

# Oxygen Radical Absorbance Capacity (ORAC) of Selected Foods – 2007

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## Introduction

The development of many chronic and degenerative diseases, such as cancer (1), heart disease (5), and neuronal degeneration such as Alzheimer's (4) and Parkinson's disease (9) has been theorized to be caused, in part, by oxidative stress. Oxidative stress has also been implicated in the process of aging (2). It is known that reactive oxygen species can damage biological molecules such as proteins, lipids, and DNA. While the human body has developed a number of systems to eliminate free radicals from the body, it is not 100% efficient (20).

Diets rich in fruits, nuts, and vegetables have long been considered to be an excellent source of antioxidants. A number of minerals and vitamins have a role as dietary antioxidants in addition to their other biological functions. These include vitamin C (ascorbic acid), vitamin E and its isomers (tocopherols and tocotrienols), and selenium. Data for these are included in the USDA National Nutrient Database for Standard Reference (SR) (18). USDA has also published a number of Special Interest Databases on various antioxidants: Carotenoids (14) (now merged with SR); isoflavones (15), flavonoids (16), and proanthocyanidins (17). However, there is no database of antioxidant activity for selected foods.

As part of the National Food and Nutrient Analysis Program (NFNAP) (12), USDA, in collaboration with the Produce for Better Health Foundation, undertook the analysis of 59 individual fruits, nuts, and vegetables. In addition to the traditional proximates, minerals, and vitamins analyses, which are included in SR, these foods were analyzed for a number of potentially bioactive compounds. These foods, along with a few foods collected for the food composition database for American Indians and Alaskan Natives, were also analyzed for their oxygen radical absorbance capacity (ORAC) by Wu et al. (19) at the Arkansas Children's Nutrition Center, ARS, USDA. These data as well as a limited amount of analytical data from the literature were compiled for the ORAC database.

In addition to the ORAC assay, other common measures of antioxidant capacity (AC) include ferric ion reducing antioxidant power (FRAP) and trolox equivalence antioxidant capacity (TEAC) assays. These assays are based on different underlying mechanisms using different radical or oxidant sources and therefore generate different values and cannot be compared directly. The ORAC assay is considered by some to be a preferable method because of its biological relevance to the *in vivo* antioxidant efficacy (3). In general, a food that has a high value for one measure of AC will also be high for another measure. However, because antioxidant compounds with different chemical structures interact with different radical sources differently, the relationship between any two AC methods will be quite low if considered across all foods. Thus, it is not possible to develop a mathematical relationship between 2 methods across a wide spectrum of foods. Like the content of any food component, AC values will differ due to a wide array of reasons, such as cultivar, growing conditions, harvesting, food processing and preparation, sampling, and analytical procedures.

## Methods

The analytical method developed by Prior et al (13) was used as the reference method for evaluating analytical methods from other published sources. This method uses fluorescein as the fluorescent probe and assays hydrophilic as well as lipophilic antioxidants. Analytical data from literature based on methods that used B-phycoerythrin (B-PE) as the probe were not used in this compilation as B-PE may produce inconsistent results in some foods, is not photostable, and may involve nonspecific protein binding with polyphenols (11).

ORAC Values are reported for hydrophilic-ORAC (H-ORAC), lipophilic-ORAC (L-ORAC), total-ORAC, and total phenolics (TP). H-ORAC, L-ORAC and total-ORAC are reported in  $\mu\text{mol}$  of Trolox Equivalents per 100 grams ( $\mu\text{molTE}/100\text{ g}$ ), while TP is reported in mg gallic acid equivalents per 100 grams (mgGAE/100 g). When only an H-ORAC value was available for a particular food item low in fat, H-ORAC value was also utilized for the Total ORAC value. In some cases values for H-ORAC, L-ORAC and Total-ORAC may come from different sources, and the sum of the average values for H-ORAC and L-ORAC may not equal the value for Total-ORAC.

