# USDA-Iowa State University Database on the Isoflavone Content of Foods

# Release 1.4

## Prepared by the

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## ERRATA

Following the release of "USDA-Iowa State University Database on the Isoflavone Content of Foods" in 1999, we have made a number of minor updates. They are:

- Release 1.1 contains a few minor corrections to descriptions for infant formulas.
- Release 1.2 contains corrections to the values for formononetin and biochanin A in red clover.
- Release 1.3 contains corrections to one infant formula and adds data for another.
- Release 1.4 contains corrections to the values for soybean butter; soy flour, full fat, roasted; soybeans, immature seeds, raw (Edamame); and soybeans, mature seeds, dry roasted (soy nuts).

We have recently issued the corrected version as **"**USDA-Iowa State University Database on the Isoflavone Content of Foods, Release 1.4**".** If you have downloaded an earlier release before April 18, 2007; we recommend that you replace it with **Release 1.4.**

## Documentation

The development of the database for Isoflavones, one of the families of phytoestrogens, in foods was a collaborative effort between the Food Composition Laboratory (FCL), and the Nutrient Data Laboratory (NDL) of ARS/USDA and the Department of Food Science and Human Nutrition of the Iowa State University (ISU). Many scientists are interested in isoflavones because of their weak estrogenic and other biological properties. The main dietary sources of isoflavones are soybeans and soyfoods. Some other food legumes contain very small amounts of isoflavones.

Data for isoflavone contents of foods were collected from scientific articles published in refereed journals. In addition, isoflavones data were generated by extensive sampling of soy-containing foods and subsequent analysis at the Iowa State University. Data for only the most prominent isoflavones, Daidzein, Genistein, Glycitein and their glucosides were evaluated using the expert system described by Mangels, et al (J. Am. Diet. Assoc. 93:284-296, 1993) for five general categories: analytical method, analytical quality control, number of samples, sample handling and sampling plan. The analytical method described by Murphy, et al (J. Agric. Food Chem. 45:4635-4638, 1997) was used as the reference method for evaluating analytical methodologies in the published articles. Although acid addition to extraction solvent and use of internal standard to adjust analytical errors due to work-up procedures are highly recommended, only few studies have used these procedures. Since this is the first database on isoflavones, the methodology criteria for inclusion in the database were relaxed so as to include as many foods as possible.

The glucoside forms of the isoflavones are converted to free forms (aglycone) to be absorbed by the gut and exert their potentially protective effects (Murphy, et al, J. Agric. Food Chem. 45:4635-4638, 1997). Therefore, we have converted the values for glucoside forms into aglycone (free) forms by using appropriate ratios of molecular weights and have added them to their respective free form values to generate mean values for each aglycone form: Daidzein, Genistein and Glycitein. Simple addition of free and glucoside forms of isoflavone concentrations without this correction will overestimate true isoflavone aglycone concentration by almost a factor of two (Wang and Murphy, J. Agric. Food Chem. 42:1666-1673, 1994; 44:2377-2383, 1996).

Values expressed on a dry weight basis were converted to wet weight basis either by using given moisture content or by assuming commonly expected moisture content for that particular food. The table contains mean values, standard errors of the means (SEM), minimum (Min) and maximum (Max) values for individual aglycone forms: Daidzein, Genistein and Glycitein and the total isoflavone content. The totals are given if values were available for at least Daidzein and Genistein. The values for total isoflavones may not agree with the simple addition of the mean individual values. Several articles did not report Glycitein values. Glycitein contributes about 5%-10% to the total content. For example: soy flour full fat (NDB No. 16115), daidzein mean was calculated from 20 values (#S), genistein mean from 21 values, glycitein mean from 7 values, and total isoflavones mean from 20 values. Reinli and Block (Nutr. Cancer 26:123-148, 1996)

summarized values for daidzein and genistein available prior to 1996. However, values for glycitein were not included because of the lack of data on the estrogenic activity of glycitein. Preliminary evidence suggests that glycitein has as potent an estrogen activity as daidzein and genistein (Song et al, J. Agric. Food Chem, 1999 In press). Each mean is assigned a Confidence Code (CC) of a, b, or c. The Confidence code is an indicator of relative quality of the data and the reliability of a given mean value. A confidence Code of "a" indicates considerable reliability, due either to a few exemplary studies or to a large number of studies of varying quality.

The user is reminded that the variety, the crop year and the location affect the isoflavone contents of the soybeans (Wang and Murphy, J. Agric. Food Chem.,42:1674-1677,1994) and contribute to the large variability in the isoflavone contents of soybeans, as well as, soyfoods. The soybean varieties, therefore, were divided into 'food quality' (NDB no.16108) and 'commodity grade' (NDB no. 99091) for U.S. varieties. Japanese (NDB no. 99092) and Korean (NDB no. 99093) varieties were also separated from the U.S. varieties. The method of extracting proteins (alcohol vs aqueous) in the processing of various soy products also affects the isoflavone contents; alcohol extraction reducing the contents significantly.

The isoflavone database is typical of small data sets which can be developed for food components of recent scientific interest. A review of the numbers of studies which contributed acceptable data reveals that for most foods, one study contributes the values for each isoflavone. For example, daidzein values for 73 foods were derived from single studies. It should be noted that one study may have reported values for one or more foods. Furthermore, a single study may have analyzed multiple samples for a single food.

Coumestrol (the most common coumestan), though not an isoflavone, has a similar structure and competes with estradiol for cytoplasmic receptors in mammary tumor cells. Biochanin A and formononetin, 4-methyl ether derivatives of genistein and daidzein respectively, are reduced to genistein and daidzein by the gut bacteria.. These three compounds share the estrogenic/antiestrogenic, antioxidant and antiproliferative activities of the prominent isoflavones (Mazur *et al.* Anal. Biochem. 233(2):169-180, 1996). Very few articles contained values for these three compounds. Therefore a separate table for their contents in foods was prepared.

The completed database contains three files;

1. Isfl_tble (isoflavone_table) is the table of analytical isoflavone values.
2. Isfl_ref (isoflavone_references) is a list of references/studies from which isoflavone values were obtained.
3. CBF_tble is the table of analytical Coumestrol, BiochaninA and Formonetin values.

# Isfl_tbl - Analytical Isoflavone Values for Foods

Isfl_tble contains isoflavone values for 128 foods.
The fields in the table are as follows:

| | |
|---|---|
| NDB | USDA Nutrient Data Bank Number[1] |
| Desc | Food description |
| NutrDesc | Name of the isoflavone |
| Dein | Daidzein |
| Gein | Genistein |
| Glein | Glycitein |
| Total Isofl. | Isoflavone total [2] |
| Mean | Mean value (mg/100g edible portion) |
| SEM | Standard error of the mean |
| #S | Number of means/individual values [3] |
| Min | Minimum value (mg/100g edible portion) |
| Max | Maximum value (mg/100g edible portion) |
| CC | Confidence Code [4] |
| Reference. No. | Reference(s) from which isoflavone values were obtained [5] |

Footnotes:
[1]The NDB number is a five-digit numerical code used in the USDA Nutrient Database for Standard Reference, the electronic version of Agriculture Handbook No. 8, which can be downloaded from this site. Foods in the Isoflavone Database which do not have corresponding entries in the USDA Nutrient Database for Standard Reference, are given tentative NDB numbers starting with '99---". For more information on these files contact the Nutrient Data Laboratory, 4700 River Road, Unit 89, Riverdale, MD 20737. Tel. 301-734-8491.

[2] Values in the Total isoflavones column may not agree with the simple additions of the mean individual isoflavone values. Several articles did not report Glycitein values. Glycitein contributes only about 5% to 10% of the total content. Therefore if an article reported values for at least Daidzein and Genistein, then the total value for that food was calculated.

[3]#S is the total number of means/individual values used to compute the data in the Isoflavones Database. In the scientific literature each value can be a mean of many values (depending on the number of samples used in the study) or an individual value. Furthermore there may be more than one value for a single food in one reference. As a result, the total number of references may not equal #S. Since the data have been compiled from various sources, #S does not necessarily equal "n" in statistical terms.

[4]The Confidence Code designated as a, b, or c is a general indicator of the quality of the data (a=best). The procedure for determining confidence codes is described in Mangels, et al. (J. Am. Diet. Assoc. 93:284-296, 1993).

[5]Documentation for each reference can be found in the Isfl_ref file.

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## CBF_tbl - Analytical Coumestrol, Biochanin A, Formononetin values for Foods

CBF_tble contains individual values for Coumestrol, Biochanin A and Formononetin for 41 foods. The fields in this table: NDB, and Ref. No. are the same as in the file, Isfl_tbl.

## Isfl_ref - Isoflavones References

Isfl_ref provides a list of 38 references from which values for the Isoflavones Database were obtained. The reference numbers from the reference file correspond with the Ref. No. Column. All references list authors, title, journal citation and the foods and isoflavones analyzed.

