some form of rights to plant breeders of sexually reproduced plants.

At this time, Mr. Chairman, I would like to discuss the principal features of S. 3070.

(1) The new law would be administered by a new office to be established within the U.S. Department of Agriculture called the Plant Variety Protection Office and headed by a commissioner appointed by the Secretary of Agriculture. The Commissioner of Plant Variety Protection would be assisted by a plant variety protection board which would be made up of approximately equal representation from the seed industry sector on the one hand and the Government or public sector on the other. The review board would be empowered to make advisory decisions on appeals from decisions of the examiner. It would also advise the Commissioner concerning the rules and regulations which supplement the act.

(2) Applications for plant variety protection would be handled much as industrial patent applications are. The breeder would submit a detailed, written description of his new variety in which he would set forth his claims for novelty, for stability, and for reproductibility. A sample of the basic seed would also be deposited to protect the public interest.

(3) Breeders using the system would be charged fees, so that the whole program could be essentially self-supporting. The fee would vary depending on whether extra copies of the certificate of protection are

desired, an appeal is made, an assignment is involved, or whether there is a delay in payment, but the basic application fee would be \$50.

The basic fee structure in the bill was patterned after the existing plant patent law. However, patent fees under that law only cover about 60 percent of the Patent Office expenses. The committee might wish to consider an amendment which would establish a fee structure sufficient to cover the costs of the program or, as an alternative, which would authorize the Secretary of Agriculture to establish such a fee schedule.

(4) Any sexually reproduced plant other than hybrids, fungi, and bacteria would be protectable under the new act. A breeder or developer would have 1 year after commercial sale of the variety to apply for protection. This scheme would be available to foreign breeders to the extent their governments afford like privileges to nationals of the United States.

(5) Once approved by the Plant Variety Protection Office, a certificate of plant variety protection would be issued. This certificate would allow the owner to imprint some such statement as "U.S. Protected Variety" on the label of the seed package, thus notifying the public of the protected status of his variety. Or, should the applicant desire, he could additionally elect to protect his variety under the certification system, in which case the variety could be sold only as certified seed, which fact would be made evident on the special certification label.

(6) Applications or certificates of plant variety protection would be assignable. The proprietor could grant or convey an exclusive right to the use of his varieties in the United States or any part of it.

(7) The term of protection proposed for all corps would be 17 years. This is the same period of protection granted asexual plants under the Plant Patent Act.

(8) Infringement of the right granted would occur when anyone, without authority, (a) sells or offers for sale the protected variety; (b) reproduces the variety as a step in the production of another variety of hybrid; (c) imports or exports the variety into or from the United States; or, (d) multiplies the novel variety as a step in marketing, such as by producing seed for growing transplants for sale.

(9) The law would include a special exemption for farmers. They would be allowed to produce seed of a protected variety for their own use.

(10) Defense of the right granted would be through civil action. In such actions, a certificate of plant variety protection would be presumed valid and it would, therefore, be incumbent on the defendant in the civil action to establish invalidity of the certificate. Should the court decide in favor of the plaintiff, damages, would be awarded which, in no event, would be less than a reasonable royalty for the use made of the protected variety by the infringer.

This legislation is designed to serve as a stimulus for investment of private funds in variety research and development of seed. Agricultural producers will benefit from the new and improved varieties providing larger yields, greater disease and insect resistance, increased protein, oil and fiber strength, and other crop improvements. The ultimate consumer will also benefit from the greater efficiency of crop production.

New and improved varieties of high quality seed must be developed to keep our farmers competitive, both at home and abroad. American

agriculture constantly needs new crop varieties, because the hazards from disease and insect pests are constantly changing. For example, some plants which are immune to certain diseases, such as rusts, are not immune to new strains of those diseases. We cannot afford to stand still.

I hope this subcommittee will act favorably upon this legislation as soon as possible.

Thank you, Mr. Chairman.

Senator JORDAN. Thank you very much. That is a fine statement. I hope you can stay around a little while in case somebody wishes to ask you a question.

Senator MILLER. I shall be happy to.

Senator JORDAN. Thank you.

Mr. Blum? Mr. Blum is a Deputy Administrator of Regulatory Programs, Consumer and Marketing Service, U.S. Department of Agriculture.

Mr. Blum, we are glad to have you with us this morning. We shall be glad to hear from you, sir.

STATEMENT OF JOHN C. BLUM, DEPUTY ADMINISTRATOR, REGULATORY PROGRAMS, CONSUMER AND MARKETING SERVICE, AND MARTIN G. WEISS, ASSISTANT TO DEPUTY ADMINISTRATOR FOR FARM RESEARCH, AGRICULTURAL RESEARCH SERVICE, U.S. DEPARTMENT OF AGRICULTURE

Mr. BLUM. Thank you, sir. I appreciate the invitation to appear before your committee and present the views of the Department of Agriculture on S. 3070. We have submitted an official report on this bill to the chairman of the Senate Committee on Agriculture and Forestry.

The bill is designed, in the words of its preamble, "to encourage the development of novel varieties of sexually reproduced plants and making them available to the public, by making protection available to those who breed, develop, or discover them, thereby promoting progress in the useful art of agriculture."

The Department supports this objective of the bill.

We believe that it is desirable to provide incentive for private enterprise to undertake the research and development required to produce novel varieties of sexually produced plants. The proposed legislation would provide such incentive.

However, the Department is not prepared at this time to comment on the specific provisions of S. 3070. The administration has under consideration a number of important changes to the laws protecting proprietary rights and technical innovations in the United States. This review will have implications for programs such as the one proposed here. We wish to reserve further comment on the provisions of S. 3070 until we have had an opportunity to evaluate them in the light of the findings of this administration review.

Although I am unable to comment on policy aspects of the proposed bill, I have with me members of the Department's technical staff who would be glad to assist in answering any questions you may have concerning the technical aspects of the bill, or if time precludes this this morning, we shall be glad to provide for the record any additional information you may desire.

This concludes my brief statement.

Senator JORDAN. Thank you.

Mr. Blum, four questions have been given to me here to be asked you. If you do not have the answer or some of your associates do not have it, you may supply it for the record later on.

What would be the status of the varieties now being sold to the farmers?

Mr. BLUM. If Dr. Martin Weiss may respond to this—

Senator JORDAN. Certainly.

Mr. WEISS. I believe there is a provision in the bill, sir, that will permit a variety to be protected if it has been sold for 1 year, but 1 year only, prior to the date of filing.

Senator JORDAN. It is my understanding that the Department supports the principle of this legislation.

Mr. BLUM. Yes.

Senator JORDAN. Do you believe the legislation is of benefit to American agriculture?

Mr. BLUM. Yes; we do, sir.

Senator JORDAN. Of course, your statement here is at odds.

Mr. BLUM. Subject to—

Senator JORDAN. Yes, I understand.

Do you believe this legislation will be in the general public interest?

Mr. BLUM. Yes; we do.

Senator JORDAN. I certainly do, myself. Take wheat, for instance. You know very well rice has been developed—European rice—which has gone a long way toward solving the hunger problems around the world and a great many other important problems. It is certainly important when a person or a company develops a new strain or seed that far outproduces another or is resistant to disease, and so forth, that he should be protected.

Mr. BLUM. Yes, sir.

Senator JORDAN. I see no reason why anybody would be against that type of legislation.

Mr. BLUM. The central purpose of the bill is to encourage innovation and development of things which we believe to be in the public interest.

Senator JORDAN. Yes. There is not much reason for a man or a company or whatever it might be to work hard for years—and it takes years, sometimes, to produce a new strain of anything—and not be able to get any benefit from it.

Mr. BLUM. Yes.

Senator JORDAN. Thank you very much.

Do any of your associates have anything to add?

Mr. BLUM. No; thank you.

Senator MILLER. Could I inquire?

Senator JORDAN. Yes.

Senator MILLER. Mr. Blum, while it is true that the bill may have an immediate impact on the protection afforded the developers of seed, is it not also true that the ultimate beneficiary of this is the consumer, through more efficient agriculture?

Mr. BLUM. I think this is included in the public-interest aspect that we said we thought would be furthered by this, that the consumer would have some interest in having available new varieties and more efficient ways of doing business.

Senator MILLER. So, I think it might well be said that in many respects this is a consumer bill.

Mr. BLUM. It certainly has consumer-benefit aspects.

Senator MILLER. And public interest, of course, goes beyond just the consumer.

We are concerned about remaining competitive in international markets. If we do not encourage investment by our own developers here in this country, people can go around us in other countries which compete with us in world markets. Is that not so?

Mr. BLUM. That is right, Senator.

Senator MILLER. Thank you very much.

Could I ask you one further question?

Mr. BLUM. Certainly.

Senator MILLER. Are you familiar with what foreign countries have similar type protection systems?

Mr. BLUM. We can furnish that.

Mr. WEISS, are you familiar with what foreign countries have similar type protection systems?

Mr. WEISS. There are a number of foreign countries that have ratified the Paris Convention of 1961, which is a protection of sexually and asexually reproduced plant varieties. That is quite similar. This Paris convention does provide for official testing to determine distinctness, uniformity and stability of a variety. That is, I believe, the major difference between the European so-called breeders' rights and the bill before us.

Senator MILLER. Do you know whether Japan has such a law?

Mr. WEISS. I do not believe Japan has.

Senator MILLER. Would you care to research this a little and provide that information for the record?

Mr. BLUM. Yes, sir, we will.

(The information referred to follows:)

The countries which have ratified the Convention of Paris for the Protection of New Varieties of Plants, December, 1961, and are now members of the Council of the International Union for the Protection of New Plant Varieties are Denmark, the Federal Republic of Germany, the Netherlands, and the United Kingdom. The Convention has been signed but not yet ratified by Belgium, France, Italy, and Switzerland. Austria has a national system for protection of plant varieties.

Senator MILLER. Thank you, sir.

Senator JORDAN. Thank you.

Mr. White?

Mr. White is chairman, breeders' rights study committee, American Seed Trade Association, Minneapolis, Minn.

STATEMENT OF ALLENBY L. WHITE, CHAIRMAN, BREEDERS' RIGHTS STUDY COMMITTEE, AMERICAN SEED TRADE ASSOCIATION, MINNEAPOLIS, MINN.

Mr. WHITE. Mr. Chairman, my name is Allenby L. White. I am chairman of the American Seed Trade Association's breeders' rights study committee and vice president, research and market development, for Northrup, King & Co., a company headquartered in Minneapolis, Minn., selling, developing, and producing many kinds of seed.

I have with me here today Mr. John I. Sutherland, executive vice president, American Seed Trade Association, and Mr. Dale Porter, legal counsel for the Pioneer Hybrid Corn Co.

We have prepared a complete testimony in support of this bill which we would like to offer for the record, with your approval.

Senator JORDAN. It will be carried in the record in its entirety.

(The prepared statement of Mr. White is as follows:)

I—SUPPORT

My name is Allenby L. White. I am Chairman of the American Seed Trade Association's Breeders' Rights Study Committee and Vice President, Research and Market Development, for Northrup, King & Company, a company headquartered in Minneapolis, Minnesota, selling, developing and producing many kinds of seed.

The American Seed Trade Association represents over 450 seed companies, 41 state and regional associations, and we believe the seed industry at large. The Association headquarters are located in the Executive Building, 1030 15th Street N.W., Washington, D.C.

The American Seed Trade Association strongly supports S. 3070, and related bills, sometimes called the "Plant Variety Protection Act," because of a profound belief that this legislation will benefit not only plant breeders but will bestow even greater benefits on American Agriculture and the community at large. In the following testimony, we shall attempt to provide the substance for this belief.

II—THE BASIC PRINCIPLES OF LEGAL PROTECTION

Article 1, Section 8, of the United States Constitution says:

"The Congress shall have the power . . . to promote the progress of science and useful arts, by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries."

Congress acted on this constitutional mandate by enacting some patent legislation as early as 1790. Thus, it may be observed, the United States patent system is an institution nearly as old as the Nation itself.

Much of the vigor and enterprise of the United States, both culturally and industrially speaking, can be attributed to its patent system. Abraham Lincoln once said that the American patent system, "supplied the fuel of incentive to the fires of genius," thereby paying tribute to the innovators and creators of our Nation.

On May 23, 1930, the Townsend-Purnell Plant Patent Act was enacted into law. This legislation provided, for the first time in our history the discoverer or originator of certain asexually-reproduced plant varieties with the right to legal protection for his developments. Senate Report No. 315, dated April 2, 1930, cited the reasons for this legislation and stated, in part:

"The purpose of the bill is to afford agriculture, so far as practicable, the same opportunity to participate in the benefits of the patent system as has been given industry, and thus assist in placing agriculture on a basis of economic equality with industry—"

"Today the plant breeder has no adequate financial incentives to enter upon his work. A new variety, once it has left the hands of the breeder, may be reproduced in unlimited quantity by all. The originator's only hope of financial reimbursement is through high prices for the comparatively few reproductions that he may dispose of during the first two or three years . . . Today, plant breeding and research is dependent, in large part, upon government funds to government experiment stations, or to the limited endeavors of the amateur breeder. It is hoped this bill will afford a sound basis for investing capital in plant breeding and, consequently, stimulate development through private funds."

Unhappily, this excellent law, even with its later amendment, provided legal protection only for certain asexually-reproduced species. It left without legal protection varieties of those species which comprise the bulk of the Nation's total crop.

In Europe, meanwhile, certain nations, increasingly concerned with their agricultural productivity, began to perceive that one important solution to this basic national problem lay in spurring their plant breeding community to produce better, higher-yielding varieties, and enacted laws providing plant breeders with legal protection.

A number of European countries, having seen the benefits of such a law, came together to develop a convention which, when ratified by a majority of the cooperating countries, would come into force and provide the framework upon which national "breeders' rights" laws would be based. This convention is now in force and most western European nations now either have new laws offering legal protection to plant breeders, or have such laws in late stages of development.

But, in the United States today, plant breeders still have no law protecting their innovations except as to the limited area of asexual (non-sexual) reproduction. If today's situation continues to persist, the American breeder and American agriculture will face an ever-growing disadvantage, not only in the international marketing of seed, but in the food, feed and fiber crops produced from it, since the productivity of such crops is determined in so small measure by the yield potential built into the varieties from which such crops are produced.

That the principle of legal protection for plant varieties is a sound one seems beyond dispute. This belief, in the principle of providing plant breeders with protection, seems amply supported by the United States Constitution; by the foresight of Congress, as elucidated in the quoted Senate Report No. 315, and by the fact that the western European nations, and other nations, have accepted this principle to the extent of entering into regional conventions and enacting national laws codifying the basic principle.

III—THE BENEFITS OF LEGAL PROTECTION FOR PLANT VARIETIES

The benefits derived through provision of legal protection for plant varieties have been amply demonstrated in western Europe where such protection has led to a great flowering of plant breeding, with the concomitant benefits of a more productive national agriculture and improved agricultural export. In the United States, where legal protection for plant varieties is not now available, we believe all of the following benefits may be expected from providing such protection:

1. It will greatly stimulate private plant breeding.
2. It will allow our government agricultural experiment stations to increase their efforts on needed basic research.
3. It would permit public expenditures for applied plant breeding to be deviated to important areas which industry may not pursue.
4. It will give farmers and gardeners more choice, and varieties which are better in yield or in quality, etc.
5. It will make American agricultural products more competitive in world markets.
6. Consumers and other purchasers of crops will benefit: in some instances by improved quality, in others by aiding the production needed to serve them.

An explanatory word or two on these foreseen benefits may be in order.

The new law will definitely stimulate plant breeding. Experience in England provides a good case history. Prior to the enactment of its Plant Varieties and Seeds Act 1964, little plant breeding was done in England by private companies, and not much was done by government agencies. Since the new law came into effect, there has been a great upsurge of plant breeding, and a once moribund seed industry is now showing signs of great new vitality.