## Data Evaluation

The data were evaluated for quality using procedures developed by scientists at the NDJ as part of the Nutrient Databank System (7). These procedures were based on criteria described earlier (6, 10) with some modifications. Procedures developed for the first release in 2003 of the flavonoid database were followed (8). The five categories of documentation which were evaluated included: sampling plan, sample handling, number of samples, analytical method, and analytical quality control. NDJ modified the criteria for the sampling plan rating at the aggregation stage to accommodate data from international sources. For aggregated data which included data from countries other than the United States, the number of countries replaced the number of regions within a country. The information presented in each reviewed paper was evaluated for each category, which then received a rating ranging from 0 to 20 points. The ratings for each of the five categories are summed to yield a quality index (QI) with the maximum possible score of 100 points. A confidence code (CC) is derived from the QI and is an indicator of the relative quality of the data and the reliability of a given mean. The CC is assigned as indicated in Table 1:

Table 1.—Confidence Codes (CC) derived from Quality Index (QI)

| QI Points | CC |
|-----------|----|
| 75-100    | A  |
| 74-50     | B  |
| 49-25     | C  |
| <25       | D  |

The data were aggregated where possible to match the food descriptions in the USDA National Nutrient Database for Standard Reference (SR). Subsequently, the mean value (mg/100g), standard error of the mean (SEM), minimum (Min), and maximum (Max.) values were determined for each food and ORAC value. Mean values are weighted to account for the different number of samples among the various studies used. The weighted mean is, in turn, used to calculate the standard error based on the total number of samples in each aggregated food.

### **File Formats**

Each food was given a Nutrient Data Bank (NDB) number, the five digit numerical code used in the SR to identify each unique food entry if it matches a food in SR. As the data came from various sources both in the United States and other countries, there are a number of foods which are not included in the SR database. Temporary NDB numbers, beginning with either “97” or “99”, were assigned to foods that are not included in the SR. While efforts were made to assign the same “temporary” NDB Numbers to the same foods as in other Special Interest Databases, some numbers may have been used to encode different foods in other Special Interest Databases produced by the NDL, and therefore may not be unique. Minimum and maximum values are not reported when the number of samples = 1. A reference number corresponding to the publications in the sources of data section of the documentation is included in the table. Table 2 contains ORAC values for 277 foods and is arranged in alphabetical order and is also provided as a Microsoft<sup>®</sup> Access database.

This table of ORAC values will provide the user with a listing of antioxidant capacity as measured by the oxygen radical absorbance capacity method for a number of food items. When used in tandem with the phytonutrient Special Interest Tables developed by NDL, the user can assess the various sources of antioxidants in the food supply.

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## Oxygen Radical Absorbance Capacity (ORAC) of Selected Foods – 2007