(Units = mg/100 g edible portion for Mean, Standard error of the mean (SEM), Min, and Max; #S = the total number of means/individual values; CC=Confidence code)

| NDB No | Description | NutrDesc | Mean | SEM | #S | Min | Max | CC | Reference No. |
|---|---|---|---|---|---|---|---|---|---|
| 99001 | 9-grain bread | Daidzein | 0.01 | | 1 | 0.01 | 0.01 | c | 19 |
| | | Genistein | 0.01 | | 1 | 0.01 | 0.01 | c | 19 |
| | | Total Isofl. | 0.02 | | 1 | 0.02 | 0.02 | c | 19 |
| 11001 | Alfalfa seeds, sprouted, raw | Daidzein | 0.00 | | 2 | 0.00 | 0.00 | b | 11, 21 |
| | | Genistein | 0.00 | | 2 | 0.00 | 0.00 | b | 11, 21 |
| | | Glycitein | 0.00 | | 1 | 0.00 | 0.00 | c | 21 |
| | | Total Isofl. | 0.00 | | 2 | 0.00 | 0.00 | b | 11, 21 |
| 99003 | Alfalfa seeds, sprouted, raw, mixed with clover seeds, sprouted, raw | Daidzein | 0.00 | | 1 | 0.00 | 0.00 | c | 21 |
| | | Genistein | 0.00 | | 1 | 0.00 | 0.00 | c | 21 |
| | | Glycitein | 0.00 | | 1 | 0.00 | 0.00 | c | 21 |
| | | Total Isofl. | 0.00 | | 1 | 0.00 | 0.00 | c | 21 |
| 16104 | Bacon, meatless | Daidzein | 2.80 | | 1 | 2.80 | 2.80 | c | 36 |
| | | Genistein | 6.90 | | 1 | 6.90 | 6.90 | c | 36 |
| | | Glycitein | 2.40 | | 1 | 2.40 | 2.40 | c | 36 |
| | | Total Isofl. | 12.10 | | 1 | 12.10 | 12.10 | c | 36 |
| 16014 | Beans, black, mature seeds, raw | Daidzein | 0.00 | | 1 | 0.00 | 0.00 | c | 11 |
| | | Genistein | 0.00 | | 1 | 0.00 | 0.00 | c | 11 |
| | | Total Isofl. | 0.00 | | 1 | 0.00 | 0.00 | c | 11 |
| 16024 | Beans, great northern, mature seeds, raw | Daidzein | 0.00 | | 1 | 0.00 | 0.00 | c | 11 |
| | | Genistein | 0.00 | | 1 | 0.00 | 0.00 | c | 11 |
| | | Total Isofl. | 0.00 | | 1 | 0.00 | 0.00 | c | 11 |
| 16028 | Beans, kidney, all types, mature seeds, cooked, boiled, without salt | Daidzein | 0.00 | | 1 | 0.00 | 0.00 | c | 11 |
| | | Genistein | 0.00 | | 1 | 0.00 | 0.00 | c | 11 |
| | | Total Isofl. | 0.00 | | 1 | 0.00 | 0.00 | c | 11 |
| 16027 | Beans, kidney, all types, mature seeds, raw | Daidzein | 0.02 | | 2 | 0.01 | 0.02 | b | 17 |
| | | Genistein | 0.04 | | 2 | 0.02 | 0.06 | b | 17 |
| | | Total Isofl. | 0.06 | | 2 | 0.03 | 0.08 | b | 17 |

(Units = mg/100 g edible portion for Mean, Standard error of the mean (SEM), Min, and Max; #S = the total number of means/individual values; CC=Confidence code)

| NDB No | Description | NutrDesc | Mean | SEM | #S | Min | Max | CC | Reference No. |
|---|---|---|---|---|---|---|---|---|---|
| 16033 | Beans, kidney, red, mature seeds, cooked, boiled, without salt | Daidzein | 0.00 | | 1 | 0.00 | 0.00 | c | 11 |
| | | Genistein | 0.00 | | 1 | 0.00 | 0.00 | c | 11 |
| | | Total Isofl. | 0.00 | | 1 | 0.00 | 0.00 | c | 11 |
| 16032 | Beans, kidney, red, mature seeds, raw | Daidzein | 0.01 | | 1 | 0.01 | 0.01 | c | 17 |
| | | Genistein | 0.00 | | 1 | 0.00 | 0.00 | c | 17 |
| | | Total Isofl. | 0.01 | | 1 | 0.01 | 0.01 | c | 17 |
| 16037 | Beans, navy, mature seeds, raw | Daidzein | 0.01 | | 2 | 0.00 | 0.01 | c | 11, 17 |
| | | Genistein | 0.20 | | 2 | 0.00 | 0.41 | c | 11, 17 |
| | | Total Isofl. | 0.21 | | 2 | 0.00 | 0.42 | c | 11, 17 |
| 16040 | Beans, pink, mature seeds, raw | Daidzein | 0.00 | | 1 | 0.00 | 0.00 | c | 11 |
| | | Genistein | 0.00 | | 1 | 0.00 | 0.00 | c | 11 |
| | | Total Isofl. | 0.00 | | 1 | 0.00 | 0.00 | c | 11 |
| 16042 | Beans, pinto, mature seeds, raw | Daidzein | 0.01 | | 2 | 0.00 | 0.02 | c | 11, 17 |
| | | Genistein | 0.26 | | 2 | 0.00 | 0.52 | c | 11, 17 |
| | | Total Isofl. | 0.27 | | 2 | 0.00 | 0.54 | c | 11, 17 |
| 99026 | Beans, red, mature seeds, raw | Daidzein | 0.00 | | 1 | 0.00 | 0.00 | c | 11 |
| | | Genistein | 0.31 | | 1 | 0.31 | 0.31 | c | 11 |
| | | Total Isofl. | 0.31 | | 1 | 0.31 | 0.31 | c | 11 |
| 16045 | Beans, small white, mature seeds, raw | Daidzein | 0.00 | | 1 | 0.00 | 0.00 | c | 11 |
| | | Genistein | 0.74 | | 1 | 0.74 | 0.74 | c | 11 |
| | | Total Isofl. | 0.74 | | 1 | 0.74 | 0.74 | c | 11 |
| 11053 | Beans, snap, green, cooked, boiled, drained, without salt | Daidzein | 0.00 | | 1 | 0.00 | 0.00 | c | 11 |
| | | Genistein | 0.00 | | 1 | 0.00 | 0.00 | c | 11 |
| | | Total Isofl. | 0.00 | | 1 | 0.00 | 0.00 | c | 11 |
| 11052 | Beans, snap, green, raw | Daidzein | 0.00 | | 1 | 0.00 | 0.00 | c | 11 |
| | | Genistein | 0.00 | | 1 | 0.00 | 0.00 | c | 11 |
| | | Total Isofl. | 0.00 | | 1 | 0.00 | 0.00 | c | 11 |

(Units = mg/100 g edible portion for Mean, Standard error of the mean (SEM), Min, and Max; #S = the total number of means/individual values; CC=Confidence code)

| NDB No | Description | NutrDesc | Mean | SEM | #S | Min | Max | CC | Reference No. |
|---|---|---|---|---|---|---|---|---|---|
| 16052 | Broadbeans (fava beans), mature seeds, raw | Daidzein | 0.02 | | 1 | 0.02 | 0.02 | c | 17 |
| | | Genistein | 0.00 | | 2 | 0.00 | 0.00 | c | 12, 17 |
| | | Total Isofl. | 0.03 | | 1 | 0.03 | 0.03 | c | 17 |
| 99008 | Broadbeans, fried | Daidzein | 0.00 | | 1 | 0.00 | 0.00 | c | 11 |
| | | Genistein | 1.29 | | 1 | 1.29 | 1.29 | c | 11 |
| | | Total Isofl. | 1.29 | | 1 | 1.29 | 1.29 | c | 11 |
| 16056 | Chickpeas (garbanzo beans, bengal gram), mature seeds, raw | Daidzein | 0.04 | | 2 | 0.00 | 0.08 | c | 11, 17 |
| | | Genistein | 0.06 | | 2 | 0.00 | 0.12 | c | 11, 17 |
| | | Total Isofl. | 0.10 | | 2 | 0.00 | 0.20 | c | 11, 17 |
| 99009 | Clover sprouts, raw | Daidzein | 0.00 | | 1 | 0.00 | 0.00 | c | 11 |
| | | Genistein | 0.35 | | 1 | 0.35 | 0.35 | c | 11 |
| | | Total Isofl. | 0.35 | | 1 | 0.35 | 0.35 | c | 11 |
| 99010 | Country rye bread, Finland | Daidzein | 0.00 | | 1 | 0.00 | 0.00 | c | 19 |
| | | Genistein | 0.00 | | 1 | 0.00 | 0.00 | c | 19 |
| | | Total Isofl. | 0.00 | | 1 | 0.00 | 0.00 | c | 19 |
| 16062 | Cowpeas, common (blackeyes, crowder, southern), mature seeds, raw | Daidzein | 0.01 | | 2 | 0.00 | 0.03 | c | 11, 17 |
| | | Genistein | 0.02 | | 2 | 0.00 | 0.03 | c | 11, 17 |
| | | Total Isofl. | 0.03 | | 2 | 0.00 | 0.06 | c | 11, 17 |
| 18216 | Crackers, crispbread, rye | Daidzein | 0.01 | 0.00 | 3 | 0.00 | 0.01 | b | 19 |
| | | Genistein | 0.01 | 0.00 | 3 | 0.00 | 0.01 | b | 19 |
| | | Total Isofl. | 0.01 | 0.00 | 3 | 0.00 | 0.02 | b | 19 |
| 12220 | Flax seed, raw | Daidzein | 0.00 | | 1 | 0.00 | 0.00 | c | 19 |
| | | Genistein | 0.00 | | 1 | 0.00 | 0.00 | c | 19 |
| | | Total Isofl. | 0.00 | | 1 | 0.00 | 0.00 | c | 19 |
| 16173 | Frichick (meatless chicken nuggets), canned, cooked | Daidzein | 4.35 | | 1 | 4.35 | 4.35 | c | 21 |
| | | Genistein | 9.35 | | 1 | 9.35 | 9.35 | c | 21 |
| | | Glycitein | 0.90 | | 1 | 0.90 | 0.90 | c | 21 |
| | | Total Isofl. | 14.60 | | 1 | 14.60 | 14.60 | c | 21 |
| 16172 | Frichick (meatless | Daidzein | 3.45 | | 1 | 3.45 | 3.45 | c | 21 |