And we can, to some extent, draw on our own experience in reaching the conclusion that legal protection will stimulate private plant breeding. Prior to the Plant Patent Act of 1930, there was very little private plant breeding done aside from that performed by a handful of amateurs or hobbyists. Since then, some 2,700 plant patents have been issued, largely to commercial breeders. It is difficult to estimate the total value of the fruits, nuts, cut flowers and ornamentals deriving from patented varieties, but some insight into the value of this commerce may be obtained by considering the case of roses. It is estimated that 50,000,000 rose plants, over 80% of which are from patent varieties, are sold to home gardeners in the United States each year. These plants have an estimated wholesale value of \$35,000,000. Additionally, there are some 20,000,000 rose plants grown in U.S. greenhouses. More than 90% of these are of patented varieties and the flowers produced from them are estimated to have a commercial value in excess of \$50,000,000.

The availability of legal protection for plant varieties will allow our government experiment stations to concentrate more of their efforts on greatly needed basic research. Plant breeding is becoming an ever more sophisticated science. If we are to continue to keep pace with developments elsewhere, our scientific institutions must constantly search out the new genetic techniques and properties which can be incorporated into the overall American plant breeding effort.

Private seedsmen cannot afford to do this kind of research. The public institutions are well equipped for such investigations.

The availability of protection for plant breeders should increase the benefits from public expenditures where they continue to be used for applied plant breeding. Many public institutions today spend sizeable sums of money on the development of finished plant varieties. Once released, these experiment station varieties are made available to all. Advertising and marketing such varieties is often not attractive. Within a short time, many of those which are marketed disappear from the market because those who handle them learn they cannot make the kind of return on their investment needed to allow them to continually handle such varieties. This is a phenomenon well-known to agricultural experiment station directors, and it is one reason, we believe, that these officials now look favorably on protection for plant varieties.

Legal protection for plant varieties will give American farmers the choice of more and better varieties. As pointed out, many experiment station varieties are short-lived on the market. This knowledge has tended to discourage public institutions from applied plant breeding. The result is that farmers today are not being offered enough choices and not enough work is being done on some of our most important crops. Soybeans, one of our biggest crops, provides a good example of a crop that could and would be more productive as a result of the more and better varieties which would be made available as a result of legal protection for plant varieties. Other major U.S. crops, like cotton, wheat, barley, oats and rice for example, now largely ignored by the private researchers, would almost certainly benefit greatly from the impact of a competitive, private plant breeding effort.

Legal protection for plant varieties should make U.S. agricultural products more competitive in world markets. Higher crop yields help reduce per unit costs of the finished product, be it meat, milk, food or fiber. Clear examples of this may be seen by noting the dramatic increase in yields of just two crops—corn and sorghum—which, as a result of their adaptation to hybridization, have been the object of keen competition among private plant breeders of this country. One hesitates to speculate what our position in the world market of these two crops might be if our breeders had not found it worth their while to solve the genetic riddles involved in unlocking greater yields of these important feed grains.

Although the foregoing statement has emphasized benefits to farmers, it is important to realize that all consumers and intermediate purchasers of farm products share in these benefits. To illustrate this we need only ask what would now be the cost to the consumer of almost any farm-derived product, if a farmer could only produce as much per acre as he did in 1930. In addition, it is primarily the consumer who benefits from those new varieties which provide the consumer with improved quality.

IV—ACTIVITIES IN CONNECTION WITH LEGAL PROTECTION FOR PLANT VARIETIES

The American Seed Trade Association has long been aware of the lack of legal protection for sexually-reproduced plant varieties, alive to the resulting inattention to the breeding of such varieties aside from those which could have biological protection because hybridized, and concerned about the continuing consequences both to the seed industry and to American agriculture. In 1961 the Association appointed a Breeders' Rights Study Committee to investigate ways and means of providing legal protection for plant varieties.

The Committee explored several means of accomplishing its objective. At one time it was decided that of all the alternatives considered, a simple amendment to the Plant Patent Act would be a practical solution.

The proposed amendment to the act called for insertion of the words, "or sexually" in Sections 161 and 163 of the act, the net effect of which would be to permit the patenting of sexually-reproduced, as well as asexually-reproduced, varieties. This amendment failed in the standing Subcommittee on Patents, Trademarks and Copyrights of the Committee of the Judiciary, but in referring to this proposed amendment, Senator McClellan, Chairman, said in part:

"The Subcommittee has received testimony both supporting and opposing an extension of protection to include sexually-reproduced varieties of plants. I have been impressed by the efforts of those who are seeking to develop new varieties of plants. These research activities should be encouraged by the granting of appropriate incentives. A significant difference of opinion exists as to the feasibility of accomplishing this objective through the plant patent statute.

I understand that representatives of the American Seed Trade Association, the National Cotton Council, and other interested parties, plan to explore this subject further during the next few months with representatives of the Department of Agriculture and Patent Office. I hope that these conversations result in agreement as to a feasible course of action as to provide protection either within the patent system or by some other appropriate mechanism."

Attempts to reach agreement on the proposed amendment to the Plant Patent Act failed, and faults in that approach were recognized, so the American Seed Trade Association next undertook to develop a statute more carefully suited for plant variety protection. This effort resulted in a prototype of the legislation we are endorsing here today.

During the course of its attempts to develop a method for protecting plant varieties, the American Seed Trade Association has conscientiously consulted public and private bodies with any interest in this problem. Among those groups consulted are the United States Department of Agriculture, Agricultural Research Service and Consumer and Marketing Service; the Agricultural Experiment Station Directors, Experiment Station Committee on Policy; the Association of Seed Control Officials; the Association of Official Seed Certifying Agencies; the National Cotton Council; and other such organizations. Valuable counsel was received from all, the result of which was a number of new draftings all designed to make the best possible use of the new provisions or amendments urged upon us by our conferees.

Since the consultations referred to above had been held individually with the public groups just referred to, and since, therefore, there remained the possibility that changes suggested by one group might not be acceptable to another, it was decided to convene a conference during which experts of all the cited public agencies or organizations would have an opportunity, after agency-study of the then latest draft, to participate in such a meeting with the necessary directives and authority.

Accordingly, on March 25-26, 1969, a meeting was convened in Washington, D.C. which included representation from:

- United States Department of Agriculture, Agricultural Research Service.
- United States Department of Agriculture, Consumer and Marketing Service.
- State Agricultural Experiment Station Directors.
- Association of Seed Control Officials.
- Association of Official Seed Certifying Agencies.
- The National Council of Commercial Plant Breeders.
- The American Seed Trade Association.

During the course of this meeting, the proposed legislation was examined on a point-by-point basis and many significant amendments were made, most of which, in one way or another, were concerned with the public interest, including especially that of the farmer.

But, also raised during this meeting was the question of whether there should not be another method of protecting plant varieties. The Seed Certification group and the Agricultural Experiment Station Directors had both been directed by their constituents to support the principle of plant variety protection as laid down in the proposed act, but to also request that seed certification provide still another, and separate, means of protecting plant varieties. This directive raised the basic question of the wisdom of having two separate plant variety protection laws and a corollary question of legal prosecution of the right granted since, in one instance, the injured party would rely on civil court action for redress and, in the other, violations would be criminal acts, the prosecution of which would be conducted by the Federal Government.

It was decided there need not be two separate laws but, rather, that both forms of protection could be provided under the proposed Plant Variety Protection Act with an appropriate amendment to the Federal Seed Act. This solution, it was believed by the group, would satisfy the desires expressed by both industry and public organizations; would simplify the whole question of plant variety protection, and would give the individual applicant the option of obtaining either kind of protection through one basic source.

Very briefly, Mr. Chairman, that is a summary of the actions the American Seed Trade Association has taken to consult with public bodies; to assure that the public interest would be served by the proposed legislation, and to shape the legislation we are here today to endorse. We shall not attempt to describe for you the countless informal meetings we held with interested state and federal workers; the specific ways in which these discussions have modified both the

word and thrust of the proposed legislation, or the splendid spirit of cooperation which has characterized all these meetings. We sincerely believe that the product of these many discussions—the proposed Plant Variety Protection Act—represents a real testimonial to the efficacy of sincere government-industry dialogue.

V—COMMENTARY ON SALIENT PROVISIONS OF THE PLANT VARIETY PROTECTION ACT

The Plant Variety Protection Act is designed to provide legal protection for sexually-reproduced plant varieties, a class for which legal protection has heretofore been unavailable.

In the commentary which follows, some salient features of the Act are examined in the light of their meaning and purpose.

CHAPTER I, SECTION 1. ESTABLISHMENT

Section 1 establishes a bureau, to be known as the Plant Variety Protection Office, in the Department of Agriculture.

Those participating in the development of the proposed legislation examined at great length whether this bureau should be more properly in the Department of Commerce. Not without some remaining disagreement, it was concluded it should be placed in the Department of Agriculture primarily on the basis that the expertise found in this department would in any case be needed to determine the eligibility of candidate varieties.

CHAPTER I, SECTION 3. OFFICERS AND EMPLOYEES

Section 3 calls for the appointment of a Commissioner, an Assistant Commissioner and an appropriate staff. The Commissioner would be appointed by the Secretary of Agriculture. The Secretary is authorized to fix the compensation of each staff member at not in excess of the maximum scheduled rate provided for positions in Level V of Section 5316 of Title 5, United States Code.

This section was included as presumably necessary for establishing a suitable office for administering the Act. However, in conferring with technical experts of the Department of Agriculture we have learned that there is a belief that the organization of the Plant Variety Protection Office should be left more completely to the Secretary of Agriculture. This Association has no objection to deleting Section 3. It is observed that Section 1 contemplates an office devoted solely to administration of this Act, and that is deemed important for public confidence in the Office, lest there could appear to be some conflict of interest.

CHAPTER I, SECTION 7. PLANT VARIETY PROTECTION BOARD

A Plant Variety Protection Board will be established under the Act which will be made up of individuals competent to review applications with approximately one half its members being drawn from the government of public sector, which could include a seed-consuming farmer representative, and the other half from the private or seed industry sector, which could include a seed-producer farmer representative, all serving without compensation. The Board will be advisory in nature. Among its most important functions, it will advise the Commissioner on:

1. Adoption of the rules and regulations.
2. Appeals from the findings of the examiner, and
3. Whether and how a protected variety should be declared open to the public.

The make-up of the Plant Variety Protection Board will require careful study. In order to provide an insight into its thinking and, possibly, to serve as later guidelines, the American Seed Trade Association offers the following proposals:

1. The Board shall consist of 9 members: 4 from the seed industry, 4 from the public sector and the Commissioner who shall serve as Chairman.
2. The members shall be competent in the field of plant breeding and shall, insofar as possible, be selected in such a way as to collectively embrace knowledge of breeding of the overall array of species likely to be presented for Plant Variety Protection.
3. In cases where the Board questions its competence to fairly adjudge an appeal, the Board may elect to empower additional voting members, but only in the ratio of its industry-government make-up.
4. Since the Board is advisory, and its findings are therefore not binding on the Commissioner, the Commissioner shall neither vote nor inveigle, but, rather, shall assume the role of a hearing officer.

CHAPTER 3, SECTION 31. PLANT VARIETY PROTECTION ACT

The proposed basic fee for plant variety protection would be \$100 per application. This fee would, however, be increased by the cost of appeals, for extra copies of certificates, late filing and in several other ways, all of which could mean the average income per application would be close to \$175.

The American Seed Trade Association does not oppose the concept of establishing a schedule of fees, even though substantially higher than those proposed, which would place this agency on essentially the same footing as the U.S. Patent Office with regard to the relationship between income and expenses. We understand the Patent Office covers some 60% of its expenses with its income. It is questionable that plant breeders should assume a greater responsibility than this, however, since, because there are fewer plant breeders than industrial inventors, even a 60:40 ratio would result in a far higher cost per application than would be true of those for industrial patents or for asexual plant patents. And, in this connection, we feel obliged to point out that the higher fees called for in meeting the U.S. Patent Office ratio of expense to income tends to favor financially stronger breeders and discourage the small or amateur breeder or the breeding of crop varieties for which the sales potential may be small but the need critical.

In conference with government technical experts we find there is a view that the fees set are too low and should be left to the Secretary of Agriculture. The Association has no objection to this. The consideration of public interest previously mentioned can be considered by him.

CHAPTER 4, SECTION 42. RIGHT TO PLANT VARIETY PROTECTION; PLANT VARIETIES PROTECTABLE

This section states that any sexually reproduced plant may be protected (but calls attention to Section 45 which excludes fungi, bacteria and hybrids) unless the variety was found not novel. Specific examples of non-novelty are covered by sub-sections (a), (b), (c) and (d) of this section.

CHAPTER 4, SECTION 43. RECIPROCITY LIMITS

The essence of this section is that the protection afforded by this Act will be available to foreign breeders but (in the absence of treaty) only to the extent their respective countries offer legal protection to American plant breeders. "Breeders' Rights" laws of the different foreign countries contain certain exclusions with regard to species and certain benefits available only to "convention countries". It is the intention of the authors of this bill that these same exclusions would be applied to foreign applicants with the eventual hope that, in time, the reciprocity limits would be broadened or, hopefully, eliminated.

CHAPTER 4, SECTION 44. PUBLIC INTEREST IN WIDE USAGE

This section gives the Secretary the right to declare a protected variety open to public usage, for a period of two years, when he determines that such action is "necessary in order to insure an adequate supply of fiber, food or feed in this country and that the proprietor is not supplying the public needs at a price which may reasonably be deemed fair."

CHAPTER 5, SECTION 52. CONTENT OF APPLICATION

Section 52 lays down the basic provisions for the content of the application including the name of the variety and its description.

And, of great importance, this section and Section 81(d) require that the applicant deposit a viable sample of the basic seed necessary for the repropagation of the variety in a public repository. The basic purpose of this provision is to insure that the variety will continue to be available to the public even when it is no longer protected and whether or not the former proprietor continues to produce it.

CHAPTER 5, SECTION 56. CONFIDENTIAL STATUS OF APPLICATIONS

The contents of applications shall be kept in confidence by the Plant Variety Protection Office and by others who have access to such applications with certain noted exceptions. The Commissioner shall, however, be empowered to publish the kind and variety name stated in applications. The underlying purpose of this is to notify other potential applicants that certain names are thenceforth unavailable for their varieties.

CHAPTER 6, SECTION 61. EXAMINATION OF APPLICATION

This section provides for examination of applications, and issuing of a notice of allowance of plant variety protection. A question has been raised of the possibility of conflict with an application for plant patent. Although this possibility may be largely theoretical, this Association has no objection to an appropriate amendment. There could be an insertion after the comma in line 18 of page 22 reading, "and subject to conferring with the Patent Office as to possible conflict with an application filed by another person for a plant patent on the same variety." A related suggestion is mentioned in connection with Section 92.

CHAPTER 6, SECTION 62. NOTICE OF REFUSAL; RECONSIDERATION

This section provides for the refusal of applications; outlines the Commissioner's responsibility in such cases, and states the time applicant has for his response. The provision for an extra three months, by paying a small fee, primarily saves the Office from numerous time consuming petitions which would otherwise result. There are other provisions under which the Commissioner could avoid prolongation of prosecution.

CHAPTER 6, SECTION 63. INITIAL APPEAL

Upon refusal by the examiner the applicant may appeal to the Commissioner who, in turn, must seek the advice of the Plant Variety Protection Board on all appeals, before deciding the appeal.

CHAPTER 7, SECTION 71. APPEALS

This provides the applicant whose appeal has been rejected within the Plant Variety Protection Office to make further appeal under the Federal Rules of Appellate Procedure. The Court of Customs and Patent Appeals, without limitation to that court, is given jurisdiction.