| NDB No. | Description  | Parameter  | Unit          | Mean | N  | SEM    | Min  | Max  | CC | Ref   |
|---------|--|------------|---------------|------|----|--------|------|------|----|-------|
| 35193   | Agave, cooked (Southwest)  | H-ORAC     | umol TE/100 g | 2938 | 1  |        |      |      | B  | 13    |
|         |  | L-ORAC     | umol TE/100 g | 136  | 1  |        |      |      | B  | 13    |
|         |  | Total-ORAC | umol TE/100 g | 2938 | 1  |        |      |      | B  | 13    |
|         |  | TP         | mg GAE/100 g  | 376  | 1  |        |      |      | B  | 13    |
| 35194   | Agave, dried (Southwest)   | H-ORAC     | umol TE/100 g | 7274 | 1  |        |      |      | B  | 13    |
|         |  | L-ORAC     | umol TE/100 g | 250  | 1  |        |      |      | B  | 13    |
|         |  | Total-ORAC | umol TE/100 g | 7274 | 1  |        |      |      | B  | 13    |
|         |  | TP         | mg GAE/100 g  | 1359 | 1  |        |      |      | B  | 13    |
| 35192   | Agave, raw (Southwest)   | H-ORAC     | umol TE/100 g | 1247 | 1  |        |      |      | B  | 13    |
|         |  | L-ORAC     | umol TE/100 g | 47   | 1  |        |      |      | B  | 13    |
|         |  | Total-ORAC | umol TE/100 g | 1247 | 1  |        |      |      | B  | 13    |
|         |  | TP         | mg GAE/100 g  | 87   | 1  |        |      |      | B  | 13    |
| 14096   | Alcoholic beverage, wine, table, red                                     | H-ORAC     | umol TE/100 g | 3873 | 35 | 153.57 | 2547 | 6380 | B  | 3, 11 |
|         |  | Total-ORAC | umol TE/100 g | 3873 | 35 | 153.57 | 2547 | 6380 | B  | 3, 11 |
|         |  | TP         | Mg GAE/100 g  | 184  | 25 | 5.92   | 130  | 243  | A  | 3     |
| 14097   | Alcoholic Beverage, wine, table, red, Cabernet Sauvignon                 | H-ORAC     | umol TE/100 g | 5034 | 11 | 280.06 | 3470 | 6380 | A  | 3     |
|         |  | Total-ORAC | umol TE/100 g | 5034 | 11 | 280.06 | 3470 | 6380 | A  | 3     |
|         |  | TP         | mg GAE/100 g  | 203  | 11 | 8.10   | 143  | 243  | A  | 3     |
| 99439   | Alcoholic beverage, wine, table, rose                                    | H-ORAC     | umol TE/100 g | 1005 | 3  | 79.61  | 895  | 1120 | A  | 3     |
|         |  | Total-ORAC | umol TE/100 g | 1005 | 3  | 79.61  | 895  | 1120 | A  | 3     |
|         |  | TP         | Mg GAE/100 g  | 42   | 3  | 1.91   | 39   | 44   | A  | 3     |
| 14106   | Alcoholic beverage, wine, table, white                                   | H-ORAC     | umol TE/100 g | 392  | 12 | 10.74  | 318  | 484  | B  | 3, 11 |
|         |  | Total-ORAC | umol TE/100 g | 392  | 12 | 10.74  | 318  | 484  | B  | 3, 11 |
|         |  | TP         | Mg GAE/100 g  | 20   | 2  | 1.98   | 19   | 21   | A  | 3     |
| 11001   | Alfalfa seeds, sprouted, raw   | H-ORAC     | umol TE/100 g | 1510 | 4  | 0.00   | 1510 | 1510 | C  | 2     |
|         |  | Total-ORAC | umol TE/100 g | 1510 | 4  | 0.00   | 1510 | 1510 | C  | 2     |
|         |  | TP         | mg GAE/100 g  | 53   | 4  | 0.00   | 53   | 53   | C  | 2     |
| 09016   | Apple juice, canned or bottled, unsweetened, without added ascorbic acid | H-ORAC     | umol TE/100 g | 408  | 66 | 1.07   | 402  | 477  | B  | 11, 8 |
|         |  | Total-ORAC | umol TE/100 g | 408  | 66 | 1.07   | 402  | 477  | B  | 11, 8 |
| 99416   | Apples, dried to 40% moisture (purchased in Italy)                       | H-ORAC     | umol TE/100 g | 6681 | 4  | 0.00   | 6681 | 6681 | C  | 2     |
|         |  | Total-ORAC | umol TE/100 g | 6681 | 4  | 0.00   | 6681 | 6681 | C  | 2     |
|         |  | TP         | mg GAE/100 g  | 324  | 4  | 0.00   | 324  | 324  | C  | 2     |
| 97066   | Apples, Fuji, raw, with skin   | H-ORAC     | umol TE/100 g | 2568 | 4  | 401.99 | 1661 | 3304 | A  | 13    |
|         |  | L-ORAC     | umol TE/100 g | 21   | 4  | 6.09   | 10   | 35   | A  | 13    |
|         |  | Total-ORAC | umol TE/100 g | 2589 | 4  | 398.80 | 1682 | 3314 | A  | 13    |
|         |  | TP         | mg GAE/100 g  | 210  | 4  | 18.76  | 165  | 237  | A  | 13    |