(Units = mg/100 g edible portion for Mean, Standard error of the mean (SEM), Min, and Max; #S = the total number of means/individual values; CC=Confidence code)

| NDB No | Description | NutrDesc | Mean | SEM | #S | Min | Max | CC | Reference No. |
|---|---|---|---|---|---|---|---|---|---|
| | chicken nuggets), canned, raw | Genistein | 7.90 | | 1 | 7.90 | 7.90 | c | 21 |
| | | Glycitein | 0.85 | | 1 | 0.85 | 0.85 | c | 21 |
| | | Total Isofl. | 12.20 | | 1 | 12.20 | 12.20 | c | 21 |
| 22125 | GREEN GIANT, HARVEST BURGER, Original Flavor, All Vegetable Protein Patties, frozen | Daidzein | 2.95 | | 1 | 2.95 | 2.95 | c | 21 |
| | | Genistein | 5.28 | | 1 | 5.28 | 5.28 | c | 21 |
| | | Glycitein | 1.07 | | 1 | 1.07 | 1.07 | c | 21 |
| | | Total Isofl. | 9.30 | | 1 | 9.30 | 9.30 | c | 21 |
| 22117 | GREEN GIANT, HARVEST BURGER, Original Flavor, All Vegetable Protein Patties, frozen, prepared | Daidzein | 2.58 | | 1 | 2.58 | 2.58 | c | 21 |
| | | Genistein | 4.68 | | 1 | 4.68 | 4.68 | c | 21 |
| | | Glycitein | 0.95 | | 1 | 0.95 | 0.95 | c | 21 |
| | | Total Isofl. | 8.22 | | 1 | 8.22 | 8.22 | c | 21 |
| 03931 | Infant formula, ENFAMIL NEXT STEP, powder, soy formula, not reconstituted | Daidzein | 7.23 | | 2 | 7.15 | 7.30 | b | 22, 23 |
| | | Genistein | 14.75 | | 2 | 14.50 | 15.00 | b | 22, 23 |
| | | Glycitein | 3.00 | | 2 | 2.95 | 3.05 | b | 22, 23 |
| | | Total Isofl. | 25.00 | | 2 | 24.90 | 25.10 | b | 22, 23 |
| 03863 | Infant formula, MEAD JOHNSON, GERBER soy, with iron, powder, not reconstituted | Daidzein | 8.08 | | 2 | 6.50 | 9.65 | b | 22, 23 |
| | | Genistein | 13.90 | | 2 | 12.80 | 15.00 | b | 22, 23 |
| | | Glycitein | 3.12 | | 2 | 2.93 | 3.30 | b | 22, 23 |
| | | Total Isofl. | 25.09 | | 2 | 22.23 | 27.95 | b | 22, 23 |
| 03824 | Infant formula, MEAD JOHNSON, PROSOBEE, with iron, liquid concentrate, not reconstituted | Daidzein | 1.10 | | 1 | 1.10 | 1.10 | c | 26 |
| | | Genistein | 2.22 | | 1 | 2.22 | 2.22 | c | 26 |
| | | Total Isofl. | 6.03 | | 2 | 3.32 | 8.75 | c | 26, 31 |
| 03826 | Infant formula, MEAD JOHNSON, PROSOBEE, with iron, powder, not reconstituted | Daidzein | 7.05 | | 2 | 6.90 | 7.20 | b | 22, 23 |
| | | Genistein | 14.94 | | 2 | 14.45 | 15.43 | b | 22, 23 |
| | | Glycitein | 2.95 | | 2 | 2.83 | 3.07 | b | 22, 23 |
| | | Total Isofl. | 24.94 | | 2 | 24.18 | 25.70 | b | 22, 23 |
| 03823 | Infant formula, MEAD JOHNSON, PROSOBEE, | Daidzein | 1.71 | | 1 | 1.71 | 1.71 | c | 32 |
| | | Genistein | 2.18 | | 1 | 2.18 | 2.18 | c | 32 |

(Units = mg/100 g edible portion for Mean, Standard error of the mean (SEM), Min, and Max; #S = the total number of means/individual values; CC=Confidence code)

| NDB No | Description | NutrDesc | Mean | SEM | #S | Min | Max | CC | Reference No. |
|---|---|---|---|---|---|---|---|---|---|
| | with iron, ready-to-feed | Total Isofl. | 3.89 | | 1 | 3.89 | 3.89 | c | 32 |
| 03843 | Infant formula, ROSS, ISOMIL, with iron, powder, not reconstituted | Daidzein | 6.03 | | 2 | 6.03 | 6.03 | b | 22, 23 |
| | | Genistein | 12.23 | | 2 | 11.43 | 13.03 | b | 22, 23 |
| | | Glycitein | 2.73 | | 2 | 2.70 | 2.77 | b | 22, 23 |
| | | Total Isofl. | 20.99 | | 2 | 20.16 | 21.83 | b | 22, 23 |
| 99112 | Infant formula, ROSS, ISOMIL, with iron, powder, reconstituted from powder, as fed | Daidzein | 0.78 | | 1 | 0.78 | 0.78 | | 39 |
| | | Genistein | 1.58 | | 1 | 1.58 | 1.58 | | 39 |
| | | Glycitein | 0.35 | | 1 | 0.35 | 0.35 | | 39 |
| | | Total Isofl. | 2.71 | | 1 | 2.71 | 2.71 | | 39 |
| 03841 | Infant formula, ROSS, ISOMIL, with iron, ready-to-feed | Daidzein | 1.91 | | 1 | 1.91 | 1.91 | c | 32 |
| | | Genistein | 2.26 | | 1 | 2.26 | 2.26 | c | 32 |
| | | Total Isofl. | 4.17 | | 1 | 4.17 | 4.17 | c | 32 |
| 03891 | Infant formula, WYETH-AYERST, NURSOY, with iron, liquid concentrate, not reconstituted | Daidzein | 1.02 | | 2 | 0.79 | 1.25 | b | 22, 26 |
| | | Genistein | 2.82 | | 2 | 2.19 | 3.45 | b | 22, 26 |
| | | Glycitein | 0.35 | | 1 | 0.35 | 0.35 | c | 22 |
| | | Total Isofl. | 4.02 | | 2 | 2.98 | 5.05 | b | 22, 26 |
| 03893 | Infant formula, WYETH-AYERST, NURSOY, with iron, powder, not reconstituted | Daidzein | 5.70 | | 1 | 5.70 | 5.70 | c | 22 |
| | | Genistein | 13.55 | | 1 | 13.55 | 13.55 | c | 22 |
| | | Glycitein | 2.05 | | 1 | 2.05 | 2.05 | c | 22 |
| | | Total Isofl. | 26.00 | | 2 | 21.30 | 30.70 | b | 22, 31 |
| 03890 | Infant formula, WYETH-AYERST, NURSOY, with iron, ready-to-feed | Daidzein | 0.75 | | 1 | 0.75 | 0.75 | c | 23 |
| | | Genistein | 1.60 | | 1 | 1.60 | 1.60 | c | 23 |
| | | Glycitein | 0.28 | | 1 | 0.28 | 0.28 | c | 23 |
| | | Total Isofl. | 2.63 | | 1 | 2.63 | 2.63 | c | 23 |
| 99018 | Instant beverage, soy, powder, not reconstituted | Daidzein | 40.07 | 6.19 | 6 | 29.50 | 70.00 | a | 5, 36, 38 |
| | | Genistein | 62.18 | 2.78 | 6 | 55.00 | 73.15 | a | 5, 36, 38 |
| | | Glycitein | 10.90 | 0.14 | 4 | 10.50 | 11.10 | b | 36 |
| | | Total Isofl. | 109.51 | 4.11 | 6 | 100.10 | 125.00 | a | 5, 36, 38 |
| 99019 | Kala chana, mature seeds, | Daidzein | 0.00 | | 1 | 0.00 | 0.00 | c | 11 |

(Units = mg/100 g edible portion for Mean, Standard error of the mean (SEM), Min, and Max; #S = the total number of means/individual values; CC=Confidence code)

| NDB No | Description | NutrDesc | Mean | SEM | #S | Min | Max | CC | Reference No. |
|---|---|---|---|---|---|---|---|---|---|
| | raw | Genistein | 0.64 | | 1 | 0.64 | 0.64 | c | 11 |
| | | Total Isofl. | 0.64 | | 1 | 0.64 | 0.64 | c | 11 |
| 99020 | Lapacho tea (Tecoma heptaphylla) | Daidzein | 0.02 | | 1 | 0.02 | 0.02 | c | 19 |
| | | Genistein | 0.03 | | 1 | 0.03 | 0.03 | c | 19 |
| | | Total Isofl. | 0.05 | | 1 | 0.05 | 0.05 | c | 19 |
| 16069 | Lentils, mature seeds, raw | Daidzein | 0.00 | 0.00 | 3 | 0.00 | 0.01 | b | 11, 17 |
| | | Genistein | 0.00 | 0.00 | 3 | 0.00 | 0.01 | b | 11, 17 |
| | | Total Isofl. | 0.01 | 0.01 | 3 | 0.00 | 0.02 | b | 11, 17 |
| 16072 | Lima beans, large, mature seeds, cooked, boiled, without salt | Daidzein | 0.00 | | 1 | 0.00 | 0.00 | c | 11 |
| | | Genistein | 0.00 | | 1 | 0.00 | 0.00 | c | 11 |
| | | Total Isofl. | 0.00 | | 1 | 0.00 | 0.00 | c | 11 |
| 16071 | Lima beans, large, mature seeds, raw | Daidzein | 0.02 | | 2 | 0.00 | 0.04 | c | 11, 17 |
| | | Genistein | 0.01 | | 2 | 0.00 | 0.01 | c | 11, 17 |
| | | Total Isofl. | 0.03 | | 2 | 0.00 | 0.05 | c | 11, 17 |
| 16074 | Lima beans, thin seeded (baby), mature seeds, raw | Daidzein | 0.00 | | 1 | 0.00 | 0.00 | c | 11 |
| | | Genistein | 0.00 | | 1 | 0.00 | 0.00 | c | 11 |
| | | Total Isofl. | 0.00 | | 1 | 0.00 | 0.00 | c | 11 |
| 16112 | Miso | Daidzein | 16.13 | 4.36 | 7 | 7.10 | 36.64 | a | 5, 15, 21, 36 |
| | | Genistein | 24.56 | 4.23 | 9 | 11.70 | 52.39 | a | 5, 12, 15, 21, 36 |
| | | Glycitein | 2.87 | 0.47 | 3 | 2.30 | 3.80 | b | 21, 36 |
| | | Total Isofl. | 42.55 | 9.18 | 7 | 22.70 | 89.20 | a | 5, 15, 21, 36 |
| 99002 | Miso soup mix, dry | Daidzein | 24.93 | | 2 | 20.75 | 29.11 | c | 5 |
| | | Genistein | 35.46 | | 2 | 33.69 | 37.24 | c | 5 |
| | | Total Isofl. | 60.39 | | 2 | 54.44 | 66.35 | c | 5 |
| 16080 | Mung beans, mature seeds, raw | Daidzein | 0.01 | | 2 | 0.00 | 0.01 | c | 11, 17 |
| | | Genistein | 0.18 | | 2 | 0.00 | 0.37 | c | 11, 17 |
| | | Total Isofl. | 0.19 | | 2 | 0.00 | 0.38 | c | 11, 17 |
| 16083 | Mungo beans, mature | Daidzein | 0.01 | | 2 | 0.00 | 0.02 | c | 11, 17 |