CHAPTER 7, SECTION 72. CIVIL ACTION AGAINST COMMISSIONER

The applicant dissatisfied with the decision of the Commissioner under Sections 63 or 91 of the Act may, as an alternative to appeal, have remedy against the Commissioner in the U.S. District Court for the District of Columbia. This court may upon review adjudge that the applicant is entitled to a certificate of plant variety protection.

CHAPTER 7, SECTION 73. APPEAL ON CIVIL ACTION IN CONTESTED CASES

This section further provides the applicant with the right to civil action against another party in cases where the Commissioner adjudges two applications from two breeders are based on the same variety.

CHAPTER 8, SECTION 83. CONTENTS AND TERM OF PLANT VARIETY PROTECTION

This section describes the nature or content of the two forms of legal protection offered to applicant. The certificate of plant variety protection excludes others from selling the variety, or offering it for sale, or reproducing it, or importing it, or exporting it, or using it in producing a hybrid or different variety except as otherwise provided in the Act. The certificate conveys a *right* to the proprietor, which right he must ordinarily defend through appropriate civil action.

Section 83 also offers protection of the variety through certification and provides, in the United States, seed of the variety shall be sold only by variety name as a class of certified seed and, further, shall conform to the number of generations designated by the proprietor. This form of protection may be had in addition to that provided by the certificate of plant variety protection but not in lieu of it. As stated elsewhere, under interstate infringements on the protection offered by this certification, provisions would make available prosecution under the Federal Seed Act. The term of protection presently provided by the Act is seventeen years from the date of issue of the certificate regardless of kind or class of plant variety.

Finally, and in the public interest, this section provides that the proprietors must maintain a supply of viable seed in a public repository to assure the continued availability of the variety in case of abandonment by the proprietor or to serve as a means of making the variety publicly available upon the expiration of the proprietor's legal protection.

CHAPTER 9. SECTION 91. RE-EXAMINATION AFTER ISSUE

Section 91 provides that within five years after a certificate issues, anyone may submit to the Commissioner facts showing that the certificate should not have been issued. This is to minimize expensive litigation and to reduce the danger that invalid certificates would stand. Any danger of abuse or hardship to proprietors is minimized by repeated use of the word "may" which gives the Commissioner full discretion as to re-examination. Section (c), in providing that the Commissioner may permit the submitter of facts to offer testimony in proof of them, represent no intention that the submitter of facts will remain a party beyond the stage of providing the necessary proof.

CHAPTER 9, SECTION 92. PRIORITY CONTESTS

Section 92 provides for priority contests, although such contests are expected to be extremely rare. The Commissioner is given the widest possible discretion as to how such conflict will be handled, so that he can choose the best possible method according to varying circumstances, and may profit by experience.

Because the Association has encountered some concern with the theoretical possibility of conflict with a plant patent application, the following addition to Section 92 is offered:

(c) In case of a priority conflict between an application under this Act, certified or not, and an adversely owned plant patent for the same variety or an application therefor, the statutes governing each shall govern it irrespective of the other. However, no protection shall be available merely for determining that a variety already reproduced by another by one of the two ways (sexually or asexually) can be reproduced the other way. In the event of such conflict, if there should be valid protection under both statutes, each protection shall be confined to its own kind of reproduction.

CHAPTER 10, SECTION 102. OWNERSHIP DURING TESTING

The final evaluation of certain yield, quantity and processing characteristics of a new variety often requires production of the variety not under the direct control of the breeders. This section is intended to provide for the evaluation of the new variety, under notice, without jeopardizing the rights of ownership of the variety. This provision protects the breeder from the unscrupulous individual who may obtain seed during testing and provides that the rights of the lawful owner will not be lost.

The rights of a breeder who may be confronted with loss of a variety in these testing phases, and a dishonest attempt to protect this variety, is further protected by the five year period during which an issued certificate may be re-examined.

CHAPTER 11, SECTION 111. INFRINGEMENT OF PLANT VARIETY PROTECTION

Section 111, defines infringement quite broadly, but is all subject to the opening words "Except as otherwise provided." This refers especially to important exemptions found in Sections 112 to 116.

CHAPTER 11, SECTION 112. RIGHT TO SAVE SEED

It is not the intent of this legislation to prevent a farmer from saving seed for growing a following crop. This section assures farmers that right. He cannot, however, as brought out in Section 111, sell seed from his production or use it in producing (as distinguished from developing) a hybrid or different variety, without the authority of the owner of the variety.

CHAPTER 11, SECTION 115. RESEARCH EXEMPTION

Since the philosophy of the bill is, in part, to assure the farmers of a continuous course of improved varieties, it is not the intent of the bill to prevent the use of the germ plasm of a protected variety for plant breeding or other bona fide research. This section assures the research worker the privilege of transferring genetic characteristics from a protected variety without being held responsible for infringement of the protection provided the original breeder.

CHAPTER 12, SECTIONS 121 TO 126

Section 121 provides the essential remedy by civil action in case of infringement; and the following sections are mainly necessary collateral provisions for defenses, in junctions, damages, recovery of attorneys' fees in exceptional cases (such as lack of good faith), and a "statute of limitations."

CHAPTER 12, SECTIONS 127 AND 128. FALSE MARKING; LIMITATION ON DAMAGES; MARKING AND NOTICE

Section 127, in addition to usual provisions for using the notation "U.S. Protected-Variety," encourages distribution of a valuable new variety before a certificate has (been) issued by permitting honest use of the words "Propagation Prohibited." Various safeguards are found in Section 128.

CHAPTER 13, SECTIONS 131 AND 132. INTENT, SEVERABILITY

Sections 131 and 132 provide maximum certainty of constitutionality whether under the "authors and inventors" clause or the "commerce" clause.

CHAPTER 14, SECTION 141. EFFECTIVE DATE

By providing that the Act takes effect upon enactment, unnecessary delay in achieving its benefits for agriculture and the public is avoided.

CHAPTER 14, SECTION 142. AMENDMENT OF FEDERAL SEED ACT

This is the language necessary to implement the optional provision providing for the limitation of sale of seed by variety name only as a class of certified seed as provided in Section 83. With the enactment of the Plant Variety Protection Bill, Section 142 will become Title V of the Federal Seed Act.

CHAPTER 14, SECTION 143. AMENDMENT OF JUDICIAL CODE

This section merely coordinates the Judicial Code provisions for the United States Court of Customs and Patent Appeals with appeal provisions of this Act.

VI—SOME OPPOSITIONAL VIEWS AND SUMMARY

This Committee will almost certainly be hearing some views opposing the proposed legislation in whole or part. We should like to comment briefly on some of the more common of these objections.

First, the objection: "The bill would create a breeders monopoly and result in higher prices for seed."

It must be observed that, today, breeders have two forms of varietal protection available to them: the Patent Act offering legal protection for a sexually-produced plant varieties and, secondly, biologic protection arising from the utilization of hybridizing techniques.

Most rose varieties offered today are patented. These rose plants are normally reproduced not only by the developer but by others. And they are sold by sales outlets of all kinds including discount stores of one kind or another. The breeder cannot and does not determine the price, the natural result of which, of course, is that prices for a given variety vary widely. The purchaser may choose the price he is willing to pay. An examination of the rose industry will disclose as a result, and despite its ability to legally protect its product, the rose industry is a highly competitive industry no more profitable than most and less profitable than many.

The hybrid corn industry deals in a biologically protected product. A survey of 1970 prices for hybrid seed corn of the same genetic class and kernel grade, shows a difference of about 17% between the published high and low prices of some of the major companies. If other inducements, such as discounts, prizes and incentives, are considered, the spread becomes even greater. And, it is not uncommon to see price differences of up to 50%.

On the basis of these examples and others which could be enumerated, we in the American Seed Trade Association see no justification for the fears that the enactment of this bill into law would result in either a breeder monopoly or in higher farmer prices.

Second, the objection: "The bill would interfere with the free flow of germ plasm."

The concern here seems to stem from the belief that public breeders would retain their valuable breeding materials in the hope of financial gain and that this would slow the overall pace of varietal development. Whether this happens or not will be determined by the policy of the individual experiment station. We do not believe the enactment of this bill into law would materially alter present experiment station policy. We base this conviction largely on the basis of the fact that it has not happened in the case of hybrid corn and hybrid sorghum, for example, even though with these and other hybrid crops, the public breeder has a biological protection mechanism available to him which, by any evaluation, must be considered as even more certain and theft-proof than legal protection.

Thirdly, one group, the Washington Wheat Commission, has expressed a concern that: "The Plant Variety Protection Act would result in the release of wheat varieties which could threaten the quality of the Northwestern wheat crop."

Representatives from the American Seed Trade Association met with the Commission and others to explain that this objection was in no way linked to the Plant Variety Protection Act. Wheat varieties will be bred for and released in this region whether or not the proposed law is enacted. We propose, that if this concern is considered a valid one, that the Washington Wheat Commission sponsor legislation in the State Legislature which would require that any new wheat variety must meet certain predetermined quality standards before sale would be permitted in that state. Such a law, obviously, would act to prevent the sale of both protected and non-protected varieties of wheat—a possibility that would not be available through the amendment of the proposed Plant Variety Protection Act.

And, finally, there has been the objection: "The Plant Variety Protection Act would not be self-financing."

In framing the proposed Act, we in the American Seed Trade Association took the view that the Act should be essentially self-financed.

In summary, we in the American Seed Trade Association believe that the enactment of the proposed Plant Variety Protection Act into law will bestow important benefits on American Agriculture among which the following are the more important:

1. It will greatly stimulate private plant breeding.
2. It will allow our government agricultural experiment stations to increase their efforts on needed basic research.
3. It would permit public expenditures for applied plant breeding to be deviated to important areas which industry may not pursue.
4. It will give farmers and gardeners more choice, and varieties which are better in yield or in quality, etc.
5. It will make American agricultural products more competitive in world markets.
6. Consumers and other purchasers of crops will benefit: in some instances by improved quality, in others by aiding the production needed to serve them.

The authority for establishing the financing provisions of this law have not been dealt with by ASTA.

Senator JORDAN. You may proceed as you wish.

Mr. WHITE. Thank you.

In addition to offering the complete testimony, I would like to make a few brief remarks on behalf of the bill.

The American Seed Trade Association represents over 450 seed companies, 41 State and regional associations, and, we believe, the seed industry at large. The association headquarters are located in the Executive Building, 1030 15th Street NW., Washington, D.C.

The American Seed Trade Association strongly supports S. 3070, and related bills, sometimes called the Plant Variety Protection Act, because of a profound belief that this legislation will benefit not only plant breeders but will bestow even greater benefits on American agriculture and the community at large. In the following testimony, we shall attempt to provide the substance for this belief—the testimony which has been submitted for inclusion in the record, but I would like to point out that the American Seed Trade Association has worked on this legislation for 10 years now, during the

course of which we have examined and considered the various forms of legal protection available to us, including those presently in force in Europe, the U.S. patent law, and our own Federal Seed Act.

In the course of our studies, we have also consulted all interested groups to make sure of the legal soundness of our proposal and to make sure that it properly reflects the interests and concerns of all, paying particular attention to the public interest. At the present time, we know of no opposition to the principle of legal protection for plant varieties.

Now, Mr. Chairman, I would like to take just a moment to say a few things about the nature of the law we are proposing.

In the brief time allotted, I cannot and do not intend to give a section-by-section review, but I would like to offer a digest in the words of a legal layman which I hope will convey the substance of our proposal.

First of all, the bill would make it possible to legally protect plant varieties that cannot be protected either under the patent law or through hybridization. These plant varieties encompass or involve the most important crops of this land.

The law would allow the plant breeder to protect his variety in a manner rather similar to that obtaining in the case of industrial patents. But there would be some important differences.

For one thing, the law would oblige the proprietor to make his product available through compulsory licensing in the case of national emergency. It would allow farmers to reproduce the product for their own use, and it would absolve people who sell the product for food or feed of any infringement.

The proposed law offers applicants two modes of protection: a right something akin to a patent right which they would defend at their own expense against infringement, and, secondly, the option of further protecting their variety through seed certification, in which case infringers would be prosecuted under the Federal Seed Act.

The law would contain many safeguards to protect the breeder, both public and private, during the developmental stages of the variety. As noted, it contains many provisions to protect the public interests and, perhaps no less important, the overall effect of its provisions is one offering an inducement to and putting a responsibility on the private plant breeder to develop and market the superior plant varieties needed to keep our agriculture both vital and competitive.

That concludes my statement, Mr. Chairman.

Senator JORDAN. Thank you very much.

Senator Miller?

Senator MILLER. I have no questions.

Senator JORDAN. I do not see anything in this bill that would be detrimental to anybody, if the farmer can use his own seeds that he uses this year to plant his own crop next year. That is customary with all farmers and has been, I presume, as long as people have been farming.

Mr. WHITE. That is true.

Senator JORDAN. Any time he is going to provide a seed for use on his own land, I think he should be protected for the use of that seed. I think it is a good bill all the way around.

Mr. WHITE. We agree, Mr. Chairman.

Thank you.

(Supplemental statement filed for the record is as follows:)

Washington, D.C., June 12, 1970.

HON. B. EVERETT JORDAN,
Chairman, Subcommittee on Agricultural Research and General Legislation, Senate
Agricultural Committee Washington, D.C.

DEAR MR. CHAIRMAN: The American Seed Trade Association wishes to request the additional statement in support of S. 3070 be included in the Hearing record of June 11, 1970:

The American Seed Trade Association respectfully offers the following refutations to the views presented by Mr. Eldrow Reeves, of the Campbell Soup Company, before the Senate Subcommittee on Agricultural Research and General Legislation.

We should like to point out, first, that the Plant Variety Protection Act is voluntary. The Campbell Soup Company, or anyone else foreseeing the evils alleged by Mr. Reeves, may avoid them by not availing themselves of the protection afforded by this law.

Mr. Reeves contends that the bill "would essentially eliminate exchange of valuable germplasm and severely curtail the development of new varieties."

The American Seed Trade Association believes this argument is refuted by two facts:

(1) This has not occurred in the case of hybrids where biological protection has been available, and, indeed, despite the availability of the protection mechanism, there has been a free flow of germplasm and information from public institutions.

(2) The endorsement of the state agricultural experiment stations carries with it the inherent conviction that this valuable exchange of genetic material and knowledge will not occur.

Mr. Reeves then contends that the Act would be difficult if not impossible to administer. He seems to suggest that varietal novelty cannot be established. In refutation of this argument we wish to point out that:

(1) The USDA Agricultural Research Service believes otherwise. This is inherent in their testimony in support of the Act;

(2) The state agricultural experiment stations believe otherwise as indicated by their supporting testimony;

(3) The fact that similar systems of legal protection have been in operation for many years in some European countries offers working proof in refutation of this argument, and finally;

(4) The Federal Seed Act, which is a truth-in-labeling law, passed by Congress August, 1939, is based upon the fact that varietal identification can be established.

Mr. Reeves then contends that cost of application and litigation would be exorbitant.

The American Seed Trade Association and others have projected the direct out-of-pocket costs connected with the administration of this Act and its membership is convinced these costs are not, or need not be, exorbitant.

Litigation costs are optional just as they are with industrial patents. The patent owner decides whether his patent is worth the cost of defending it. Long time experience indicates that industrial patent owners do not find litigation costs so great as to deter them from obtaining the protection offered by such patents and there is every reason to believe that those holding certificates of Plant Variety Protection would make a similar evaluation.

Finally, Mr. Reeves contends that the seed certification and the development of F₁ hybrids offers enough protection to encourage creativity.

This argument is refuted by the fact that:

(1) The Association of Official Seed Certifying Agencies, the agency offering the certification protection alluded to, feels strongly otherwise, and;

(2) Finally, the well-known genetic fact that many of our crops, including some of our most important, do not lend themselves to hybridization.

We appreciate the opportunity of submitting this additional statement.

Very truly yours,

JOHN I. SUTHERLAND,
Executive Vice President,
American Seed Trade Association.