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| NDB No. | Description  | Parameter  | Unit          | Mean | N  | SEM    | Min  | Max  | CC | Ref   |
|---------|--|------------|---------------|------|----|--------|------|------|----|-------|
| 97067   | Apples, Gala, raw, with skin                                 | H-ORAC     | umol TE/100 g | 2793 | 3  | 99.84  | 2639 | 2916 | A  | 13    |
|         |  | L-ORAC     | umol TE/100 g | 35   | 3  | 5.49   | 29   | 44   | A  | 13    |
|         |  | Total-ORAC | umol TE/100 g | 2828 | 3  | 103.44 | 2670 | 2959 | A  | 13    |
|         |  | TP         | mg GAE/100 g  | 262  | 3  | 20.26  | 231  | 287  | A  | 13    |
| 97069   | Apples, Golden Delicious, raw, with skin                     | H-ORAC     | umol TE/100 g | 2644 | 4  | 93.24  | 2486 | 2844 | A  | 13    |
|         |  | L-ORAC     | umol TE/100 g | 26   | 4  | 3.35   | 18   | 31   | A  | 13    |
|         |  | Total-ORAC | umol TE/100 g | 2670 | 4  | 95.23  | 2504 | 2872 | A  | 13    |
|         |  | TP         | mg GAE/100 g  | 248  | 4  | 10.31  | 222  | 262  | A  | 13    |
| 97068   | Apples, Golden Delicious, raw, without skin                  | H-ORAC     | umol TE/100 g | 2204 | 2  | 371.06 | 1942 | 2467 | B  | 13    |
|         |  | L-ORAC     | umol TE/100 g | 5    | 2  | 1.81   | 4    | 7    | B  | 13    |
|         |  | Total-ORAC | umol TE/100 g | 2210 | 2  | 372.87 | 1946 | 2473 | B  | 13    |
|         |  | TP         | mg GAE/100 g  | 217  | 2  | 9.60   | 210  | 224  | B  | 13    |
| 97070   | Apples, Granny Smith, raw, with skin                         | H-ORAC     | umol TE/100 g | 3859 | 4  | 271.05 | 3588 | 4561 | A  | 13    |
|         |  | L-ORAC     | umol TE/100 g | 39   | 4  | 6.36   | 29   | 52   | A  | 13    |
|         |  | Total-ORAC | umol TE/100 g | 3898 | 4  | 275.86 | 3619 | 4613 | A  | 13    |
|         |  | TP         | mg GAE/100 g  | 341  | 4  | 21.75  | 316  | 396  | A  | 13    |
| 09003   | Apples, raw, with skin                                       | H-ORAC     | umol TE/100 g | 3056 | 23 | 166.95 | 1661 | 4811 | A  | 2, 13 |
|         |  | L-ORAC     | umol TE/100 g | 32   | 19 | 2.59   | 10   | 52   | A  | 13    |
|         |  | Total-ORAC | umol TE/100 g | 3082 | 23 | 168.72 | 1682 | 4852 | A  | 2, 13 |
|         |  | TP         | mg GAE/100 g  | 262  | 23 | 13.48  | 165  | 396  | A  | 2, 13 |
| 09004   | Apples, raw, without skin                                    | H-ORAC     | umol TE/100 g | 2567 | 4  | 314.35 | 1942 | 3265 | A  | 13    |
|         |  | L-ORAC     | umol TE/100 g | 6    | 4  | 0.79   | 4    | 7    | A  | 13    |
|         |  | Total-ORAC | umol TE/100 g | 2573 | 4  | 314.94 | 1946 | 3272 | A  | 13    |
|         |  | TP         | mg GAE/100 g  | 225  | 4  | 10.61  | 210  | 251  | A  | 13    |
| 97071   | Apples, Red Delicious, raw, without skin                     | H-ORAC     | umol TE/100 g | 2929 | 2  | 475.94 | 2592 | 3265 | B  | 13    |
|         |  | L-ORAC     | umol TE/100 g | 7    | 2  | 0.21   | 7    | 7    | B  | 13    |
|         |  | Total-ORAC | umol TE/100 g | 2936 | 2  | 475.72 | 2599 | 3272 | B  | 13    |
|         |  | TP         | mg GAE/100 g  | 232  | 2  | 26.15  | 214  | 251  | B  | 13    |
| 97072   | Apples, Red Delicious, raw, with skin                        | H-ORAC     | umol TE/100 g | 4234 | 4  | 236.27 | 3884 | 4811 | A  | 13    |
|         |  | L-ORAC     | umol TE/100 g | 41   | 4  | 1.00   | 39   | 43   | A  | 13    |
|         |  | Total-ORAC | umol TE/100 g | 4275 | 4  | 236.01 | 3927 | 4852 | A  | 13    |
|         |  | TP         | mg GAE/100 g  | 347  | 4  | 22.20  | 301  | 394  | A  | 13    |
| 09019   | Applesauce, canned, unsweetened, without added ascorbic acid | H-ORAC     | umol TE/100 g | 1965 | 1  |        |      |      | B  | 13    |
|         |  | Total-ORAC | umol TE/100 g | 1965 | 1  |        |      |      | B  | 13    |
|         |  | TP         | mg GAE/100 g  | 217  | 1  |        |      |      | B  | 13    |
| 99417   | Apricots, dried to 40% moisture (purchased in Italy)         | H-ORAC     | umol TE/100 g | 3234 | 4  | 0.00   | 3234 | 3234 | C  | 2     |
|         |  | Total-ORAC | umol TE/100 g | 3234 | 4  | 0.00   | 3234 | 3234 | C  | 2     |