(Units = mg/100 g edible portion for Mean, Standard error of the mean (SEM), Min, and Max; #S = the total number of means/individual values; CC=Confidence code)

| NDB No | Description | NutrDesc | Mean | SEM | #S | Min | Max | CC | Reference No. |
|---|---|---|---|---|---|---|---|---|---|
| | seeds, raw | Genistein | 0.01 | | 2 | 0.00 | 0.03 | c | 11, 17 |
| | | Total Isofl. | 0.03 | | 2 | 0.00 | 0.05 | c | 11, 17 |
| 16113 | Natto (soybeans, boiled and fermented) | Daidzein | 21.85 | 2.69 | 5 | 16.02 | 31.46 | a | 21, 24 |
| | | Genistein | 29.04 | 3.01 | 7 | 21.52 | 42.53 | a | 12, 21, 24 |
| | | Glycitein | 8.17 | 1.21 | 5 | 6.89 | 13.01 | a | 21, 24 |
| | | Total Isofl. | 58.93 | 7.38 | 5 | 46.40 | 86.99 | a | 21, 24 |
| 42299 | Oil, canola and soybean | Daidzein | 0.00 | | 1 | 0.00 | 0.00 | c | 21 |
| | | Genistein | 0.00 | | 1 | 0.00 | 0.00 | c | 21 |
| | | Glycitein | 0.00 | | 1 | 0.00 | 0.00 | c | 21 |
| | | Total Isofl. | 0.00 | | 1 | 0.00 | 0.00 | c | 21 |
| 04044 | Oil, soybean, salad or cooking | Daidzein | 0.00 | 0.00 | 3 | 0.00 | 0.00 | a | 21 |
| | | Genistein | 0.00 | 0.00 | 3 | 0.00 | 0.00 | a | 21 |
| | | Glycitein | 0.00 | 0.00 | 3 | 0.00 | 0.00 | a | 21 |
| | | Total Isofl. | 0.00 | 0.00 | 3 | 0.00 | 0.00 | a | 21 |
| 16087 | Peanuts, all types, raw | Daidzein | 0.03 | | 2 | 0.01 | 0.05 | b | 17 |
| | | Genistein | 0.24 | | 2 | 0.08 | 0.39 | b | 17 |
| | | Total Isofl. | 0.26 | | 2 | 0.13 | 0.39 | b | 17 |
| 16085 | Peas, split, mature seeds, raw | Daidzein | 2.42 | 2.42 | 3 | 0.00 | 7.26 | b | 11, 17 |
| | | Genistein | 0.00 | 0.00 | 3 | 0.00 | 0.01 | b | 11, 17 |
| | | Total Isofl. | 2.42 | 2.42 | 3 | 0.00 | 7.26 | b | 11, 17 |
| 16101 | Pigeon peas (red gram), mature seeds, raw | Daidzein | 0.02 | | 1 | 0.02 | 0.02 | c | 17 |
| | | Genistein | 0.54 | | 1 | 0.54 | 0.54 | c | 17 |
| | | Total Isofl. | 0.56 | | 1 | 0.56 | 0.56 | c | 17 |
| 19015 | Snacks, granola bars, hard, plain | Daidzein | 0.05 | | 1 | 0.05 | 0.05 | c | 19 |
| | | Genistein | 0.08 | | 1 | 0.08 | 0.08 | c | 19 |
| | | Total Isofl. | 0.13 | | 1 | 0.13 | 0.13 | c | 19 |
| 99105 | Soybean butter, full fat, Worthington Foods, Inc. | Daidzein | 22.00 | | 1 | 22.00 | 22.00 | c | 24 |
| | | Genistein | 30.00 | | 1 | 30.00 | 30.00 | c | 24 |
| | | Glycitein | 5.00 | | 1 | 5.00 | 5.00 | c | 24 |

(Units = mg/100 g edible portion for Mean, Standard error of the mean (SEM), Min, and Max; #S = the total number of means/individual values; CC=Confidence code)

| NDB No | Description | NutrDesc | Mean | SEM | #S | Min | Max | CC | Reference No. |
|---|---|---|---|---|---|---|---|---|---|
| | | Total Isofl. | 57.00 | | 1 | 57.00 | 57.00 | c | 24 |
| 99042 | Soy cheese, unspecified | Daidzein | 11.24 | | 2 | 1.38 | 21.10 | c | 5, 10 |
| | | Genistein | 20.08 | | 2 | 1.95 | 38.20 | c | 5, 10 |
| | | Total Isofl. | 31.32 | | 2 | 3.33 | 59.30 | c | 5, 10 |
| 99041 | Soy cheese, cheddar | Daidzein | 1.80 | | 2 | 0.20 | 3.40 | c | 36 |
| | | Genistein | 2.25 | | 2 | 0.50 | 4.00 | c | 36 |
| | | Glycitein | 3.10 | | 2 | 2.70 | 3.50 | c | 36 |
| | | Total Isofl. | 7.15 | | 2 | 3.40 | 10.90 | c | 36 |
| 99054 | Soy cheese, mozzarella | Daidzein | 1.10 | | 1 | 1.10 | 1.10 | c | 36 |
| | | Genistein | 3.60 | | 1 | 3.60 | 3.60 | c | 36 |
| | | Glycitein | 3.00 | | 1 | 3.00 | 3.00 | c | 36 |
| | | Total Isofl. | 7.70 | | 1 | 7.70 | 7.70 | c | 36 |
| 99056 | Soy cheese, parmesan | Daidzein | 1.50 | | 1 | 1.50 | 1.50 | c | 36 |
| | | Genistein | 0.80 | | 1 | 0.80 | 0.80 | c | 36 |
| | | Glycitein | 4.10 | | 1 | 4.10 | 4.10 | c | 36 |
| | | Total Isofl. | 6.40 | | 1 | 6.40 | 6.40 | c | 36 |
| 99043 | Soy drink | Daidzein | 2.41 | | 2 | 0.70 | 4.12 | c | 6, 26 |
| | | Genistein | 4.60 | | 2 | 2.10 | 7.10 | c | 6, 26 |
| | | Total Isofl. | 7.01 | | 2 | 2.80 | 11.22 | c | 6, 26 |
| 99045 | Soy fiber | Daidzein | 18.80 | | 2 | 16.58 | 21.03 | c | 5, 20 |
| | | Genistein | 21.68 | | 2 | 17.11 | 26.26 | c | 5, 20 |
| | | Glycitein | 7.90 | | 1 | 7.90 | 7.90 | c | 20 |
| | | Total Isofl. | 44.43 | | 2 | 38.13 | 50.73 | c | 5, 20 |
| 99080 | Soy flour (textured) | Daidzein | 59.62 | 12.18 | 8 | 1.65 | 123.25 | a | 20, 26, 32, 36 |
| | | Genistein | 78.90 | 14.75 | 8 | 2.75 | 144.02 | a | 20, 26, 32, 36 |
| | | Glycitein | 20.19 | 2.87 | 4 | 15.60 | 28.28 | b | 20, 36 |
| | | Total Isofl. | 148.61 | 28.71 | 8 | 4.40 | 295.55 | a | 20, 26, 32, 36 |
| 16117 | Soy flour, defatted | Daidzein | 57.47 | 9.28 | 9 | 22.60 | 93.90 | a | 5, 27, 28, 33, 35, 36 |

(Units = mg/100 g edible portion for Mean, Standard error of the mean (SEM), Min, and Max; #S = the total number of means/individual values; CC=Confidence code)

| NDB No | Description | NutrDesc | Mean | SEM | #S | Min | Max | CC | Reference No. |
|---|---|---|---|---|---|---|---|---|---|
| | | Genistein | 71.21 | 5.54 | 9 | 46.51 | 100.54 | a | 5, 27, 28, 33, 35, 36 |
| | | Glycitein | 7.55 | 1.82 | 3 | 3.95 | 9.89 | c | 33, 35, 36 |
| | | Total Isofl. | 131.19 | 11.25 | 9 | 73.72 | 168.09 | a | 5, 27, 28, 33, 35, 36 |
| 16115 | Soy flour, full-fat, raw | Daidzein | 71.19 | 6.95 | 20 | 18.20 | 130.92 | a | 7, 10, 11, 19, 20, 25, 26, 28, 35 |
| | | Genistein | 96.83 | 7.38 | 21 | 6.39 | 145.23 | a | 7, 10, 11, 19, 20, 25, 26, 28, 35 |
| | | Glycitein | 16.18 | 2.65 | 7 | 4.80 | 24.83 | a | 7, 10, 20, 25, 35 |
| | | Total Isofl. | 177.89 | 12.57 | 20 | 59.80 | 264.84 | a | 7, 10, 11, 19, 20, 25, 26, 28, 35 |
| 16116 | Soy flour, full-fat, roasted | Daidzein | 99.27 | 10.01 | 3 | 87.65 | 119.20 | c | 1, 5, 21 |
| | | Genistein | 98.75 | 16.21 | 3 | 70.74 | 126.90 | c | 1, 5, 21 |
| | | Glycitein | 16.40 | | 2 | 14.40 | 18.40 | c | 1, 21 |
| | | Total Isofl. | 208.95 | 37.29 | 3 | 161.70 | 260.50 | c | 1, 5, 21 |
| 99111 | Soy hot dog, frozen, unprepared | Daidzein | 3.40 | | 1 | 3.40 | 3.40 | c | 36 |
| | | Genistein | 8.20 | | 1 | 8.20 | 8.20 | c | 36 |
| | | Glycitein | 3.40 | | 1 | 3.40 | 3.40 | c | 36 |
| | | Total Isofl. | 15.00 | | 1 | 15.00 | 15.00 | c | 36 |
| 16119 | Soy meal, defatted, raw | Daidzein | 57.47 | | 1 | 57.47 | 57.47 | c | 34 |
| | | Genistein | 68.35 | | 1 | 68.35 | 68.35 | c | 34 |
| | | Total Isofl. | 125.82 | | 1 | 125.82 | 125.82 | c | 34 |
| 16120 | Soymilk, fluid | Daidzein | 4.45 | 0.75 | 14 | 1.14 | 9.84 | a | 1, 5, 10, 14, 15, 16, 21, 34, 35 |
| | | Genistein | 6.06 | 0.84 | 16 | 1.12 | 11.28 | a | 1, 5, 10, 12, 14, 15, 16, 21, 34, 35 |