Senator JORDAN. Mr. Rogers—John S. Rogers, Secretary-Treasurer,
National Council of Commercial Plant Breeders, Orange, Conn.

STATEMENT OF JOHN S. ROGERS, SECRETARY-TREASURER, NATIONAL COUNCIL OF COMMERCIAL PLANT BREEDERS, ORANGE, CONN.

Mr. ROGERS. Mr. Chairman, my name is John S. Rogers, I am speaking on behalf of the National Council of Commercial Plant Breeders, in support of S. 3070, which is a bill to provide plant variety protection.

I have served as president of this organization a number of years, and my present employment is as director of research for the Asgrow Seed Co. which has its headquarters in Orange, Conn., and whose primary purpose is development and production and distribution of field seeds for both the domestic and international markets.

We have a prepared statement which I would appreciate having included in the record.

Senator JORDAN. It will be included in its entirety.

(The prepared statement of Mr. Rogers is as follows:)

Mr. Chairman, my name is John S. Rogers. I am speaking on behalf of the National Council of Commercial Plant Breeders in support of S. 3070, which is a Bill to provide Plant Variety Protection.

I served as President of NCCPB during 1962-63, and have been the Secretary-Treasurer of this organization since that time.

My present employment is as Director of Research for the Asgrow Seed Company, which has its headquarters in Orange, Conn. Our primary business is the development, production and distribution of vegetable and agronomic seeds in both the domestic and international markets. Our company has been a member of NCCPB since its beginning and strongly supports the NCCPB's position on this legislation.

The National Council of Commercial Plant Breeders was founded in Memphis, Tennessee in 1954 to represent the interests of private American plant breeders at home and abroad, to promote cooperation and understanding between public and private plant breeders, and to encourage the development of high professional and ethical standards in American private plant breeding.

Since our beginning in 1954, we have grown to a membership of more than 40 firms, representing a major part of the private plant breeding being conducted in the United States. A recent survey shows that member firms employ over 300 professional workers, which include 100 Ph. D. scientists and an equal number of M.S. degree personnel. Over 10 million dollars is expended annually by member firms in their research programs.

Private plant breeding has enjoyed significant growth during the past two decades, particularly in crops such as corn, sorghum, alfalfa, wheat, cotton, and certain vegetable species, where technological developments giving natural protection have made recovery of research expenses and profits possible.

A most significant accomplishment of NCCPB has been to bring together into one organization most commercial plant breeding interests in the United States. Through this association of representatives working in many diverse crops, it has been possible to review common opportunities and problems and to establish common goals and ethical standards for commercial plant breeders.

A major objective since the inception of the Council has been the development of a system of voluntary plant variety protection for the private developer, or inventor, of plant improvements, in order that said developer can capitalize on his improvement if he wishes and have incentive to develop further improvements. It is the conviction of the NCCPB that developers (inventors) of plant improvements are entitled to the same kind of voluntary protection that is available to inventors in other fields.

During the past few years the major activity of NCCPB has been to work cooperatively with American Seed Trade Association to achieve legislation providing appropriate protection for individuals or firms engaged in plant breeding. In developing potential legislative approaches for plant variety protection, both NCCPB and ASTA have worked closely with appropriate personnel from the U.S. Department of Agriculture and the Land Grant Universities. Considerable time and effort have been devoted to this objective of plant variety protection

for the past few years, and there has been a conscious and continuing effort to consider all possible interest in the development of any legislation.

The present Plant Variety Protection Act, represents the culmination of these several years of effort by the various organizations and personnel involved. We sincerely believe that the proposed bill represents both an equitable and practical approach to the subject of plant variety protection, as well as providing an incentive for the developer and the opportunity for public benefit.

I will not go into detail on the various sections of the Bill, but I would like to make three specific statements which I believe provide the primary basis for justification of this particular legislation:

1. Developers of plant improvements are entitled to the type of voluntary protection that is now available to inventors in other fields. In this legislation, what we are asking for basically is the right of ownership to the product developed by the plant breeder. Considerable investment in time and money is required for the development of varieties, and it appears only equitable that the organization or individual developing the variety should be entitled to the rights of ownership. The present Bill provides this right to the developer, or owner.

2. Through plant variety protection, which permits ownership of the variety by the developing firm or organization, considerable stimulus should be provided for investment in further plant breeding efforts. Significant investment is now made in both the private and public area for plant breeding, and the contributions from these research efforts have truly been outstanding in the terms of new and improved varieties.

Progress in the hybrid crops such as corn, sorghum, onion, cucumber, and cabbage has been particularly significant where the technological developments permit recovery of research expenses and the possibility of profits. The degree of private investment in corn and sorghum research during the past few decades is ample testimony to the fact that considerable investment will be made where (due to some form of protection) profitable opportunities exist in plant breeding. With the enactment of a Plant Variety Protection Act, we can expect additional private investment in plant breeding programs for all important crops.

3. Significant public benefits will result from the enactment of a plant Variety Protection Act which stimulates development of new and improved varieties. Technically speaking, there is ample evidence that significant improvements can be made in any crop species where adequate investments are made for plant variety improvement. The main restriction to date has been the amount of investment being made in the field of plant breeding, whether private or public.

A stimulus to private investment in plant breeding through a Plant Variety Protection Act is certain to result in the development of improved varieties in many of our important crops. For example, crops such as soybeans, wheat, cotton, rice, and many others would represent greatly improved opportunities for private investment with an adequate Plant Variety Protection Act.

We are presently witnessing a dramatic breakthrough in plant breeding in the "Green Revolution" taking place in many of the developing nations of the world. This progress has been primarily possible through the development of improved cereal varieties which are much more productive. The development of better yielding varieties of all food and feed crops is especially significant at this period of history when population in many areas is surpassing our ability to produce food.

I would like to close my statement on a personal note. It has been my privilege to be engaged in either plant breeding or plant breeding administration for more than 30 years. During this time I have spent approximately one-half of my career in the public service, while the remainder, and more recent years, have been devoted to private plant breeding. On the basis of my experience, I would like to emphasize that plant breeding does provide a rewarding and meaningful career, and I have indeed appreciated the opportunity of working in this field for such a period of years.

As a result of this experience, it is certainly my personal conviction that plant breeding has made and can continue to make significant contributions both domestically and internationally. I also firmly believe that enactment of the Plant Variety Protection Act will encourage investment in and, therefore, accelerate progress in the field of plant breeding.

We have the opportunity, therefore, through enactment of this legislation to ensure the development of improved varieties which will, in turn, contribute to the public welfare through their usage.

Mr. ROGERS. Thank you, sir. I shall comment very briefly.

Senator JORDAN. You may proceed.

Mr. ROGERS. Just a word about the National Council of Commercial Plant Breeders.

This is an organization that was founded in 1954 to represent the interests of private plant breeders in the United States. We have grown now to having over 40 members who, we believe, represent the major part of the private plant breeding activities that are conducted in the United States.

So, we believe we do speak for this group.

During the last several years, our primary activity has been to work cooperatively with the American Seed Trade Association toward the achievement of some type of legislation that would provide plant variety protection for the individual or firm developing new varieties. This bill which is being considered represents the culmination of these several years of activity, and we believe provides an equitable and practical approach to this matter of plant variety protection.

I would like to just mention three objectives which we believe will be achieved by this particular bill and which we believe are in the interests of all.

The first is that the bill will provide protection to the individual or firm developing a new variety. That is the basis of it.

Secondly, we are confident that a considerable investment will be stimulated in the field of plant breeding as a result of the incentive offered through the plant variety protection system.

And, third, we are also quite confident that as a result of this additional investment in plant breeding, new and improved varieties will be developed which will be a benefit to the producer of crops and certainly also, then, to the general public, because they have the opportunity to benefit from these improved products.

I believe this completes our testimony.

And I thank you very much, sir.

Senator JORDAN. Of course, it is a known fact that if a farmer can raise twice as much on an acre of ground with a new seed as he did with the old seed the public will benefit, because he can sell it cheaper as he produces it cheaper. The ultimate consumer is going to benefit greatly from this act, as I see it, along with the protection it will give to the man who produces the new seed. It does not make much sense for a man to work several years—because sometimes it takes that long to develop a new seed or variety—and then have somebody else take it next year and plant the new seed. Now they can do that. This bill will protect the developer of that new seed.

Mr. ROGERS. Yes, sir.

Thank you very much.

Senator JORDAN. Thank you very much.

The next witness is Mr. McKenna, senior vice president, Ferry-Morse Seed Co.

**STATEMENT OF RICHARD W. McKENNA, SENIOR VICE PRESIDENT,
FERRY-MORSE SEED CO., MOUNT VIEW, CALIF.**

Mr. McKENNA. Mr. Chairman, my name is Richard W. McKenna. I am the senior vice president of Ferry-Morse Seed Co., a wholly-owned subsidiary of Purex Corp., Ltd., a California corporation.

I have prepared a statement concerning this legislation. However, in the interest of your time this morning, and with your permission, I would like to ask to have it incorporated in the record.

Senator JORDAN. It will be carried in the record in its entirety.

You may discuss any point of it you like, briefly.

Mr. McKENNA. Thank you.

(The prepared statement of Mr. McKenna is as follows:)

Mr. Chairman and committee members, my name is Richard W. McKenna. I am the Senior Vice President of Ferry-Morse Seed Company, a wholly owned subsidiary of Purex Corporation, Ltd., a California Corporation.

Our Company develops, produces and merchandises vegetable, field and flower seeds for national and international distribution. In our research, we are primarily concerned in increasing productivity and quality of product.

I am interested in the passage of a Plant Protection Act that provides for voluntary participation by the originator. I refer in particular to S. 3070.

Speaking on behalf of the American Seed Trade Association, and also speaking for our Company, I strongly support the Plant Variety Protection Act which is being recommended by the membership of the Association and many other agricultural groups. It is my considered opinion that developers of plants requiring sexual reproduction for maintenance should have the encouragement of the opportunity from their efforts in a manner similar to that granted to developers of products covered under the Patent Act. There are at the present time many important areas that we cannot justify expenditures in Research and Development because of lack of legal protection. It is our intention to materially increase expenditures in Research, provided protection is made available to the seed breeder.

The governments of several European countries, in particular West Germany, Holland, Austria, Denmark, England and France, have already seen the need for and have made available in their respective countries a form of plant variety protection to developers of sexually reproduced plants.

It is my opinion that S. 3070 would provide an effective and equitable system. It would be voluntary and protection would be based on novelty, distinctness, uniformity, and stability of the variety. It places responsibility for the defense of the protection granted on the owner of the rights, at his expense. The system would be available to any originator or developer of a new sexually reproduced plant variety. It would not interfere with the free-flow of information and breeding materials among plant scientists and it would allow any farmer the right to reproduce seed for his own planting.

We are just now beginning in agricultural research to unlock and understand some of the mysteries of plant life. We must exploit new discoveries as rapidly as they become known in order to establish unique and more stable germ plasm in the form of superior and novel varieties.

Applied agricultural research must be encouraged and expanded, particularly in the private sector, if the economy of our country is to reach its full potential. There is no question in my mind but that a Plant Protection Act will stimulate greatly increased activity and investment by business in the research needed for better food products. Such activities by private enterprise will enable government to apply its agricultural research expenditures to the best possible use with concentration in much needed basic research.

I am confident that a Plant Protection Act will encourage a more open exchange of germ plasm between public and private researchers. Certainly, there must be a close and unselfish rapport between all scientists if we are to succeed in reaching mutual goals which are of benefit to the public.

Your favorable action on S. 3070 will be greatly appreciated.

Mr. Chairman, I do appreciate having the opportunity to present my views on this important matter.

Mr. McKENNA. Well, speaking as the president of the American Seed Trade Association, and also speaking for our company, I strongly support the Plant Variety Protection Act, which is being recommended by the membership of the association and many other agriculture groups.

In my opinion, S. 3070 would provide an effective and equitable system. It would be voluntary, and protection would be based on novelty, distinctness, uniformity, and stability of the variety.

It further places responsibility for the defense of the protection granted on the owner of the rights and at his expense.

The system would be available to any originator or developer of a new sexually reproduced plant variety.

It certainly would not interfere with the free flow of information and breeding materials among plant scientists and, furthermore, it would allow any farmer to reproduce seed for his own planting.

I would certainly be—and am—in support of this legislation, and your favorable action would be gratefully appreciated.

Senator JORDAN. Thank you very much. We appreciate your being with us. Your statement will be carried in the record in its entirety, as I have said.

Mr. Loden, director of research, ACCO Seed, division of Anderson, Clayton & Co., Belmond, Iowa.

**STATEMENT OF DR. HAROLD D. LODEN, DIRECTOR OF RESEARCH,
ACCO SEED, DIVISION OF ANDERSON, CLAYTON & CO., BELMOND,
IOWA**

Mr. LODEN. Thank you, Mr. Chairman.

My name is Harold Loden, and I have prepared a statement which has been presented to the clerk, and I would like to ask that it be inserted in the record.

Senator JORDAN. It will be inserted in the record.

Mr. LODEN. I would like to add one point to the statement Senator Miller made. This is a consumer bill, and the main recipients of the advantages of the bill will be the American farmer, American agriculture, and consumers of the American farmers' products.

Senator JORDAN. I thoroughly agree with that statement.

Mr. LODEN. Thank you, sir.

(The prepared statement of Dr. Loden is as follows:)

Mr. Chairman, my name is Harold D. Loden and I am Director of Research, ACCO Seed, Division of Anderson, Clayton and Company, Belmond, Iowa. Our company develops, produces and distributes proprietary corn and sorghum hybrids and proprietary cotton varieties.

We strongly support S. 3070, and related bills, which would provide legal protection for the developers of new sexually reproduced plant varieties.

This proposed legislation may appear to be designed to improve the lot of the commercial plant breeder, however, we state without fear of contradiction that the real recipient of the benefits inherent in this legislation will be the American farmer and indirectly the consumer of the products of American agriculture.

S. 3070 will provide a basis of protection to the developer of new sexually reproduced plant varieties and further establish the incentive for increased effort in plant variety development by creating the possibility of recovering funds expended for plant breeding research. New plant varieties are of no value to the developer unless he can profitably produce and sell them, his only market is the farmer who in turn is motivated to buy a new variety because he expects increased profit to result from its use. We must accept the fact that legislation providing plant variety protection will afford benefits, not only to the farmer who buys planting seed, but also to the agri-business economy into which the products of the farmer must ultimately be sold and consumed.

A look at the commercial plant breeding firms presently maintaining research programs for the development of field crop varieties shows it to be dominated by firms producing hybrid seed. Crops in which practical first generation hybrids

can be produced have "built-in genetic variety protection". It is obvious that a workable form of variety protection is available to developers of hybrid varieties in which the breeder retains control of the parental seedstocks. This built-in genetic basis for variety protection has provided the necessary economic base and incentive for investment of private funds in development of hybrid varieties.

Commodity groups have recognized the value of variety protection in improving not only the per acre production but also product quality. During the last session of the Texas Legislature, a bill was passed requiring use of the certification tag as proof of varietal identity of varieties accepted for certification when such seed are sold in trade channels. This legislation provides the basic mechanism for protection of developers of cotton varieties accepted for certification in Texas. The basic reason for passage of this legislation was the inherent improvement of the quality of the Texas cotton crop which will result from use of genetically pure planting seed.

It is not necessary to dwell at length on the contribution of the hybrid corn and hybrid sorghum industries to the agricultural economy of the United States. Available statistics on increased per acre yields, and therefore farm income, prove without a doubt that the major beneficiaries of the developments of commercial hybrids of corn and sorghum have been, and will continue to be, the American farmer and the consumer of the products he produces in increasing quantities and at continually lower per unit costs. The vast majority of today's corn and sorghum hybrids are the result of investment of private funds in variety development research. The hybrid field seed industry has shown the capacity and willingness of the seed industry to invest corporate funds for applied research when recovery of funds invested and reasonable profits can be expected because of built-in genetic protection.