(Units = mg/100 g edible portion for Mean, Standard error of the mean (SEM), Min, and Max; #S = the total number of means/individual values; CC=Confidence code)

| NDB No | Description | NutrDesc | Mean | SEM | #S | Min | Max | CC | Reference No. |
|---|---|---|---|---|---|---|---|---|---|
| | | Glycitein | 0.56 | 0.09 | 5 | 0.36 | 0.86 | a | 1, 21, 35 |
| | | Total Isofl. | 9.65 | 1.76 | 14 | 1.26 | 21.13 | a | 1, 5, 10, 14, 15, 16, 21, 34, 35 |
| 99014 | Soymilk, iced | Daidzein | 1.90 | | 2 | 0.34 | 3.45 | c | 5 |
| | | Genistein | 2.81 | | 2 | 1.78 | 3.85 | c | 5 |
| | | Total Isofl. | 4.71 | | 2 | 2.12 | 7.31 | c | 5 |
| 99096 | Soymilk skin or film (Foo jook or yuba), cooked | Daidzein | 18.20 | | 1 | 18.20 | 18.20 | c | 10 |
| | | Genistein | 32.50 | | 1 | 32.50 | 32.50 | c | 10 |
| | | Total Isofl. | 50.70 | | 1 | 50.70 | 50.70 | c | 10 |
| 99053 | Soymilk skin or film (Foo jook or yuba), raw | Daidzein | 79.88 | | 2 | 43.76 | 116.00 | c | 10, 34 |
| | | Genistein | 104.80 | | 2 | 77.91 | 131.70 | c | 10, 34 |
| | | Glycitein | 18.40 | | 1 | 18.40 | 18.40 | c | 10 |
| | | Total Isofl. | 193.88 | | 2 | 121.66 | 266.10 | c | 10, 34 |
| 99049 | Soy noodles, flat | Daidzein | 0.90 | | 1 | 0.90 | 0.90 | c | 36 |
| | | Genistein | 3.70 | | 1 | 3.70 | 3.70 | c | 36 |
| | | Glycitein | 3.90 | | 1 | 3.90 | 3.90 | c | 36 |
| | | Total Isofl. | 8.50 | | 1 | 8.50 | 8.50 | c | 36 |
| 99038 | Soy paste | Daidzein | 15.03 | 3.79 | 6 | 3.00 | 27.20 | a | 5, 34, 36 |
| | | Genistein | 15.21 | 4.87 | 6 | 0.31 | 29.98 | a | 5, 34, 36 |
| | | Glycitein | 7.70 | | 1 | 7.70 | 7.70 | c | 36 |
| | | Total Isofl. | 31.52 | 9.26 | 6 | 3.31 | 59.40 | a | 5, 34, 36 |
| 99060 | Soy protein concentrate, aqueous washed | Daidzein | 43.04 | 24.04 | 3 | 16.68 | 91.05 | b | 5, 20 |
| | | Genistein | 55.59 | 10.60 | 3 | 40.29 | 75.95 | b | 5, 20 |
| | | Glycitein | 5.16 | | 2 | 4.27 | 6.05 | c | 20 |
| | | Total Isofl. | 102.07 | 32.82 | 3 | 61.23 | 167.00 | b | 5, 20 |
| 16121 | Soy protein concentrate, produced by alcohol extraction | Daidzein | 6.83 | 3.68 | 5 | 0.79 | 21.09 | a | 5, 20, 26 |
| | | Genistein | 5.33 | 1.69 | 5 | 1.29 | 10.73 | a | 5, 20, 26 |
| | | Glycitein | 1.57 | | 1 | 1.57 | 1.57 | c | 20 |
| | | Total Isofl. | 12.47 | 5.24 | 5 | 2.08 | 31.82 | a | 5, 20, 26 |

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| NDB No | Description | NutrDesc | Mean | SEM | #S | Min | Max | CC | Reference No. |
|---|---|---|---|---|---|---|---|---|---|
| 16122 | Soy protein isolate | Daidzein | 33.59 | 5.99 | 14 | 7.70 | 68.89 | a | 1, 4, 5, 10, 20, 30, 33, 35, 36 |
| | | Genistein | 59.62 | 6.68 | 14 | 27.17 | 105.10 | a | 1, 4, 5, 10, 20, 30, 33, 35, 36 |
| | | Glycitein | 9.47 | 1.81 | 11 | 5.40 | 26.40 | a | 1, 4, 20, 30, 35, 36 |
| | | Total Isofl. | 97.43 | 11.11 | 14 | 46.50 | 199.25 | a | 1, 4, 5, 10, 20, 30, 33, 35, 36 |
| 16125 | Soy sauce made from hydrolyzed vegetable protein | Daidzein | 0.10 | | 1 | 0.10 | 0.10 | c | 21 |
| | | Genistein | 0.00 | | 1 | 0.00 | 0.00 | c | 21 |
| | | Glycitein | 0.00 | | 1 | 0.00 | 0.00 | c | 21 |
| | | Total Isofl. | 0.10 | | 1 | 0.10 | 0.10 | c | 21 |
| 16123 | Soy sauce made from soy and wheat (shoyu) | Daidzein | 0.93 | 0.24 | 3 | 0.60 | 1.40 | b | 5, 21, 34 |
| | | Genistein | 0.82 | 0.21 | 5 | 0.30 | 1.54 | a | 5, 12, 21, 34 |
| | | Glycitein | 0.45 | | 1 | 0.45 | 0.45 | c | 21 |
| | | Total Isofl. | 1.64 | 0.33 | 3 | 1.27 | 2.30 | b | 5, 21, 34 |
| 99063 | Soy-based liquid formula for adults, ROSS, ENRICH | Daidzein | 0.14 | | 1 | 0.14 | 0.14 | c | 6 |
| | | Genistein | 0.40 | | 1 | 0.40 | 0.40 | c | 6 |
| | | Total Isofl. | 0.54 | | 1 | 0.54 | 0.54 | c | 6 |
| 99064 | Soy-based liquid formula for adults, ROSS, GLUCERNA | Daidzein | 0.02 | | 1 | 0.02 | 0.02 | c | 6 |
| | | Genistein | 0.06 | | 1 | 0.06 | 0.06 | c | 6 |
| | | Total Isofl. | 0.08 | | 1 | 0.08 | 0.08 | c | 6 |
| 99065 | Soy-based liquid formula for adults, ROSS, JEVITY ISOTONIC | Daidzein | 0.03 | | 1 | 0.03 | 0.03 | c | 6 |
| | | Genistein | 0.31 | | 1 | 0.31 | 0.31 | c | 6 |
| | | Total Isofl. | 0.34 | | 1 | 0.34 | 0.34 | c | 6 |
| 99072 | Soybean chips | Daidzein | 26.71 | | 1 | 26.71 | 26.71 | c | 5 |
| | | Genistein | 27.45 | | 1 | 27.45 | 27.45 | c | 5 |
| | | Total Isofl. | 54.16 | | 1 | 54.16 | 54.16 | c | 5 |
| 43299 | Soybean curd cheese | Daidzein | 9.00 | | 1 | 9.00 | 9.00 | c | 10 |
| | | Genistein | 19.20 | | 1 | 19.20 | 19.20 | c | 10 |

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| NDB No | Description | NutrDesc | Mean | SEM | #S | Min | Max | CC | Reference No. |
|---|---|---|---|---|---|---|---|---|---|
| | | Total Isofl. | 28.20 | | 1 | 28.20 | 28.20 | c | 10 |
| 99034 | Soybean, curd, fermented | Daidzein | 14.30 | | 1 | 14.30 | 14.30 | c | 36 |
| | | Genistein | 22.40 | | 1 | 22.40 | 22.40 | c | 36 |
| | | Glycitein | 2.30 | | 1 | 2.30 | 2.30 | c | 36 |
| | | Total Isofl. | 39.00 | | 1 | 39.00 | 39.00 | c | 36 |
| 99030 | Soybeans, Brazil, raw | Daidzein | 20.16 | 3.03 | 6 | 9.89 | 30.48 | b | 2 |
| | | Genistein | 67.47 | 13.40 | 6 | 28.28 | 110.98 | b | 2 |
| | | Total Isofl. | 87.63 | 14.51 | 6 | 42.54 | 141.46 | b | 2 |
| 99092 | Soybeans, Japan, raw | Daidzein | 34.52 | 11.49 | 7 | 13.40 | 100.65 | a | 11, 37 |
| | | Genistein | 64.78 | 13.04 | 8 | 13.00 | 138.24 | a | 11, 37 |
| | | Glycitein | 13.78 | 1.64 | 6 | 9.10 | 20.40 | b | 37 |
| | | Total Isofl. | 118.51 | 22.16 | 7 | 68.80 | 238.89 | a | 11, 37 |
| 99093 | Soybeans, Korea, raw | Daidzein | 72.68 | 6.12 | 18 | 21.00 | 124.20 | a | 3 |
| | | Genistein | 72.31 | 5.71 | 18 | 24.80 | 110.70 | a | 3 |
| | | Total Isofl. | 144.99 | 10.73 | 18 | 45.80 | 231.70 | a | 3 |
| 99040 | Soybeans, Taiwan, raw | Daidzein | 28.21 | | 1 | 28.21 | 28.21 | c | 11 |
| | | Genistein | 31.54 | | 1 | 31.54 | 31.54 | c | 11 |
| | | Total Isofl. | 59.75 | | 1 | 59.75 | 59.75 | c | 11 |
| 99035 | Soybeans, flakes, defatted | Daidzein | 36.97 | 8.61 | 9 | 13.92 | 88.04 | a | 7, 8, 14, 29, 30 |
| | | Genistein | 85.69 | 14.67 | 9 | 44.41 | 156.06 | a | 7, 8, 14, 29, 30 |
| | | Glycitein | 14.23 | | 2 | 1.71 | 26.76 | c | 7, 29 |
| | | Total Isofl. | 125.82 | 22.76 | 9 | 61.34 | 244.10 | a | 7, 8, 14, 29, 30 |
| 99036 | Soybeans, flakes, full-fat | Daidzein | 48.23 | | 2 | 22.10 | 74.35 | c | 7, 32 |
| | | Genistein | 79.98 | | 2 | 28.00 | 131.96 | c | 7, 32 |
| | | Glycitein | 1.57 | | 1 | 1.57 | 1.57 | c | 7 |
| | | Total Isofl. | 128.99 | | 2 | 50.10 | 207.89 | c | 7, 32 |
| 11451 | Soybeans, immature, | Daidzein | 6.85 | | 1 | 6.85 | 6.85 | c | 11 |