I recently made a survey of seed firms having research programs for the development of proprietary field crop varieties to determine if they would expand their research program to include soybeans when a legal system of plant variety protection was available. Soybean varieties, with few exceptions, have traditionally been developed by public funds; one of the compelling reasons being that as a self-pollinated crop the "right" to a soybean variety is lost upon first sale of seed of a new variety. The survey showed that all firms having production and research facilities in soybean producing areas would initiate soybean variety development programs, or expand present efforts, when variety protection becomes a reality. This survey proved without a doubt that legal variety protection will result in a tremendous increase in private research effort directed toward soybean variety development, the benefits of which will accrue directly to the soybean farmer and the American soybean economy.

I would like to illustrate the "other-side-of-the-coin" in research for soybean variety development by an experience of our company. About 20 years ago we initiated a program designed to encourage soybean production in West Texas. One phase of our effort was directed toward variety development. After more than 10 years of breeding research, we donated all of our soybean breeding stocks and records to the High Plains Research Foundation, a private research institution supported by voluntary contributions. This was done since we recognized that without variety protection, continued investment in this phase of our research program could not be expected to return a profit.

The current interest of private research organizations in wheat breeding research provides a dramatic example the willingness of private firms to invest funds in variety development with a reasonable possibility of obtaining a profitable return. Until a few years ago only two private firms in the United States maintained significant wheat breeding programs. The developments which have made wheat hybrids a possibility, even though not yet a proven practical reality, have resulted in at least twelve private firms employing more than thirty professional researchers in wheat breeding programs. This increase in research efforts for wheat variety development could have been generated by legal variety protection as well as by the possibility of having built-in genetic protection. The primary beneficiary of this additional research, supported by non-tax funds, will be the American wheat producer.

The passage of S. 3070 will offer benefits and opportunities for the small seedsmen to probably a greater degree than to larger firms. Many small breeding firms are engaged in the development of varieties of very specialized crops with relatively small sales volume; examples are petunias, tomatoes and other floral and horticultural crops. In these specialized areas of variety development expenditures for research will usually represent a larger percentage of the sales dollar

than for large volume field seed crop varieties. Another example of the type of benefits afforded the small seedsman would be the availability of protection to those individuals who make significant discoveries of new crop varieties such as combine type grain sorghum by W. P. Martin or the original stormproof stripper cotton variety by H. A. Macha. These two men are examples of the many who have advanced American agriculture in the introduction of significantly improved crop varieties—who, due to lack of variety protection, were not adequately rewarded for their contributions. The existence of more than 300 small specialized seed breeding firms in Germany, which has a system for variety protection, is considered indicative of the type of growth of small seed breeding companies we could experience in the United States with the passage of S. 3070.

The absence of any form of legal protection for the originators of new plant varieties which reproduce sexually has forced many companies to forego comprehensive research programs, this is particularly true for those firms who are engaged primarily in the production and distribution of crops in which production of first-generation hybrids is either not possible or practical. The enactment of legislation providing for plant variety protection would result in the initiation of private research programs for the entire spectrum of crop varieties . . . the missing link to significantly increased efforts in plant variety development is a system of legal protection such as sought by S. 3070.

Our firm, as a member of the private plant breeding industry, feels that the passage of S. 3070 will provide a method for the continued expansion of the free enterprise system and that an unbridled and protected plant breeding industry could make major contributions to agriculture, not only in the United States, but also aid in our Nation's commitments to aid in feeding and clothing the underdeveloped nations of the world. We look forward with anticipation to the opportunity of participating in the new, exciting, and competitive plant breeding efforts such legislation will generate. We are convinced that the additional investment and competition generated by S. 3070 will serve the best interests of American farmers, and of greater importance it will be in the general public interest and will strengthen our total agricultural economy.

We urge passage of S. 3070, and appreciate the opportunity to present our views on this very important matter.

Senator JORDAN. Mr. Babcock, please.

STATEMENT OF GEORGE B. BABCOCK, MANAGER, GROWER SEED ASSOCIATION, LUBBOCK, TEX.

Mr. BABCOCK. Mr. Chairman, my name is George Babcock. I am general manager, Growers Seed Association in Lubbock, Tex.

Growers Seed is a regional federated cooperative with a membership of 179 cooperatives located primarily in west Texas, southwestern Oklahoma and eastern New Mexico.

Our association develops and produces cotton planting seed and hybrid grain and forage sorghum seed for distribution to our membership.

Our board of directors has endorsed and supports S. 3070. This endorsement has come after careful consideration and evaluation of the bill. For purposes of pointing out the significance of this board decision, I would like to call your attention to the organization and structure of our board. Each of our member cooperatives names a representative to serve on our board of directors. Presently, our board is composed of 179 men representing a like number of local communities. The combined number of cotton and sorghum farmers who own and direct these local cooperatives is conservatively estimated at approximately 25,000.

There was recent passage by the Texas Legislature of a bill offering protection to the developers of cotton varieties in Texas. Our association opposed the first attempt at passage of this bill. The bill offered

the plant breeder "Breeder's Rights," but in our opinion omitted "Farmer's Rights." We believe that S. 3070 in section 112, guarantees adequate protection for farmers. This section allows farmers the right to save seed for their own use.

Another concern of our association, and one which has been carefully considered, was whether some seed companies who have large sums of capital available for research would be willing to enter into royalty-bearing contracts with cooperative or smaller seed companies for the right of reproduction of their privately developed varieties. Our feeling, after discussing this particular point with several companies, and after actually entering into contract with two companies, is that no company, no matter how large, will be able to supply all the planting seed requirements of American farmers.

Section 212 becomes important here in that it offers farmers the means to directly influence the decisions and practices of seed companies in the allocation and distribution of the supply of seed of non-hybrid varieties. If the developer of a variety is not willing to make available its variety in adequate supply and at a reasonable price, the farmer can increase seed of the variety for his own use. We believe that all developers of varieties will be willing to cooperate on a reasonable basis with others to insure that an adequate seed supply is available to meet demands of farmers.

Many cooperatives and small seed companies have relied on the public research agencies to develop and release advanced breeding material and new plant varieties. S. 3070, in section 115, provides for a research exemption, whereby the use and the reproduction of a protected variety for plant breeding or other bona fide research shall not constitute an infringement of the protection provided under the bill.

Most public agricultural experiment stations operate on a limited budget. In our opinion, S. 3070 will provide the mechanism for the public research agencies to increase their income and thereby make available additional funds for an accelerated plant variety research program. This can be accomplished by the agricultural experiment stations offering their new varieties for sale and/or entering into royalty-bearing contracts with seed companies for the right of reproduction and sale of seed of protected varieties developed by these public agencies.

I will be the first to admit that commercial plant breeding companies will greatly benefit from the protection afforded by the passage of S. 3070. I would like to point out, however, that farmers and the public at large stand to gain much more as a result of increased yields and lower per unit costs.

Next to the soil, seed is the foundation of American agriculture. Farmers that own our association recognize the importance of applied research in the development of new varieties. Applied research for variety development is a slow and costly process. An organization engaged in variety development is entitled to a fair return on its research investment. If America is to continue to be the agricultural leader of the world, more must be done by both the private and the public sector in developing new and better crop varieties.

Mr. Chairman, I will be happy to respond to any question which you or any member of the committee may have.

Senator JORDAN. Thank you very much.

I have no questions. You have a fine statement. We are glad to have you with us.

Mr. BABCOCK. Thank you, sir.

I appreciate the time you have given me.

Senator JORDAN. Mr. Neely.

**STATEMENT OF DR. J. W. NEELY, VICE PRESIDENT, COKER'S
PEDIGREED SEED CO., HARTSVILLE, S.C.**

Mr. NEELY. Good morning, Mr. Chairman.

Senator JORDAN. Mr. Neely is Vice President of Coker's Pedigreed Seed Co. of Hartsville, S.C., one of my neighbors.

We are glad to have you with us this morning.

Mr. NEELY. Thank you, Mr. Chairman.

We have a prepared statement which I would like to file.

I would like to repeat, as you have stated, that I am vice president of Coker's Pedigreed Seed Co. My company has been the breeder of varieties of several southern field crops for 68 years. We strongly support S. 3070 and related bills.

Thank you very much, sir, for the privilege of appearing before the committee and presenting this statement.

Senator JORDAN. Thank you, sir. We appreciate your statement and it will appear in its entirety in the record.

Please tell all of the Cokers "Howdy," for me.

Mr. NEELY. I certainly will.

(The prepared statement of Dr. Neely is as follows:)

Mr. Chairman and committee members, my name is J. W. Neely. I am Vice President of Coker's Pedigreed Seed Company of Hartsville, South Carolina.

My Company has been the breeder of varieties of several Southern field crops for 68 years. We strongly support the bill S. 3070.

One of these crops is soybeans. Over a period of 4 years we have spent several hundreds of thousands of dollars to develop a variety, Hampton 266, that is now being widely grown in the Southeastern United States. At least 83% of the soybean acreage of South Carolina is planted in this variety, according to a report of the South Carolina Crop and Livestock Reporting Service of the United States Department of Agriculture and Clemson University. A significant part of the soybean acreage in other Southeastern states is planted with seed of this variety.

The adoption and growing of this variety has been one of the important reasons for the marked increase in the acreage planted to soybeans and in the improvement of the quality of the crop.

My Company has lost hundreds of thousands of dollars in its soybean business. At the same time, by all known standards, our business is recognized as being conducted in a sound and efficient manner.

While we have been losing money with this soybean item, many seed growers, good friends of ours, have been increasing seed of our variety that were purchased from us and most of them have had a profitable business based upon the production and merchandising of seed of Hampton 266.

We feel that we should have legal protection so that we may receive a deserved share of the total income from the sale of seed varieties developed by us as a result of our expensive research program. We know that, if the Congress passes legislation providing for Plant Variety Protection we, along with other plant breeders, can assure farmers of continued services of high quality seed of high performing varieties.

I am very grateful to you Mr. Chairman, and to the other members of the committee, for the opportunity of presenting my views relative to this proposed legislation.

Senator JORDAN. Mr. Renner.

STATEMENT OF VICTOR A. RENNER, CONSULTANT, O. M. SCOTT & SONS CO., MARYSVILLE, OHIO

Mr. RENNER. Mr. Chairman, my name is Victor A. Renner. I represent the O. M. Scott & Sons Co., Marysville, Ohio. I have a statement I would like to present for the record.

Senator JORDAN. It will be included in the record, in its entirety.

Mr. RENNER. The recent concern for the quality of our environment has focused attention on the potentials of plants, including turfgrasses and ground covers to contribute to improvement of our environment. The control of erosion, as well as pollution, by establishment of a thick cover of grasses, is self-evident to those having observed erosion in the form of clay and silt particles polluting our streams. This control could be of great benefit as we regenerate the capacity of plants to purify, regenerate oxygen and purify the atmosphere by removal of the silt and clay, as I have said.

In essence, we support this, and the development of these benefits will be enhanced by providing the proper incentive in the form of the limited rights provided in this bill.

Mr. Chairman, we appreciate greatly the opportunity to be heard. (The prepared statement of Mr. Renner is as follows:)

My name is Victor A. Renner. I represent the O. M. Scott & Sons Company, Marysville, Ohio. Presently I am serving in the capacity of Consultant. Prior to 1970, I served the Company for 25 years in the area of Research and Development; the last 10 years as Vice President and Director of Research.

Our Company supports S. 3070. We are in the business of serving the needs of the American public in developing and maintaining lawn and turf areas. Green lawns and turf areas are recognized for their contribution to the enjoyment of all in providing aesthetic beauty as well as a carpet for outdoor recreation of all types.

In our Research and Development work, the patent system has been recognized as essential to securing the results of efforts devoted to Research and Development for meaningful utilization by the Company. Without the incentive of securing rights for a limited time, it is questionable whether efforts devoted to Research and Development would have been as extensive as they have been in the past 25 years.

As a result of progress in the science and technology of development of plants of all kinds, more and more effort has been devoted to developing new strains of grass and other ground covers by genetic modification. Unlike developments in the chemical or mechanical fields, an adequate system for securing rights of new developments has not been available. As a result of our own Corporate Research and Development endeavors as well as those of others in this area, we visualize that benefits to the American public will be in the form of plants which will provide better performance with greater efficiency.

Recent concern on the quality of our environment has focused attention on the potentials of plants, including turfgrasses and ground covers, to contribute to improvement of our environment. The control of erosion, as well as pollution, by establishment of a thick cover of grasses is self-evident to those having observed erosion in the form of clay and silt particles polluting our streams. Recent investigations have shown that turfgrasses also tend to stabilize plant nutrients to a much higher degree than other crops. Plant nutrients such as nitrogen and phosphorous have been suspected of upsetting the balance in our streams and lakes.

Of even greater benefit, the regenerative capacity of grasses and plants on our atmosphere has heretofore not been considered of significance. With the concern of atmospheric pollution, an assessment of the potential capacity for plants to regenerate oxygen and to purify the atmosphere by removal of toxic substances emitted in our modern-day living is assuming ever greater importance.

As more and more emphasis will be placed on the quality of life in America, the need for more green areas, including turfgrasses and plants of all kinds, will increase. Development of ever better, more efficient plants, both with respect to maintenance as well as effectiveness in all areas of performance, will be required.

In the long-range future, we visualize development of plants that will have all the desirable plant attributes—esthetic value, serve as a living carpet or cover, aid in pollution control, serve as an air or atmosphere regenerator and serve as a source of food—for use outdoors as well as in enclosed systems for human habitation.

It is our position that the development of these benefits will be enhanced by providing the proper incentive in the form of limited rights to industry and others as provided in the Bill.

Senator JORDAN. Thank you very much, Mr. Renner.

That is an important part of agriculture, certainly.

Long grasses and pasture grasses, grasses for golf courses and a great many other things need protection and they need better seeds which will be constantly coming on the market.

Mr. RENNER. Better plants, yes.

Thank you very much, Mr. Chairman.

Senator JORDAN. Mr. Walker, president, Stoneville Pedigreed Seed Co.

STATEMENT OF GEORGE REA WALKER, PRESIDENT, STONEVILLE PEDIGREED SEED CO., STONEVILLE, MISS.

Mr. WALKER. Mr. Chairman, my name is George Rea Walker, and as you have said, I am president of Stoneville Pedigreed Seed Co.

I have a statement which I would like to submit.

Senator JORDAN. It will be carried in the record in its entirety.

Mr. WALKER. I shall let that stay for the record, and I thank you. We strongly support S. 3070.

Senator JORDAN. Thank you very much, Mr. Walker, we appreciate your statement.

(The prepared statement of Mr. Walker is as follows:)

Mr. Chairman, my name is George Rea Walker. I am President of Stoneville Pedigreed Seed Company, Stoneville, Mississippi, and our company developed cotton varieties planted on over 25% of the U.S. acreage and 85% in the lower Rio Grande Valley of Texas.

We strongly support S. 3070 and related bills which will provide Plant Variety Protection to the developers of new varieties.

We support this legislation because it will stimulate private plant breeding, give farmers a wider choice of varieties which will be better in yield and quality and of greater importance, will improve the competitive position of U.S. farm products particularly cotton in world markets.

Our firm maintains one of the major cotton breeding research programs in the U.S., however, it is relatively small when compared to research programs of large companies involved in a wide range of crop varieties. In our company if legal Plant Variety Protection afforded by this legislation becomes a reality, we will immediately increase our research expenditures for cotton by more than 50%. We will further increase our research expenditures if the fruits of this expanded research program finds acceptance in the market place.

We would also expand our plant breeding research programs to include other crops grown in the areas in which our seed are now distributed. The crop which would receive first attention would be soybeans.

We strongly support this legislation since it will improve the lot of the American farmer and improve the overall position of our total agricultural economy. We strongly support this legislation and appreciate this opportunity of presenting this testimony.