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| NDB No | Description | NutrDesc | Mean | SEM | #S | Min | Max | CC | Reference No. |
|---|---|---|---|---|---|---|---|---|---|
| | cooked, boiled, drained, without salt | Genistein | 6.94 | | 1 | 6.94 | 6.94 | c | 11 |
| | | Total Isofl. | 13.79 | | 1 | 13.79 | 13.79 | c | 11 |
| 11450 | Soybeans, immature, seeds, raw (includes edamame) | Daidzein | 9.27 | 1.62 | 3 | 6.62 | 12.20 | c | 10, 11, 24 |
| | | Genistein | 9.84 | 2.46 | 3 | 5.94 | 14.40 | c | 10, 11, 24 |
| | | Glycitein | 4.29 | | 1 | 1.29 | 4.29 | c | 24 |
| | | Total Isofl. | 20.54 | 3.13 | 3 | 16.85 | 26.60 | c | 10, 11, 24 |
| 99100 | Soybeans, green, mature seeds, raw | Daidzein | 67.79 | 4.58 | 4 | 54.60 | 75.35 | b | 24, 36 |
| | | Genistein | 72.51 | 6.84 | 4 | 62.65 | 91.72 | b | 24, 36 |
| | | Glycitein | 10.88 | 2.98 | 4 | 6.72 | 19.69 | b | 24, 36 |
| | | Total Isofl. | 151.17 | 12.00 | 4 | 135.40 | 186.76 | b | 24, 36 |
| 16109 | Soybeans, mature cooked, boiled, without salt | Daidzein | 26.95 | | 1 | 26.95 | 26.95 | c | 11 |
| | | Genistein | 27.71 | | 1 | 27.71 | 27.71 | c | 11 |
| | | Total Isofl. | 54.66 | | 1 | 54.66 | 54.66 | c | 11 |
| 16111 | Soybeans, mature seeds, dry roasted (includes soy nuts) | Daidzein | 67.45 | 13.76 | 7 | 53.60 | 86.00 | a | 5, 10, 11, 24, 36 |
| | | Genistein | 94.76 | 17.55 | 8 | 86.90 | 110.55 | a | 5, 10, 11, 12, 24, 36 |
| | | Glycitein | 13.36 | 11.87 | 5 | 0.00 | 30.70 | a | 10, 24, 36 |
| | | Total Isofl. | 176.94 | 16.69 | 7 | 151.00 | 201.90 | a | 5, 10, 11, 24, 36 |
| 16108 | Soybeans, mature seeds, raw (US, food quality) | Daidzein | 46.64 | 5.42 | 22 | 9.88 | 91.30 | a | 9, 10, 11, 17, 35, 36, 37 |
| | | Genistein | 73.76 | 6.80 | 22 | 20.67 | 134.10 | a | 9, 10, 11, 17, 35, 36, 37 |
| | | Glycitein | 10.88 | 0.74 | 16 | 4.80 | 16.70 | a | 10, 35, 36, 37 |
| | | Total Isofl. | 128.35 | 11.66 | 22 | 36.20 | 220.90 | a | 9, 10, 11, 17, 35, 36, 37 |
| 99091 | Soybeans, mature seeds, raw (US, commodity grade) | Daidzein | 52.20 | 5.30 | 14 | 20.74 | 79.23 | a | 7, 11, 34, 37 |
| | | Genistein | 91.71 | 9.26 | 14 | 42.79 | 150.10 | a | 7, 11, 34, 37 |
| | | Glycitein | 12.07 | 1.41 | 11 | 4.22 | 18.14 | a | 7, 37 |
| | | Total Isofl. | 153.40 | 14.80 | 14 | 71.93 | 237.00 | a | 7, 11, 34, 37 |

(Units = mg/100 g edible portion for Mean, Standard error of the mean (SEM), Min, and Max; #S = the total number of means/individual values; CC=Confidence code)

| NDB No | Description | NutrDesc | Mean | SEM | #S | Min | Max | CC | Reference No. |
|---|---|---|---|---|---|---|---|---|---|
| 11452 | Soybeans, mature seeds, sprouted, raw | Daidzein | 19.12 | 2.70 | 3 | 13.78 | 22.50 | c | 10, 34 |
| | | Genistein | 21.60 | 5.60 | 3 | 11.25 | 30.50 | c | 10, 34 |
| | | Total Isofl. | 40.71 | 8.25 | 3 | 25.03 | 53.00 | c | 10, 34 |
| 16167 | Soylinks, frozen, cooked, MORNING STAR breakfast | Daidzein | 0.75 | | 1 | 0.75 | 0.75 | c | 21 |
| | | Genistein | 2.70 | | 1 | 2.70 | 2.70 | c | 21 |
| | | Glycitein | 0.30 | | 1 | 0.30 | 0.30 | c | 21 |
| | | Total Isofl. | 3.75 | | 1 | 3.75 | 3.75 | c | 21 |
| 16166 | Soylinks, frozen,raw, MORNING STAR breakfast | Daidzein | 1.18 | | 1 | 1.18 | 1.18 | c | 21 |
| | | Genistein | 2.45 | | 1 | 2.45 | 2.45 | c | 21 |
| | | Glycitein | 0.30 | | 1 | 0.30 | 0.30 | c | 21 |
| | | Total Isofl. | 3.93 | | 1 | 3.93 | 3.93 | c | 21 |
| 02019 | Spices, fenugreek seed | Daidzein | 0.01 | | 1 | 0.01 | 0.01 | c | 17 |
| | | Genistein | 0.01 | | 1 | 0.01 | 0.01 | c | 17 |
| | | Total Isofl. | 0.02 | | 1 | 0.02 | 0.02 | c | 17 |
| 12036 | Sunflower seed kernels, dried | Daidzein | 0.00 | | 1 | 0.00 | 0.00 | c | 19 |
| | | Genistein | 0.00 | | 1 | 0.00 | 0.00 | c | 19 |
| | | Total Isofl. | 0.00 | | 1 | 0.00 | 0.00 | c | 19 |
| 99107 | Tea, green, Japan | Daidzein | 0.01 | | 1 | 0.01 | 0.01 | c | 18 |
| | | Genistein | 0.04 | | 1 | 0.04 | 0.04 | c | 18 |
| | | Total Isofl. | 0.05 | | 1 | 0.05 | 0.05 | c | 18 |
| 99106 | Tea, jasmine, Twinings | Daidzein | 0.01 | | 1 | 0.01 | 0.01 | c | 18 |
| | | Genistein | 0.03 | | 1 | 0.03 | 0.03 | c | 18 |
| | | Total Isofl. | 0.04 | | 1 | 0.04 | 0.04 | c | 18 |
| 16114 | Tempeh | Daidzein | 17.59 | 3.13 | 6 | 4.67 | 27.30 | a | 5, 13, 21, 26, 35, 36 |
| | | Genistein | 24.85 | 5.47 | 6 | 1.11 | 39.77 | a | 5, 13, 21, 26, 35, 36 |
| | | Glycitein | 2.10 | 0.67 | 3 | 0.90 | 3.20 | b | 21, 35, 36 |
| | | Total Isofl. | 43.52 | 8.34 | 6 | 6.88 | 62.50 | a | 5, 13, 21, 26, 35, 36 |

(Units = mg/100 g edible portion for Mean, Standard error of the mean (SEM), Min, and Max; #S = the total number of means/individual values; CC=Confidence code)

| NDB No | Description | NutrDesc | Mean | SEM | #S | Min | Max | CC | Reference No. |
|---|---|---|---|---|---|---|---|---|---|
| 99081 | Tempeh burger | Daidzein | 6.40 | | 1 | 6.40 | 6.40 | c | 36 |
| | | Genistein | 19.60 | | 1 | 19.60 | 19.60 | c | 36 |
| | | Glycitein | 3.00 | | 1 | 3.00 | 3.00 | c | 36 |
| | | Total Isofl. | 29.00 | | 1 | 29.00 | 29.00 | c | 36 |
| 16174 | Tempeh, cooked | Daidzein | 19.25 | | 1 | 19.25 | 19.25 | c | 21 |
| | | Genistein | 31.55 | | 1 | 31.55 | 31.55 | c | 21 |
| | | Glycitein | 2.20 | | 1 | 2.20 | 2.20 | c | 21 |
| | | Total Isofl. | 53.00 | | 1 | 53.00 | 53.00 | c | 21 |
| 16162 | Tofu, MORI-NU, silken, firm | Daidzein | 11.13 | | 2 | 8.55 | 13.71 | b | 5, 21 |
| | | Genistein | 15.58 | | 2 | 12.85 | 18.31 | b | 5, 21 |
| | | Glycitein | 2.40 | | 1 | 2.40 | 2.40 | c | 21 |
| | | Total Isofl. | 27.91 | | 2 | 23.80 | 32.02 | b | 5, 21 |
| 16128 | Tofu, dried-frozen (koyadofu, kori tofu, or tung tou-fu) | Daidzein | 25.34 | | 1 | 25.34 | 25.34 | c | 34 |
| | | Genistein | 42.15 | | 1 | 42.15 | 42.15 | c | 34 |
| | | Total Isofl. | 67.49 | | 1 | 67.49 | 67.49 | c | 34 |
| 99084 | Tofu, AZUMAYA, extra firm, cooked (steamed) | Daidzein | 8.00 | | 1 | 8.00 | 8.00 | c | 21 |
| | | Genistein | 12.75 | | 1 | 12.75 | 12.75 | c | 21 |
| | | Glycitein | 1.95 | | 1 | 1.95 | 1.95 | c | 21 |
| | | Total Isofl. | 22.70 | | 1 | 22.70 | 22.70 | c | 21 |
| 99083 | Tofu, AZUMAYA, extra firm, prepared with nigari | Daidzein | 8.23 | | 2 | 7.35 | 9.10 | b | 21 |
| | | Genistein | 12.45 | | 2 | 11.10 | 13.80 | b | 21 |
| | | Glycitein | 1.95 | | 2 | 1.70 | 2.20 | b | 21 |
| | | Total Isofl. | 22.63 | | 2 | 20.15 | 25.10 | b | 21 |
| 99085 | Tofu, AZUMAYA, firm, cooked | Daidzein | 12.80 | | 1 | 12.80 | 12.80 | c | 21 |
| | | Genistein | 16.15 | | 1 | 16.15 | 16.15 | c | 21 |
| | | Glycitein | 2.40 | | 1 | 2.40 | 2.40 | c | 21 |
| | | Total Isofl. | 31.35 | | 1 | 31.35 | 31.35 | c | 21 |
| 16126 | Tofu, firm, prepared with calcium sulfate and nigari | Daidzein | 9.44 | 1.68 | 6 | 2.90 | 14.55 | a | 6, 21, 34 |
| | | Genistein | 13.35 | 2.00 | 7 | 4.96 | 21.26 | a | 6, 12, 21, 34 |