Senator JORDAN. Mr. Scott

STATEMENT OF WALTER O. SCOTT, MEMBER, EXECUTIVE COMMITTEE, ASSOCIATION OF OFFICIAL SEED CERTIFYING AGENCIES, URBANA, ILL.

Mr. SCOTT. Mr. Chairman, members of the committee, I am Walter O. Scott, a member of the executive committee of the Association of Official Seed Certifying Agencies. I appreciate the opportunity to express the support of the association for the principle of plant variety protection as proposed in S. 3070.

The AOSCA is an organization of seed certifying agencies. There are 43 member agencies in the United States.

I have a prepared statement which I would like to enter into the record

Senator JORDAN. It will be carried in the record in its entirety.

Mr. SCOTT. Thank you. We do support the legislation.

Senator JORDAN. Thank you very much, Mr. Scott.

Mr. SCOTT. Thank you, sir.

(The prepared statement of Mr. Scott is as follows:)

Mr. Chairman and members of the committee. I appreciate the opportunity to express the support of the Association of Official Seed Certifying Agencies for the principle of plant variety protection as proposed in S.3070.

The AOSCA is an organization of seed certifying agencies. There are 43 member agencies in the United States. In most states the College of Agriculture, the Agricultural Experiment Station or the Extension Service is responsible for the seed certification program. In many of these states a grower organization is delegated the responsibility to carry on the program. In a few states a division or a section of the State Department of Agriculture is responsible for seed certification. Some of these also have active grower organizations that aid in the promotion of good seed.

In 1969 about 24,000 certified seed growers produced certified seed on over 2 million acres. Many of the certification agencies have two classes of membership, active and associate. Active members are those that are actively engaged in the certification of seed and associate are those not directly involved in seed certification but who support the principle and promote the use of good seed. There were almost 9,000 associate members among the 43 agencies in 1968.

Seed certification, briefly defined, involves the use of seed production and processing standards in combination with a system of record keeping, field inspections, and seed inspection to protect the genetic purity and maintain the genetic identity of crop varieties.

In the absence of this legislation anyone may legally reproduce and sell seed of varieties of the seed propagated crops. Some will argue that this is not an undesirable situation. However, as long as this situation exists, the cost of variety development in most self-pollinated crops will have to be borne by the United States taxpayer because private industry has little opportunity to protect and recover its research investment. In addition the number of people working in variety development in the self-pollinated crops will be confined to the number that can be committed to this type of research in public institutions such as the U.S.D.A. and at our land grant agricultural colleges.

This legislation will provide private industry with the opportunity to greatly increase its commitment of money and personnel to variety development. Industry will accept this opportunity and American agriculture is sure to benefit.

One of the important features of this bill is that it provides a choice in methods of protecting new varieties. The developer and/or owner may elect to exclude others from reproducing and selling his variety. If he elects to do this, the protection of the right to exclude others is his responsibility through the Civil courts.

On the other hand the owner may elect to specify that only Certified seed of his variety may be sold in the United States. One of the advantages of this form of protection is that violations involving seed moving in interstate commerce would be criminal acts and subject to prosecution by the Federal Government.

Many people associated with variety development and the commercial seed industry have felt that the seed certification form of protection is desirable because the financial burden of prosecuting violators in the Civil courts could be

a serious deterrent to the continued involvement of individuals or small relatively poorly financed plant breeding organizations in variety development.

Triumph wheat is one of the notable examples of the contribution of an individual who was interested in variety development as a hobby or avocation. Triumph was developed by a farmer in Oklahoma, the late Joseph Danne. At one time it was grown on more acres than any other wheat variety in the U.S. Examples of this type are not numerous but there have been enough to raise the concern that the benefits of plant variety protection should be convenient and available to all who engage in the development of varieties. The concern has been expressed that the efforts of these people would be lost if they were forced to prosecute through the Civil courts or to assign their new variety to a large organization capable of financing such action.

American agriculture needs an unending succession of new crop varieties because the hazards to crop production are constantly changing. For instance, as the result of natural hybridization of some fungus disease, new races of the disease develop. A variety of wheat which is resistant to the common races of stem rust when first released may be susceptible to new races which appear later. Insects often develop an appetite for a crop. Most of the insects that now feed on and damage soybeans were originally pests on other crops or weeds. Therefore, the need for new varieties is never satisfied.

By encouraging private industry to increase its commitment, plant variety protection will help assure that the improvement of crop varieties will keep pace with ever changing pests and needs.

Thank you for the opportunity to testify in support of this legislation.

Senator JORDAN. Mr. Ritchie Smith, National Cotton Council.

STATEMENT OF J. RITCHIE SMITH, ASSISTANT DIRECTOR OF RESEARCH, NATIONAL COTTON COUNCIL OF AMERICA, MEMPHIS, TENN.

Mr. SMITH. Thank you, Mr. Chairman.

I am J. Ritchie Smith, and I am assistant director of research for the National Cotton Council of America which has its headquarters in Memphis, Tenn.

I would like to say that the Council is the central organization of the raw cotton industry, representing cotton producers, ginner, merchants, warehousemen, cooperatives, spinners, and cottonseed crushers.

I also have a prepared statement which I would like to enter into the record, and at this time I would just like to simply say that the Council strongly supports the bill before your committee which establish an effective, equitable, workable system of voluntary plant variety protection.

Senator JORDAN. Thank you very much. It happens that I know a good deal about cotton, and we all know that the future of cotton, to a large extent, depends on not only better varieties but more pounds per acre if we are going to survive the competition of the synthetic fibers. We will have to develop better seed and other things that go along with it.

Mr. SMITH. We think this is very fundamental, doing exactly what you say.

Senator JORDAN. Thank you very much, and thank you for the work you and others are doing here.

(The prepared statement of Mr. Smith is as follows:)

Mr. Chairman, my name is J. Ritchie Smith and I am assistant director of research for the National Cotton Council of America. The Council, with headquarters in Memphis, Tennessee, is the central organization of the raw cotton industry, representing cotton producers, ginner, merchants, warehousemen, cooperatives, spinners and cottonseed crushers.

At their annual meeting in Atlanta last February, our delegates unanimously adopted a policy that the Council should:

Recognize the necessity for improving varieties and the quality of cotton planting seed; support legislation to establish an effective, equitable and workable system of voluntary plant variety protection, provided such system would allow any farmer the right to reproduce seed for his own planting, and would permit free interchange and research use of information, varieties, and other breeding material among plant breeders and other scientists; and continue to cooperate with the Joint Cotton Breeding Policy Committee in efforts to improve variety testing and the breeding, release and distribution of cotton planting seed which will best serve the interest of farmers and the entire cotton industry."

In pursuance of this policy the Council supports the bill before your committee, S-3070 with one suggested change. The bill if enacted will provide needed legal protection for the developers of all new plant varieties.

Plant breeding is fundamental to the future welfare of cotton. In its battle against man-made fibers, cotton must compete in quality and in price. Plant breeding is one of the vital keys to strengthening cotton's competitive position in both of these areas. It can give us new varieties which offer higher quality, value, and performance to our mill customers—and to the ultimate consumers. It also can lower production costs—and strengthen the farmer's ability to compete in price—by developing varieties which offer higher yields, better disease resistance, and other improvements which reduce unit costs.

Cotton urgently needs more attention and investment from plant breeders if it is to meet the test of modern competition. Yet the plain fact is that cotton is getting less attention—rather than more attention—from breeders. The reason is obvious: commercial breeders are losing money on cotton. They have no incentive to put heavy investments into cotton because they are denied the kind of legal protection of *their* new developments that has long been accorded to other innovators and inventors—including those who develop plants which are reproduced by asexual means.

We recently canvassed the commercial cotton breeding firms to ascertain their expenditures on cotton varietal development and what they expected to be spending in 1975, assuming cotton acreage would remain about as it is now. Ten firms, which account for varieties making up 65% of the acreage, reported that their expenditures would at least double if a variety protection system is established. On the other hand, the survey also revealed that expenditures would remain at today's already inadequate level or be lower if the lack of protection continues. Our contacts have also confirmed that the establishment of a variety protection system would bring other firms into the cotton breeding field.

A cotton breeder may devote 10 to 12 years, or more, to development of a new variety. He may spend several hundred thousand dollars—or perhaps a million—on that variety. Then, as soon as he puts his new variety on the market, *anyone* can come along and use the breeder's seed to reproduce and commercialize on the variety—without making any direct investment in the varietal development process.

Unless this situation is corrected, private investment in cotton plant breeding is assuredly on the wane. Those breeders who are continuing to put heavy emphasis on cotton are doing so in the hope and expectation that they will be provided reasonable legal protection for their investment, and be afforded the opportunity to make a return on that investment.

With the advent of hybrids in corn and grain sorghum—which gave breeders of these plants a built-in genetic protection for their efforts—we have seen vast increases in expenditure for varietal development on these crops by private firms. It has been good business for the firms involved, but producers of these crops and the general public have been the principal beneficiaries. Unfortunately, the hybrid principle cannot be made to work in many crops, including cotton, primarily because of difficulties in pollen transfer.

If we are to attract more private capital into cotton plant breeding, we must have a system of legal protection for the developers of plant varieties—whether reproduced asexually or sexually.

It is our opinion that S-3070 would provide an effective, equitable, and workable system for variety protection. The system would be open and available to any originator or developer of a new plant variety. But it would be a voluntary system; that is, the developer of a variety would not be required to use the system. Those choosing to use the system, however, could secure protection grants only on the basis of proof of novelty, distinctness, uniformity and stability of the variety.

Responsibility for the enforcement or defense of the protection granted is placed on the owner of the right, at his expense. Specific provision is made to permit and foster the free-flow of information and breeding materials among plant scientists.

I want to emphasize also that the bill would allow any farmer the right to reproduce seed for his own planting. And, of course, a farmer or anyone else could sell planting seed of a protected variety without infringement with authority from the owner of the right.

The bill sets 17 years from the date of issue of the protection certificate as the term of variety protection. This term or an even longer one may be necessary for some kinds of crops. For cotton, however, the term could be shortened—say to 10 or 12 years—without any adverse effects. We suggest, therefore, that different lengths of protection time for different kinds of plants or crops be established, based on specific requirements for each. In our view, this change would not alter the principles or intent of the bill, all of which we support, but it would make the bill sounder and more practical.

We, therefore, urge approval of S-3070 with the suggested change. The bill would extend to all plant breeders protection rights that have long been provided in some form for other innovators. Experience makes it abundantly clear that such protection is in the public interest. The investment and competition it will generate among cotton plant breeders also will serve the best interests of producers and the entire American cotton industry.

Mr. Chairman, we appreciate the opportunity to present the Council's views on this important matter.

Senator JORDAN. Mr. Stark of the Stark Bros. Nursery.

I have had the pleasure of visiting with you in my office many times.

How are your applies getting along?

STATEMENT OF PAUL C. STARK, SENIOR VICE PRESIDENT, STARK BROS. NURSERIES & ORCHARDS CO., LOUISIANA, MO.

Mr. STARK. Pretty well.

I know you are in a hurry, Mr. Chairman, but there is one point I want to bring out that is rather essential here.

First of all, I want to say that I am in favor of the passage of H.R. 13613 and this bill, S. 3070.

I also want to make the point that in the past several years, many dedicated individuals, committees, and agencies have worked and cooperated in bringing this proposed legislation to its present form. The seed trade, the U.S. Department of Agriculture, State agricultural experiment stations and many others have cooperated in achieving this result.

It has been 40 years since the plant patent bill for asexually reproduced plants was passed, and it has been in successful operation all these years.

Now, since that time we have been working on this sexually produced thing, and all these people have worked out something. It is the first time we have ever gotten all to seem to agree on something. It is something that is important. For that reason, after long, careful study, I think it should be passed as soon as possible, because there are a lot of angles.

Now, the benefit of this legislation to the general public in coming years is emphasized by the added food and plant product requirements of our increasing national and world population. We all know what that means.

This bill will further stimulate industry to participate in research in improved types of sexually reproduced plants for the benefit and happiness of the public.

That is very important, I think.
 Senator JORDAN. It certainly is.
 (The prepared statement of Mr. Stark is as follows:)

My name is Paul C. Stark, Senior Vice President of Stark Bros. Nurseries and Orchards Co. of Louisiana, Mo. I am here to testify in favor of the passage of H.R. 13631 and I hope Congress will pass it this session. However, I wish to further state that I am definitely opposed to combining this proposed Plant Variety Protection Act for sexually reproduced plants with the successful 40 year old Plant Patent Amendment to the Patent law covering asexually reproduced plants.

During my entire adult life I have been interested in and associated with the encouragement and protection of Plant Breeders and Plant Discoverers. My father in our catalog of 1895, just 75 years ago, quoted an article from a horticultural magazine about the need for encouragement of plant breeders. In the same catalog he carried a photograph of Luther Burbank under the title "The Edison of Horticulture" and pointed out the contrast between the official encouragement of Thomas A. Edison, the mechanical inventor and Luther Burbank, the breeder of new plants with no protection.

Not until 1930, 35 years later, was this discrimination officially corrected partially by the passage of the Plant Patent Amendment to the U.S. Patent Law, which applied only to plants asexually reproduced, such as grafting, budding, cuttings from the new parent plants. It was a long, slow educational process of explanation to the public, to the horticultural trade and finally to Congress.

I mention above the "discrimination officially corrected partially" because sexually propagated plants were not covered by the Plant Patent Amendment to the basic patent law. That is one of the main reasons why we are here today when the Congress is holding hearings on this bill H.R. 13631.

I was closely associated with this problem, before and after, the passage of the Plant Patent Amendment in 1930, as chairman of the Plant Patent Committee of the American Association of Nurserymen and also chairman of the Plant Patent Committee of the American Seed Trade Association in the 1920s.

When it was decided to come to Congress with definite proposals in 1929, we were officially informed that the inclusion of sexually reproduced plants resulting from the crossing of the male and female would show variations in plant characteristics which would make enforcement under the patent law impractical or impossible.

This same situation did not exist with asexually reproduced plants as the reproduced plant was actually a part of the original plant and reproduced true. There had been no cross-breeding of the male and female in the process. Under these circumstances, all agreed that the proposed patent legislation should be limited to asexually reproduced plants. This bill received the support of many agricultural and horticultural individuals and associations, as well as leaders in other fields of science and industry. For instance, a telegram to Congress from Thomas A. Edison, was an important factor in securing the passage of this bill in the Senate. In the House of Representatives a letter written by Luther Burbank in 1926, just before his death, was equally influential in securing the approval of the House.

I have given this background because it explains why the protection and encouragement was not given to sexually reproduced plants. However, there has been and is now a strong sentiment for a form of encouragement and protection of sexually produced plants that will fit the characteristics and limitations of this division of plants.

I am speaking personally in support of this bill based on my continual observation and connection with this over-all problem and situation. It has been difficult in the past 40 years to get the various interests, public and private, to agree on a program of action that will fit the characteristics of sexually reproduced plants.

In the past several years, many dedicated individuals, committees and agencies have worked and cooperated in bringing this proposed legislation to its present form. The seed trade, the U.S. Department of Agriculture, State Agricultural Experiment Stations, and many others have cooperated in achieving this result.

It has been 40 years since the Plant Patent Bill for asexually reproduced plants was passed and it has been in successful operation all these years.

The present interested groups do not want to further delay the encouragement for improving sexually reproduced plants.

This bill, H.R. 13631, is the result of long careful study and planning by many different groups and agencies, both private and governmental—all desiring the

passage of legislation to give this encouragement and protection to the plant breeders and plant discoverers of new improved plants.

The benefit of this legislation to the general public in coming years is emphasized by the added food and plant product requirements of our increasing national and world population.

This bill will further stimulate industry to participate in research in improved types of sexually reproduced plants for the benefit and happiness of the public.

Senator JORDAN. We appreciate your being with us, Mr. Stark.