(Units = mg/100 g edible portion for Mean, Standard error of the mean (SEM), Min, and Max; #S = the total number of means/individual values; CC=Confidence code)

| NDB No | Description | NutrDesc | Mean | SEM | #S | Min | Max | CC | Reference No. |
|---|---|---|---|---|---|---|---|---|---|
| | | Glycitein | 2.08 | 0.15 | 4 | 1.70 | 2.40 | a | 21 |
| | | Total Isofl. | 24.74 | 3.77 | 6 | 7.85 | 34.55 | a | 6, 21, 34 |
| 16129 | Tofu, fried (aburage) | Daidzein | 17.83 | 2.60 | 4 | 12.20 | 24.70 | b | 10, 21 |
| | | Genistein | 28.00 | 3.41 | 4 | 19.00 | 35.10 | b | 10, 21 |
| | | Glycitein | 3.37 | 1.07 | 3 | 1.60 | 5.30 | b | 10, 21 |
| | | Total Isofl. | 48.35 | 6.06 | 4 | 36.90 | 65.10 | b | 10, 21 |
| 16130 | Tofu, okara | Daidzein | 5.39 | | 2 | 0.57 | 10.20 | c | 21, 35 |
| | | Genistein | 6.48 | | 2 | 1.95 | 11.00 | c | 21, 35 |
| | | Glycitein | 1.64 | | 2 | 1.09 | 2.20 | c | 21, 35 |
| | | Total Isofl. | 13.51 | | 2 | 3.61 | 23.40 | c | 21, 35 |
| 99097 | Tofu, pressed (Tau kwa), raw | Daidzein | 13.60 | | 1 | 13.60 | 13.60 | c | 10 |
| | | Genistein | 13.90 | | 1 | 13.90 | 13.90 | c | 10 |
| | | Glycitein | 2.00 | | 1 | 2.00 | 2.00 | c | 10 |
| | | Total Isofl. | 29.50 | | 1 | 29.50 | 29.50 | c | 10 |
| 16427 | Tofu, raw, regular, prepared with calcium sulfate | Daidzein | 9.02 | 2.86 | 4 | 1.15 | 14.60 | b | 6, 11, 35, 36 |
| | | Genistein | 13.60 | 3.61 | 4 | 2.89 | 18.66 | b | 6, 11, 35, 36 |
| | | Glycitein | 1.98 | | 2 | 1.05 | 2.90 | c | 35, 36 |
| | | Total Isofl. | 23.61 | 6.33 | 4 | 5.09 | 33.70 | b | 6, 11, 35, 36 |
| 16132 | Tofu, salted and fermented (fuyu) | Daidzein | 14.29 | | 2 | 3.58 | 25.00 | c | 10, 34 |
| | | Genistein | 16.38 | | 2 | 3.96 | 28.80 | c | 10, 34 |
| | | Glycitein | 5.00 | | 1 | 5.00 | 5.00 | c | 10 |
| | | Total Isofl. | 33.17 | | 2 | 7.54 | 58.80 | c | 10, 34 |
| 99086 | Tofu, soft, VITASOY-silken | Daidzein | 8.59 | | 1 | 8.59 | 8.59 | c | 6 |
| | | Genistein | 20.65 | | 1 | 20.65 | 20.65 | c | 6 |
| | | Total Isofl. | 29.24 | | 1 | 29.24 | 29.24 | c | 6 |
| 16127 | Tofu, soft, prepared with calcium sulfate and nigari | Daidzein | 11.99 | 2.69 | 7 | 3.44 | 25.80 | a | 6, 10, 21, 34 |
| | | Genistein | 18.23 | 3.77 | 7 | 5.26 | 37.70 | a | 6, 10, 21, 34 |
| | | Glycitein | 2.03 | 0.28 | 3 | 1.70 | 2.60 | b | 10, 21 |
| | | Total Isofl. | 31.10 | 6.19 | 7 | 8.70 | 63.50 | a | 6, 10, 21, 34 |

(Units = mg/100 g edible portion for Mean, Standard error of the mean (SEM), Min, and Max; #S = the total number of means/individual values; CC=Confidence code)

| NDB No | Description | NutrDesc | Mean | SEM | #S | Min | Max | CC | Reference No. |
|---|---|---|---|---|---|---|---|---|---|
| 43476 | Tofu, yogurt | Daidzein | 5.70 | | 1 | 5.70 | 5.70 | c | 36 |
| | | Genistein | 9.40 | | 1 | 9.40 | 9.40 | c | 36 |
| | | Glycitein | 1.20 | | 1 | 1.20 | 1.20 | c | 36 |
| | | Total Isofl. | 16.30 | | 1 | 16.30 | 16.30 | c | 36 |
| 23501 | USDA Commodity, beef patties with VPP, frozen, cooked | Daidzein | 0.67 | 0.15 | 5 | 0.30 | 1.05 | a | 21 |
| | | Genistein | 1.09 | 0.19 | 5 | 0.50 | 1.65 | a | 21 |
| | | Glycitein | 0.10 | 0.03 | 5 | 0.00 | 0.20 | a | 21 |
| | | Total Isofl. | 1.86 | 0.35 | 5 | 0.90 | 2.90 | a | 21 |
| 23506 | USDA Commodity, beef patties with VPP, frozen, raw | Daidzein | 0.35 | 0.07 | 5 | 0.20 | 0.55 | a | 21 |
| | | Genistein | 0.77 | 0.12 | 5 | 0.35 | 1.10 | a | 21 |
| | | Glycitein | 0.02 | 0.02 | 5 | 0.00 | 0.10 | a | 21 |
| | | Total Isofl. | 1.14 | 0.20 | 5 | 0.55 | 1.75 | a | 21 |
| 22126 | WORTHINGTON FOODS, LOMA LINDA, BIG FRANKS, meatless franks, canned | Daidzein | 1.00 | | 1 | 1.00 | 1.00 | c | 21 |
| | | Genistein | 2.05 | | 1 | 2.05 | 2.05 | c | 21 |
| | | Glycitein | 0.30 | | 1 | 0.30 | 0.30 | c | 21 |
| | | Total Isofl. | 3.35 | | 1 | 3.35 | 3.35 | c | 21 |
| 22116 | WORTHINGTON FOODS, LOMA LINDA, BIG FRANKS, meatless franks, canned, prepared | Daidzein | 1.35 | | 1 | 1.35 | 1.35 | c | 21 |
| | | Genistein | 2.00 | | 1 | 2.00 | 2.00 | c | 21 |
| | | Glycitein | 0.40 | | 1 | 0.40 | 0.40 | c | 21 |
| | | Total Isofl. | 3.75 | | 1 | 3.75 | 3.75 | c | 21 |

# A TABLE FOR COUMESTROL, FORMONONETIN AND BIOCHANIN A ( mg/100g)

| NDB N0. | Food description | Ref. No. | Coumestrol | Formononetin | Biochanin A |
|---|---|---|---|---|---|
| 11052 | Green beans, raw | 11 | 0.00 | 0.15 | Trace |
| 11053 | Green beans, ckd | 11 | 0.00 | Trace | Trace |
| 16071 | Lima beans, large, dry | 11<br>17 | 1.48<br>0.00 | Trace<br>0.01 | Trace<br>0.00 |
| 16072 | Lima beans, large, ckd | 11 | 0.00 | 0.01 | 0.00 |
| 16056 | Garbanzo beans, dry | 11<br>17 | 0.00<br>0.00 | 0.00<br>0.14 | 1.52<br>1.78 |
| 16028 | Kidney beans, ckd | 11 | 0.00 | 0.00 | 0.41 |
| 16042 | Pinto beans, dry | 11<br>17 | 3.61<br>0.00 | Trace<br>0.00 | 0.56<br>0.00 |
| 16074 | Lima beans, small, dry | 11 | 0.00 | 0.55 | 0.37 |
| 16024 | Great northern beans, dry | 11 | 0.00 | 0.00 | 0.60 |
| 16040 | Pink beans, dry | 11 | 0.00 | 1.05 | 0.00 |
| 16062 | Blackeyed beans, dry | 11<br>17 | 0.00<br>0.00 | 0.00<br>0.00 | 1.73<br>0.00 |
| 16045 | Small white beans, dry | 11 | 0.00 | 0.82 | 0.00 |
| 16085 | Split peas, yellow & green | 11<br>17 | 0.00<br>0.00 | 0.00<br>0.00 | 0.86<br>0.00 |
| | Split peas, round | 11 | 8.11 | 0.00 | 0.00 |
| | Chinese peas, ckd | 11 | 0.00 | 0.00 | 9.31 |
| 99019 | Kala chana,dry | 11 | 6.13 | 0.00 | 1.26 |
| 16080 | Mung beans, dry | 11<br>17 | 0.00<br>Trace | 0.61<br>0.01 | 0.00<br>0.01 |
| 99009 | Clover sprouts | 11 | 28.1 | 2.28 | 0.44 |
| 11001 | Alfalfa sprouts | 11<br>21 | 4.68<br>0.00 | Trace<br>261 | 0.00<br>0.00 |
| 19015 | Granola candy bar | 19 | Trace | 0.00 | 0.00 |
| 99001 | 9-grain bread, US | 19 | 0.00 | 0.00 | 0.00 |
| 18216 | Crispbread, Finland | 19 | Trace | 0.00 | 0.00 |
| 12036 | Sunflower seeds | 19 | Trace | 0.03 | Trace |