Mr. Fortmann, chairman, seed policy subcommittee, State experiment stations committee on organization and policy, University Park, Pa.

STATEMENT OF DR. HENRY R. FORTMANN, CHAIRMAN, SEED POLICY SUBCOMMITTEE, STATE EXPERIMENT STATIONS COMMITTEE ON ORGANIZATION AND POLICY, UNIVERSITY PARK, PA.

Mr. FORTMANN. I have a statement here, Mr. Chairman, which I would be happy to have entered into the record.

Senator JORDAN. It will go into the record in its entirety.

Mr. FORTMANN. With your permission, I will comment on a couple of highlights, since I represent the State public interests in this bill as chairman of the seed policy subcommittee of the experiment station committee on policy, which represents your fine institution at Raleigh.

Senator JORDAN. Good.

Mr. FORTMANN. I might say we have been studying this matter for something over 5 years in the State stations. We have had a series of regional meetings that were held in various sections of the country. The one for the South was at Knoxville, Tenn. At these meetings, we have explored all of the possible ramifications and implications of various alternatives for variety protection or breeders' rights.

We feel at this time that all of the questions which we have had in mind where there were doubts about various proposals for variety protection have been satisfied in S. 3070 and the State experiment committee on organization and policy of May 1, 1969, approved in principle all of the features encompassed in this bill.

So, we feel that this represents approval by the 53 State agricultural experiment stations in the 50 States and Puerto Rico.

Senator JORDAN. It is very important, to have the approval of these agencies, because they have done a tremendous amount of work, as you well know, in helping produce better varieties, particularly in their own area.

I live in a tobacco-producing State, as you know, and it is a very important part of our money crops down there. We have had problems year after year with different wilts and all kinds of things. If it were not for our experimental stations, sometimes I think the tobacco farmers would have been out of business a long time ago.

Mr. FORTMANN. We are happy to hear you say that, Mr. Chairman.

Senator JORDAN. Thank you.

(The prepared statement of Dr. Fortmann is as follows:)

I am Dr. Henry R. Fortmann, Regional Coordinator for the 14 State Agricultural Experiment Stations in the 12 Northeastern States. It has been my privilege to serve for the past five years as the Chairman of *The Seed Policy Subcommittee* of The State Experiment Stations Committee on Organization and Policy (ESOP). In this capacity, I also served as Co-chairman (along with Dr. Martin

Weiss, who represented the U.S. Department of Agriculture) of a Joint States-Federal Working group appointed to consider alternatives and implications of proposals for providing "Plant Variety Protection".

While I am a Professor of Agronomy and a forage crops breeder, my testimony today is being made as Chairman of the Seed Policy Subcommittee of ESCOP. I hasten to add, however, that my personal views are in complete agreement with the position of the Subcommittee.

The other members of the Seed Policy Subcommittee of ESCOP are:

Dr. R. D. Ensign, Associate Director of the Agricultural Experiment Station of the University of Idaho (Moscow), representing the 12 Western States;

Dr. J. A. Ewing, Dean of the Agricultural Experiment Station of the University of Tennessee (Knoxville), representing the 13 Southern States and Puerto Rico; and

Dr. E. F. Frolik, Dean of the College of Agriculture and Home Economics of the University of Nebraska (Lincoln), representing the 13 North central States.

It is important to know that the members of this subcommittee solicited opinions and recommendations concerning variety protection from the State Agricultural Experiment Station Directors and extension and research staff members in the four regions. Organized review and exploration of the many implications and ramifications of breeders rights was facilitated by means of a series of regional meetings:

<i>Region and place</i>	<i>Regional conferences on variety protection</i>	<i>Date</i>
Northeast, University Park, Pa.....		Nov. 27, 1968
Northcentral, Chicago, Ill.....		Dec. 11-12, 1968
Southern, Knoxville, Tenn.....		Feb. 13, 1969
Western, Salt Lake City, Utah.....		Jan. 29, 1969

Each of these regional conferences was attended by SAES, extension and USDA personnel. AOSCA and industry were represented at all four meetings.

In a report which I made for the subcommittee to the Experiment Station Committee on Organization and Policy (April 30, 1969), several conclusions concerning points of basic concern were enumerated. In essence the questions involving principles of "Plant Variety Protection" had been resolved to the satisfaction of the state station representatives. Points about which we were concerned and which appear to be satisfactorily incorporated in the proposed legislation include:

1. The system is voluntary.
2. The system is open to both public and private plant breeders.
3. The system will not unduly restrict the flow of germplasm.
4. The system provides for Variety Review Boards.
5. The system provides for exemption in order to expedite plant breeding or other bona fide research.
6. Provision is made for an individual to save seed and grow the resulting variety for his own use.
7. Provision is made for the possible use of certification and limited generations as a part of the variety protection system.

On May 1, 1969, ESCOP approved, in principle, the proposals for variety protection now encompassed in S.3070. This constitutes endorsement of the proposal by the 53 State Agricultural Experiment Stations of the United States.

I am most appreciative for the opportunity of presenting this statement to you today.

Senator JORDAN. Dr. Reeve. Dr. Reeve is from the Campbell Soup Co.

Dr. Reeve, we are glad to have you with us. I believe we are going to wrap this up on time.

I want to say that I appreciate very much the brevity of your statements. With your statements in the record and what you have said, it completely covers this bill. I do not think that I have ever held a hearing that was more for one side than this one has been—except one. That was when I happened to be on a committee with the power to accept money. Somebody wanted to give us \$20 million for a building, and I did not have a bit of trouble getting it through.

You may proceed, Mr. Reeve.

STATEMENT OF DR. ELDRON REEVE, VICE PRESIDENT, VEGETABLE RESEARCH, CAMPBELL INSTITUTE FOR AGRICULTURAL RESEARCH, CAMPBELL SOUP CO., CAMDEN, N.J.

Mr. REEVE. Mr. Chairman, after your introductory remarks, I am a little bit reluctant to present my case here. Anyway, with your permission, Mr. Chairman, my name is Eldron Reeve. I am appearing here as vice president, vegetable research, for the Campbell Institute for Agricultural Research, a Division of Campbell Soup Co. We have maintained active agricultural research and plant breeding programs for the past 33 years. During this period, we have released to the public domain 32 varieties of tomatoes in addition to new varieties of several other vegetable crops including potatoes, okra, Scotch peas peppers, rutabagas, and mushrooms.

My appearance here stems from a sincere belief that S. 3070 would severely impede progress in the development of new varieties of plants. Unprecedented progress has been made under the existing system free of artificial controls and protection. We believe S. 3070 is contrary to the best interests of the agricultural community and to the consuming public.

We respectively submit the following reasons in support of our opposition to the proposed legislation.

1. The release of new varieties would be delayed:

The success of any plant breeding program depends largely on the store of genetical material or germ plasm available to the plant breeder. For example our bank of tomato genetical material presently contains 2,249 items. These were obtained on a free exchange basis among plant breeders from all corners of the world. This material has provided the basis for the 32 tomato varieties we have developed and released.

As a result of activity in recent years leading up to the present proposed Plant Variety Protection Act there has been a perceptible reluctance among plant breeders to exchange genetical material. We believe enactment of S. 3070 would essentially eliminate exchange of valuable germ plasm and severely curtail the development of new varieties.

2. Administration of the proposed Plant Variety Protection Act would be difficult if not impossible:

Some varieties are morphologically indistinguishable, but differ in certain nutritional or flavor characteristics. For example, with respect to morphological characteristics (plant habits, fruit size and shape, color) the objective in several of our tomato breeding programs is identical but objectives with respect to solids, acidity and flavor components are different. To establish uniqueness with respect to solids, acidity, vitamin content and subtle volatile flavor components is extremely time-consuming and requires highly sophisticated equipment and specially trained personnel. Notwithstanding the time—perhaps years—and expense involved, we submit it would be next to impossible for the proposed plant variety protection office to establish uniqueness of such new varieties and to administer the program.

3. The cost would be exorbitant in terms of money and professional talent:

Applications for certificates of plant variety protection would be expensive for the proprietor to prepare and for the Commissioner to certify. In case of contested awards and infringement litigation, the cost in terms of money, delay in release of new varieties and unproductive use of professional talent would be enormous. These are costs that eventually must be borne by the consuming public.

4. The present, voluntary system encourages creativity and affords protection through seed certification and development of F₁ hybrids:

If desired, protection can be achieved through existing seed certification programs and the development of F₁ hybrids. F₁ hybrids provide a built-in protection system, since control of the parental material can be retained by the originator. The present voluntary system rewards creativity, free of the handicaps of an artificial protection system.

For the reasons enumerated above, we respectfully submit that S. 3070 is not required to provide protection for the development of new plant varieties, but would, in fact, impede progress and be detrimental to the interests of the agricultural community and the consuming public.

Thank you, Mr. Chairman.

Senator JORDAN. Thank you, Mr. Reeve.

Of course, you did reverse the trend here today.

Mr. REEVE. I am sorry.

Senator JORDAN. But that is all right. We want all views, and your testimony will certainly be considered by the committee. I can assure you of that. We appreciate your being here and giving us your thinking on it.

Mr. REEVE. Thank you very much.

Senator JORDAN. Thank you very much.

Is there anybody else who wishes to testify?

(No response.)

Senator JORDAN. I believe not.

I have a statement here from the American Farm Bureau Federation which will be filed in the record.

(The statement referred to follows:)

WASHINGTON, D.C., June 11, 1970.

HON. ALLEN J. ELLENDER,
Chairman, Committee on Agriculture and Forestry,
U.S. Senate, Washington, D.C.

DEAR SENATOR ELLENDER: The American Farm Bureau Federation is interested in S. 3070 and related bills which provide for the Plant Variety Protection Act. Our members are both producers of seed and users of seed and are therefore vitally affected.

In connection with the Plant Variety Protection Board that would be established by the legislation, we would urge that the bill be amended to provide for adequate farmer representation on the Board. As now written, it is unclear as to whether farmers would have any membership on the Board, and as both producers and users of seed, we believe farmers' interests should be represented.

The legislation currently provides for plant variety protection that would expire seventeen years from the date of issue of the certificate. We believe that farmers' interests would be better served by a lesser period of years of plant variety protection.

Many farmers derive substantial income from producing certified seed. Their right to produce certified seed should be protected by limiting the options given to breeders.

We recommend that the legislation be modified in these three respects before it is enacted.

We would appreciate your making this letter a part of the hearing record on S. 3070.

Sincerely yours,

MARVIN L. MCLAIN,
Legislative Director, American Farm Bureau Federation,

Senator JORDAN. I have a statement for the record from the Delta & Pine Land Co., which will be included in the record.

(The statement referred to follows:)

STATEMENT OF EARLY C. EWING, JR., VICE PRESIDENT, DELTA & PINE LAND COMPANY, SCOTT, MISS.

Delta & Pine Land Company is a Mississippi corporation involved in farming and in the cotton planting seed business. This seed business is based on the sale of cotton varieties which have been developed by this company since it began a cotton breeding program in 1915. Our breeding efforts are almost entirely on cotton and are located at our nurseries here at Scott, Mississippi; Lubbock, Texas; and Casa Grande, Arizona. At present our work is limited almost entirely to cotton because we do not feel that the other field crops have a sale potential which would offset the cost of developing new varieties.

We are able to recover our costs in cotton because of our long experience with this crop and our success in developing very popular varieties. The custom of farmers in buying a certain amount of their cotton planting seed requirements from the breeders of these cottons and the difficulty of saving cotton planting seed in a general farming operation have led to our being successful. The fact is that we are our own worst competitor. In other words, competition with other sources of seed of varieties which we have developed is a bigger sales hurdle than varieties of competing cotton breeders. For example, in 1967 we introduced a new variety, Deltapine 16, which has been very popular. Last year acreage planted to our varieties in the United States increased 7 percent for a total of 26 percent. At the same time, however, our own sales of Deltapine varieties decreased 5 percent. Farmers generally are planting at a lower rate but this by no means accounts for the decline in our seed sales from one year to the next while the acreage planted to our varieties is showing a healthy increase. The Plant Variety Protection Act would enable us to participate in sales of our varieties based on the success of our research, development, and promotion. This Act would enable us to supervise the quality of seed sold which bears our variety name. We could expand our plant breeding efforts into major (or minor) crops which are grown in our area of production, for examples, soybeans, small grain, forages.

The Plant Variety Protection Act would offer benefits to farmers at the same time.

1. More firms would be interested in working on various varietal problems, so that finding solutions to these problems would be more likely.

2. The supply and quality of a particular variety would be more stable. Needs could be predicted so that present cycles of shortage and surplus seed could be equalized and the quality of these supplies could be much better supervised. At the present time in years of shortage caused by bad weather supplies of seed of very poor varietal purity and germination are being offered for sale. On the other hand in a good seed year the market is flooded so that legitimate seed producers must compete with large volumes of seed offered for sale by opportunists. It is a characteristic of the cottonseed business that cottonseed is produced as a by-product of the production of lint, so that all producers in a sense are potential producers of planting seed.

3. Prices of cotton planting seed tend to fluctuate rather widely with the supplies so that one year good quality seed may be priced about the same as oil mill seed and another year when there is a shortage seed of questionable quality is sold for very high prices.

4. While a breeder under the Plant Variety Protection Act would be entitled to the benefits of selling his variety, it is specifically written into the Act that nothing would interfere with a farmer's ability to plant seed which he himself has produced.

The seed industry as a whole would benefit from the Act.

1. Trade in seeds of varieties which would tend to be handled by legitimate seed dealers and less of it would be done by the in-and-outers with the result that much more stable quantities, qualities, and prices would prevail.

2. Independent producers and processors would not be forced out of business by seed breeding firms since with many field crops the amount of seed required is so great that no one company could produce and process the seed needed of his variety. The same people who are now growing seed and processing it would continue to do so except that the breeder would have a chance to participate in the success of his variety through licensing fees and to exercise a greater degree of supervision over the quality of seeds bearing his variety name.

3. Better supplies and quality of seed would lead to greater customer satisfaction, both for the seed dealer and the breeder. Farm products are used by a wide range of industries as a basic raw material and many products are used directly or after processing as food. Progress in varietal development encouraged by this law would result in products of better quality at lower cost.

Probable effects of this Act would be:

1. A considerably greater effort by commercial plant breeders to develop improved varieties of seed propagated crops which are not hybrids. Efforts to improve seed crops presently offered by private breeders would be increased since there would be assurance that successful efforts would be rewarded.

2. It is doubtful that an excessive number of proprietary varieties would be developed because the process of variety development is expensive and depends on the efforts of highly trained people over a considerable period of time. About 1960 our company started to develop from scratch a new variety of cotton adapted to the High Plains of Texas. It is expected that such a variety will be ready for growers about 1973, some 14 years after development was started and representing a cost of about \$450,000. The expenditure of this amount of money and time means that these efforts can be made only in cases where there is reasonable expectation that these expenses can be recovered from the sale of the resulting seed.

In designing this bill the authors have thoroughly studied the systems of other countries, have given wide publicity to its provisions, and have revised it to meet the needs of all those who might be affected by it. As a result it has broad support from many diverse groups, all of whom are interested in the improvement of American agriculture.

It is our firm belief that this Act will make possible the strengthening of agriculture with benefits to the seed breeder, the seed dealer, the farmer, and the ultimate consumer.

Senator JORDAN. I also have a letter from the Associated Hybrid Producers Cooperative Service of Hudson, Iowa. That will be included in the record.

(The letter referred to follows:)

HUDSON, IOWA, June 8, 1970.

CHAIRMAN,
Agricultural Research and General Legislation Subcommittee, Senate Committee on Agriculture and Forestry, U.S. Senate, Washington, D.C.

DEAR SIR: It is my understanding that on Thursday, June 11 your committee is to hold a hearing on S3070, which is a bill which would provide a plant variety protection act.

I have spent my lifetime in the seed business, have spent a great deal of time overseas in the marketing of American agricultural commodities, and am thoroughly convinced that we need legislation of this type. I have served as a member of the Breeders' Rights Study Committee of the American Seed Trade Association, and personally and in behalf of Associated Hybrid Producers, which is an organization of hybrid seed corn companies serving Iowa, Illinois and Indiana, I want to endorse S-3070 and urge that this bill be brought to the general committee on Agriculture and Forestry and to the floor of the Senate for favorable action.

Very truly yours,

GEO. M. STRAYER,
Secretary, Associated Hybrid Producers Cooperative Service.

Senator JORDAN. Thank you very much, gentlemen, for being with us today and for your testimony on this bill.

We shall act on this as soon as we can.

We will keep the record open through next Monday, if anybody has a statement he would like to file. If you can get it in, we will include it in the record.

Thank you very much.

(Whereupon, at 10:35 a.m., the hearing was concluded.)

(Additional statements filed for the record are as follows:)

RALEIGH, N.C., June 8, 1970.

HON. B. EVERETT JORDAN,
Chairman, Subcommittee on Agricultural Research and General Legislation, Committee on Agriculture and Forestry, U.S. Senate, Washington, D.C.

DEAR SENATOR JORDAN: The Board of Directors of the N. C. Crop Improvement Association at their last meeting gave consideration to S.3070, a bill to give "Plant Variety Protection" to developers of novel crop varieties of sexually reproduced plants.

The N. C. Crop Improvement Association is the official seed certifying agency in North Carolina and as such is vitally interested in the development and release of improved crop varieties for our agricultural industry. We believe that the basic principle of providing plant variety protection will encourage the development of better crop varieties through expanded development research by private industry. Passage of this legislation will provide the means whereby the developers of a sexually reproduced variety may maintain some control of its seed increases after it has been released to the public. By so doing, the developer may recoup the investment which was made in research. We think this is necessary in order to assure the farmer of better varieties through expanded research by private industry.

The N. C. Crop Improvement Association, therefore, fully supports the basic principles incorporated in S.3070 and urge its favorable consideration for the advantages that will accrue to the farmers who need a continued supply of improved crop varieties.

We would appreciate it if you would include this letter in the record of the hearings on S.3070.

Sincerely,

FOIL W. McLAUGHLIN,
Director in Charge, North Carolina Crop Improvement Association.

STATEMENT OF JACK R. FELGENHAUER, PRESIDENT, WASHINGTON ASSOCIATION OF WHEAT GROWERS, RITZVILLE, WASH.

Mr. Chairman and members of the committee, we appreciate the opportunity to present this statement on H.R. 13631.

The Washington Association of Wheat Growers is a voluntary membership organization of wheat producers which has membership in excess of 3400 and maintains offices at 301 West Main, Ritzville, Washington 99169. The goal of the organization is to enhance the business climate in which the Washington wheat producer operates. To this end the Association has, since its inception in 1954, been involved in the development of both domestic and export markets for Pacific Northwest wheat. During the same time it has been involved in the development of wheat varieties having acceptable milling and end-use characteristics as well as acceptable agronomic characteristics. This total involvement has included not only an advisory capacity in the use of public funds but also, through the Washington Wheat Commission, the allocation of producer funds for wheat market and variety development. Since H.R. 13631 relates to and can be expected to generate more active entry into wheat variety breeding by private plant variety developers we are naturally concerned about its provisions.

In this respect our organization on June 9, adopted this policy position:

"This group supports the principle of the Plant Variety Protection Act provided that it is amended specifically for wheat as follows:

1. Improve the language to remove vagueness regarding security of breeding materials.
2. Require a descriptive statement of facts reporting conclusions of the proprietor with regard to certain quality related factors which are to be specified by the Commissioner of Plant Variety Protection.

In absence of the above amendments we recommend that wheat be deleted from the Act."

With respect to item number one: We believe H.R. 13631 as written presents an extreme potential for damage to the PNW wheat industry whose noncaptive export market customers are becoming increasingly quality conscious. Our present public breeders show a very high degree of concern for wheat end-use qualities and have been very successful in keeping our producers supplied with a succession of high-end-use-quality wheats to replace those that have become disease ridden and useless. Private breeders have not yet demonstrated this capability although we hope they soon do. Our industry cannot afford to risk damage to the public breeding program until such time as private breeders do demonstrate this capability.

The work of public wheat breeders would be highly susceptible to plagiarism and a subsequent blocking of their development efforts unless this Act gives them greater protection. Being public funded they must annually divulge information concerning lines being developed and must give the public easy access to variety test plots. In essence they are required to point out to an unscrupulous plant breeder exactly which test line seeds he should steal or which unique plant characteristics he should register for dishonest personal gain.

If the required divulgence of information and easy access is terminated then public confidence in USDA-ARS and state funded wheat development efforts will erode with a naturally expected result that public funding will be gradually withdrawn.

If the public breeder must for protection register every new experimental line he develops or if he must continually challenge variety registrations then a disproportionate and unnecessary amount of his development funds will be wasted nonproductively. Again confidence would be lost and withdrawal of funding could be expected to result.

We do not oppose a shift from public funded wheat variety development to privately funded development. Neither do we believe that all private plant breeders or companies are so unscrupulous that they would plagiarize the work of public plant breeders. We are concerned however, that adequate protection be given to the work of wheat breeders in public employ until such time as private breeders have demonstrated the same ability for achieving a continuing output of quality wheats as that demonstrated by public plant developers.

To the achievement of this end we request that the Act be amended to state that any wheat variety submitted for registration that has "unique and identifiable characteristics" of no discernible difference from a previously identity-numbered public station developed variety and which is subsequently challenged is presumed to have been first developed by the public experiment station and is not eligible for private registry unless the private breeder can establish to the satisfaction of the Commissioner that his variety was independently developed.

With respect to item number two: As previously indicated, wheat quality with respect to end-use characteristics has increasingly become a very important factor in the export marketing of Pacific Northwest wheat. In 1968 quality factors caused a loss of sales of several million dollars worth of this wheat in the Japanese market. It is therefore imperative that both wheat producers and merchandisers have available to them a reasonably accurate and use-oriented description of the quality of production that might be expected from a specific variety when grown in a specific locality.

The need to co-mingle wheat as it moves through the market channels means that a relatively small amount of visually unidentifiable wheat of poor quality could destroy the end-use quality of a much larger amount of acceptable quality wheat. This does happen now both through design and accident. To minimize this sort of thing both the producer and the merchandiser need to have at hand the best possible description with respect to the end-use qualities of a particular wheat variety.

It is not desired that this description be construed as a warranty, express or implied, or that any registered variety be required to meet specific quality standards prior to registry or release. It is desired that some mechanism be adopted that would assure reasonable accuracy of the quality description of varieties submitted for variety protection.

It is further desired that the Commissioner of Plant Variety Protection be required to use public hearings as a method in establishing and altering uniform standards for testing, that he establish requirements for comparative description and that the period of testing required not be overly long.

We therefore request that amendments to the Act (which will be submitted) be adopted before the Act is voted out of Sub-Committee.

Much of the economy of the State of Washington and the Pacific Northwest is dependent upon the export acceptability and sales of wheat that is produced within the region. We therefore respectfully request that you give fullest consideration to our requests in respect to H.B. 13631.

STATEMENT OF THOMAS B. HOUSE, PRESIDENT, AMERICAN FROZEN FOOD INSTITUTE

The undersigned Thomas B. House, President of the American Frozen Food Institute (formerly National Association of Frozen Food Packers), whose members pack some 90% of the national production of frozen vegetables, fruits, and juices and a large volume of other frozen foods, presents the following statement in behalf of the Institute and the industry it represents in connection with S. 3070.

The American Frozen Food Institute (AFFI) opposes S. 3070 providing for Certificates of Protection of 17 years duration for sexually reproduced fruit and vegetable varieties. For practical purposes the Certificate has most of the attributes of a patent.

There are many reasons supporting this position.

1. The development and release of new varieties will be delayed.
2. The free exchange of information, germ plasma, and breeding stock will be inhibited or limited.
3. It would be difficult or impossible to apply standards and procedures analogous to patents to sexually reproduced varieties. Sexually reproduced varieties are on the average more variable and unstable from area to area, season to season, and generation to generation than are those asexually reproduced. Thus the existing law as to asexually reproduced plants is not a precedent. The "invention" is in many cases incapable of identification and distinction. In many vegetable categories there are no universal guidelines, only a few people are expert enough to judge, and they are often likely not to agree.
4. Plant breeders generally cannot leap ahead from invention to invention. The many characteristics sought in breeding—such as sugar, acidity, color, solids, seed size, leaf area in relation to fruit yield, etc.—are difficult to measure accurately. Moreover most wanted characteristics are generally achieved bit by bit with barely observable improvements over preceding generations. The proposed law would either stultify this effort by plant breeders as they move ahead inch by inch or lead to continuous expensive litigation and infringement suits.
5. Time will be lost from plant breeding activities. Those gifted individuals now expert plant breeders will be required to devote considerable time to the technical and legal aspects of the Certificate of Protection law and the paper work involved in preparing applications to say nothing of interference and litigation proceedings.
6. The cost is considered prohibitive both to the Federal Government and the plant breeders. It has been estimated that 300 Certificates (patents) would be applied for yearly at a cost to the Department of Agriculture of between \$300,000 and \$400,000. It has also been estimated that the cost of preparing and filing an application for a Certificate (patent) would be about \$1,000 with additional prosecution costs amounting to \$500, assuming no extended proceedings such as an interference or appeal. Actually, there are many hundreds of thousands of varieties of a particular fruit or vegetable which will have to be properly dedicated to the public or certified (patented) by their present owners if the owners wish to safeguard what they already have. The estimate of 300 applications a year is not considered accurate, at least during the initial years. During these years the number of applications may be limited only by the available technical and legal personnel in private industry and their necessary counterparts in the Department of Agriculture.
7. This is in a sense special interest legislation. It establishes a monopoly by Certification as an inducement to further plant breeding when in fact today most sexual plant breeding, in terms of money expended and perhaps results, is already in the public domain or being dedicated to the public through the Federal Government, agricultural colleges, and private corporations which make their varieties available to all without charge. For example, it is estimated that out of a total agricultural research budget in the United States of about \$800,000,000 a year, \$400,000,000 is budgeted by the Depart-

ment of Agriculture and public institutions and really represents taxpayers' money spent for the benefit of the public generally.

8. Perhaps most important, the proposal is inequitable. Having in mind the volume over many years of fruit and vegetable research by public agencies and private corporations for their own benefit and the public domain, the inequity or windfall from the granting of a particular Certificate of Protection is apparent. For example, it is possible for a plant breeder to cross varieties A and B, which may together represent perhaps fifty man years of genetic research by the Department of Agriculture and one of our great universities. A and B were both in the public domain. C, the result of crossing A and B, can be the subject of a monopoly which to a great extent represents the accumulation of knowledge and breeding by two great institutions achieved over many years.

For these reasons it is respectfully submitted that S. 3070 should not be enacted. The Institute has limited its opposition to S. 3070 as it applies to sexually reproduced fruits and vegetables. We express no opinion as to sexually reproduced flowers and ornamentals because from the viewpoint of the consuming public aesthetics rather than food is involved and because of the more limited interest of our membership, who are generally not involved in the propagation of flowers and ornamentals. Nor is this Institute opposed, indeed we actively support, the extension and improvement of the traditional seed certification programs, which bear no resemblance to S. 3070, and the use by plant breeders of F1 hybrids. Both of these methods afford some protection for plant breeders with minimal disadvantages and costs for plant breeders, farmers, processors, and consumers.

Thank you for affording us the opportunity of presenting our views.

STATEMENT OF E. HERVEY EVANS, JR., PRESIDENT, MCNAIR SEED COMPANY,
LAURINBURG, N.C.

Mr. Chairman, my name is E. Hervey Evans, Jr. I am President of McNair Seed Company, a seed breeding firm located in Laurinburg, N.C. In addition, I have been actively engaged in farming on a commercial basis all my working life. My purpose in this testimony is to state my conviction that Senate Bill S-3070, better known as the Plant Variety Protection Act, represents one of the most significant and beneficial pieces of agricultural legislation ever presented before the Congress for passage.

As you know, our founding fathers recognized in the Constitution the desirability of encouraging creative, inventive genius by making possible, for a limited period of time, the protection of the right of inventors to exploit their inventions in the marketplace. That our modern patent system has operated to stimulate research greatly and has been in large part responsible for the technological, scientific, and medical advancements that have made our society the most highly developed society in the history of the world can hardly be debated.

The question before us is whether similar benefits to mankind can result from the passage of the Plant Variety Protection Act which would grant limited protection to those creative people who develop new and improved varieties of agricultural crops. In answering this question, it is helpful to look at the history of agriculture for the last 30 years or so.

The first natural protection afforded plant breeders came with the development of hybrid corn. Because the very system of producing hybrid corn meant that the plant breeder controlled his parent lines of corn from which the hybrid was produced, the farmer came back to the hybrid seed corn producer each year for a new supply of seed. Of course, this assured a market for good hybrid corn varieties and the possibility of recouping the large investments in research which had to be incurred by the plant breeder in order to develop new hybrids. As a result, we witnessed a tremendous investment by private breeding companies in research and a competitive research situation which led to an unprecedented advance in agricultural productivity. Although the cost of seed rose slightly to the farmer, this increased productivity actually brought about a significant reduction in the cost per bushel of corn produced. To illustrate, the average corn yields in my state of North Carolina rose from approximately 22 bushels per acre 30 years ago to about 70 bushels per acre today. Even though seed costs rose from \$1.00 per acre to about \$2.25 per acre during this period, the higher yields reduced the seed costs per bushel of corn produced from 18 percent of value of the corn to just slightly over 2 percent. Farmers responded by planting virtually 100 percent of their acreage to hybrid varieties.

A similar story exists in the case of other hybrid crops such as grain sorghum since all hybrid crops offer the breeder a measure of plant variety protection. Clearly, this protection is what has attracted the tremendous investments by competing seed breeders.

No such progress has been made with most of the self-pollinated crops like soybeans, smallgrain, and cotton which by nature do not lend themselves to the production of hybrid seed. Such crops offer no protection to the breeder, and so there is comparatively little private research undertaken on them.

Do we need to encourage such research? This might be a good question in these days of agricultural surpluses.

Agricultural surpluses have a way of vanishing overnight. The soybean market today is an example of the change from surplus to short supply in only one year. In the years ahead, the tremendous population growth expected in this country and throughout the world will make the risk of acute shortages even greater. What nation would choose willingly a situation of shortages of agricultural commodities in preference to a normal situation of modest surpluses, even with the problems that surpluses create? The answer is obvious. One way to avoid the serious problems of future shortages is to encourage private research to develop better performing crops. This the Plant Variety Protection Act would do.

Let us remember that plant breeding research is a slow, expensive process, normally taking a minimum of 10 generations at best between the making of an initial cross between two plants and the release of a new variety to farmers. This is one more reason for acting now to encourage the development of new crop varieties to meet the expanding consumption needs and potential shortages of tomorrow's world.

The Plant Variety Protection Act in its present form has been carefully worded to satisfy the needs of many diverse groups in Agriculture without sacrificing any of the major principles of plant variety protection. The American Seed Trade Association, State Seed Associations, Crop Improvement Associations, Agricultural Experiment Stations, public as well as private plant breeders, Federal and State Seed Control Officials, the United States Department of Agriculture, farm organizations, seed dealers and distributors, and farmers themselves have participated in the drafting of this legislation. Each objection along the way has been weighed carefully by all concerned, and these objections have resulted in much strengthening of the proposed legislation. Many organizations will have testified before this committee in favor of the bill.

I have confidence that the decision of this committee will be a favorable one towards the Plant Variety Protection Act and I appreciate the privilege you have given me to present this testimony.