# A TABLE FOR COUMESTROL, FORMONONETIN AND BIOCHANIN A ( mg/100g)

| NDB no. | Food Description | Ref. No. | Coumestrol | Formononetin | Biochanin A |
|---|---|---|---|---|---|
| 99020 | Lapacho tea | 19 | 0.00 | 0.01 | 0.03 |
| 16115 | Soy flour, UK | 19 | 0.00 | 0.03 | 0.07 |
| 99106 | Jasmine tea | 18 | 0.03 | | |
| 99107 | Green tea | 18 | 0.03 | | |
| 16108 | Soybeans, dry | 17 | 0.05 | 0.07 | 0.01 |
| 16027 | Kidney beans, dry | 17 | 0.00 | 0.01 | Trace |
| 16032 | Kidney beans, red, dry | 17 | 0.00 | 0.00 | 0.01 |
| 16037 | Navy beans, dry | 17 | 0.00 | 0.00 | 0.00 |
| 16027 | Kidney beans, white dry | 17 | 0.00 | 0.00 | 0.01 |
| 16095 | Groundnut, americana | 17 | 0.00 | 0.00 | 0.01 |
| 16101 | Pigeon peas, dry | 17 | Trace | 0.01 | 0.10 |
| 16052 | Broad beans, dry | 17 | 0.00 | 0.02 | Trace |
| 16083 | Black gram (urad dahl) | 17 | 0.00 | 0.00 | 0.03 |
| 16087 | Peanut | 17 | 0.00 | 0.01 | 0.01 |
| 16069 | Lentils | 17 | 0.00 | 0.01 | 0.00 |
| | Red clover | 28 | | 1322 | 833 |
| 11452 | Soy sprouts | 34 | 38.6 | 0.00 | |
| 99003 | Alfalfa sprouts mixed with clover sprouts | 21 | 466 | 1771 | 2946 |

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Daidzein, Genistein, Glycitein

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garbanzo (dry), kidney beans (cooked), pinto beans (dry), white navy beans (dry), small lima beans (dry), great northern beans (dry), pink beans (dry), blackeyed beans (dry), yellow split beans (dry), mung beans (dry), red beans (boiled), lentils, urad dahl, masur dahl
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Soy flour, soy isolate, soy concentrate (aqueous washed, alcohol washed), TVP (texturized vegetable protein), soy fiber
Daidzein, Genistein, Glycitein

21. Murphy, P. A., Song. T., Buseman, G., Barua, K., Beecher, G. R., Trainer, D., and Holden, J.
Isoflavones in retail and institutional soy foods.
J. Agric. Food Chem. In press.
Daidzein, Genistein, Glycitein

22. Murphy, P. A., Song, T., Buseman, G., and Barua, K.
Isoflavones in soy-based infant formulas.
J. Agric. Food Chem., 45, 1997, .4635-4638.
infant formulas: Gerber (powder), Prosobee (powder), Isomil (powder), Nursoy soy protein (powder and liquid concentrate), Enfamil next step (powder)

Daidzein, Genistein, Glycitein

23. Murphy, P.A. (Unpublished data)
infant formulas: Prosobee (powder), Gerber (powder), Isomil (powder), Nursoy soy protein (ready to feed), Enfamil next step (powder)
Daidzein, Genistein, Glycitein

24. Murphy, P.A. (Unpublished data)
green soy beans (Edame, dry), soy beans (small Jade Black), natto (DHA), natto (fermented soy beans), soy bean butter (full fat), natto Kibun, soy nuts (full fat), soy nuts (plain halves), soy flakes (white, not roasted), green soy beans (Edame, fresh)
Daidzein, Genistein, Glycitein

25. Naim, M., Gestetner, B., Zilkah, S., Birk, Y., and Bondi, A.
Soybean isoflavones, characterization, determination, and antifungal activity.
J. Agric. Food Chem., 22, 1976, p.806-810.
soybean flour (Wayne var.-1969)
Daidzein, Genistein, glycitein

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An investigation on the extraction and concentration of isoflavones in soy-based products.
J. Phamaceutical and Biomedical Analysis, 14, 1995, p.221-232.
Infant formulas: Isomil (ready to feed), Nursoy (liquid concentrate), Prosobee (liquid concentrate), soy flours (Central soya - Soyafluffy), Centex, Promax, Promax plus, ADM - Nutrisoy, TVP, Acron-F, Acron-S, Cargill Protein Products -200/20, 200/70, Arrowhead, Molly farm, Sun Ridge Farm, soy drink, tempeh, soy concentrates (Procon, Promine), TVP (Response)
Daidzein, Genistein

27. Padgette, S. R., Taylor, N. B., Nida, D. L., Bailey, M. R., MacDonald, J., Holden, L. R., and Fuchs, R. L.
The composition of glyphosate-tolerant soybean seeds is equivalent to that of conventional soybeans.
J. Nutr., 126(3), 1996, p.702-716.
soybean meal (A5403, Asgrow maturity group V, 1993)
Daidzein, Genistein

28. Petterson, H., and Kiessling, K-H.
Liquid chromatographic determination of the plant estrogens coumestrol and isoflavones in animal feed.
J. Assoc. Off. Anal. Chem., 67(3), 1984, p.503-506.
defatted soybean meal and whole soybean meal in animal feed
Daidzein, Genistein, Formononetin, Biochanin-A

29. Pratt, D. E., and Birac, P. M.

Source of antioxidant activity of soybeans and soy products.
J. Food Sci., 44, 1979, p.1720-1722.
soybeans, Corsoy var., Glycine max
Daidzein, Genistein, Glycitein,Cinnamic acids (Chlorogenic, Caffeic, p-coumeric, Ferulic)

30. Seo, A., and Morr, C.V.
Improved high-performance liquid chromatographic analysis of phenolic acids and isoflavonoids from soybean protein products.
J. Agric. Food Chem., 32, 1984, p.530-533.
defatted soy flakes, soy protein isolates (Ralston Purina co.)
Daidzein, Genistein, some phenolic componds

31. Setchell, K. D. R., Zimmer-Nechemias, L., Cai, J., and Heubi, J. E.
Exposure of infants to phyto-oestrogens from soy-based infant formula.
Lancet, 350, 1997, p.23-27.
infant soy formula: Nursoy (powder), Isomil (powder), Prosobee (liquid concentrate)
Total isoflavones

32. Setchell, K. D. R., and Welsh, M. B.
High-performance liquid chromatographic analysis of phytoestrogens in soy protein preparations with ultraviolet, electrochemical and thermospray mass spectrometric detection.
J. Chromatography, 386, 1987, p.315-323.
textured soy protein, soy flakes, Prosobee (ready to feed), Isomil (ready to feed)
Daidzein, Genistein

33. Wang, C., Ma, Q., Pagadala, S., Sherrad, MS., and Krishnan, PG.
Changes of isoflavones during processing of soy protein isolates.
J. Am. Oil Chemists Society, 75(3), 1998, p.337-341.
Soy flour (defatted), soy protein isolate (made in lab)
Daidzein, Genistein, Glycitein

34. Wang, G., Kuan, S. S., Francis, O. J., Ware, G. M., and Carman, A. S.
A simplified HPLC method for the determination of phytoestrogens in soybean and its processed products.
J. Agric. Food Chem., 38, 1990, p.185-190.
soybeans, defatted soy meal, tofu-hard, tofu-soft, tofu-dry-spiced, soymilk skin(film), soymilk, soy sauce, soy paste-hot, soy paste-sweet, tofu-fermented, soy sprouts (homemade), soy sprouts (grocery)
Daidzein, Genistein, Formononetin, Coumestrol

35. Wang, H-J., and Murphy, P. A.
Mass balance study of isoflavones during soybean processing.
J. Agric. Food Chem., 44(8), 1996, p.2377-2383.
soybeans (Vinton 81, 1992), soybeans (Vinton 81, 1993), soybean flour, products made in the lab - tempeh, soymilk, okara, tofu (momen or cotton, CaSo4 coag.), whey, soy protein isolate, defatted soy flour
Daidzein, Genistein, Glycitein

36. Wang, H-J., and Murphy, P. A.
Isoflavone content in commercial soybean foods.
J. Agric. Food Chem., 42, 1994, p.1666-1673.
soybean (Vinton 81 90H), soybean (Vinton 81, 91I), green soybeans, defatted soy flour, soy granule, TVP, soy isolate, roasted soybeans, instant beverage (dry samples), tofu ($CaSO_4$ ppt), tempeh, bean paste, fermented bean curd, Honzukuri miso (rice and soybeans), soy hot dog, soy bacon, Tempeh burger, tofu yogurt, soy Parmesan, cheddar cheese, mozzarella cheese, flat noodles
Daidzein, Genistein, Glycitein

37. Wang, H-J., and Murphy, P. A.
Isoflavone composition of American and Japanese soybeans in Iowa: Effects of variety, crop year, and location.
J. Agric. Food Chem., 42, 1994, p.1674-1677.
soybeans (Vinton 81-1989, 1990, 1991 at 3 locations), 1989 crops of Pioneer II, Strayer 2233, Pioneer 9202, Prize, HP 204, LS301, XL72
Daidzein, Genistein, Glycitein

38. Xu, X., Wang, H-J., Murphy, P. A., Cook, L., and Hendrich, S.
Daidzein is a more bioavailable soymilk isoflavone than is genistein in adult women.
J. Nutr., 124, 1994, p.825-832.
soymilk (powder, Now Foods)
Daidzein, Genistein