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| NDB No. | Description                                  | Parameter  | Unit          | Mean | N | SEM    | Min  | Max  | CC | Ref   |
|---------|--|------------|---------------|------|---|--------|------|------|----|-------|
|         |  | TP         | mg GAE/100 g  | 248  | 4 | 0.00   | 248  | 248  | C  | 2     |
| 09021   | Apricots, raw                                | H-ORAC     | umol TE/100 g | 1108 | 5 | 51.74  | 1058 | 1309 | B  | 2, 13 |
|         |  | L-ORAC     | umol TE/100 g | 32   | 1 |        |      |      | B  | 13    |
|         |  | Total-ORAC | umol TE/100 g | 1115 | 5 | 58.34  | 1058 | 1341 | B  | 2, 13 |
|         |  | TP         | mg GAE/100 g  | 79   | 5 | 13.93  | 65   | 133  | B  | 2, 13 |
| 11007   | Artichokes, (globe or french), raw           | H-ORAC     | umol TE/100 g | 6552 | 4 | 0.00   | 6552 | 6552 | C  | 6     |
|         |  | Total-ORAC | umol TE/100 g | 6552 | 4 | 0.00   | 6552 | 6552 | C  | 6     |
|         |  | TP         | mg GAE/100 g  | 373  | 4 | 0.00   | 373  | 373  | C  | 6     |
| 99362   | Artichokes, Ocean Mist, boiled               | H-ORAC     | umol TE/100 g | 9221 | 1 |        |      |      | B  | 13    |
|         |  | L-ORAC     | umol TE/100 g | 195  | 1 |        |      |      | B  | 13    |
|         |  | Total-ORAC | umol TE/100 g | 9416 | 1 |        |      |      | B  | 13    |
|         |  | TP         | mg GAE/100 g  | 703  | 1 |        |      |      | B  | 13    |
| 99363   | Artichokes, Ocean Mist, Microwaved           | H-ORAC     | umol TE/100 g | 9332 | 1 |        |      |      | B  | 13    |
|         |  | L-ORAC     | umol TE/100 g | 70   | 1 |        |      |      | B  | 13    |
|         |  | Total-ORAC | umol TE/100 g | 9402 | 1 |        |      |      | B  | 13    |
|         |  | TP         | mg GAE/100 g  | 881  | 1 |        |      |      | B  | 13    |
| 11012   | Asparagus, cooked, boiled, drained           | H-ORAC     | umol TE/100 g | 1644 | 4 | 177.61 | 1250 | 1992 | A  | 13    |
|         |  | Total-ORAC | umol TE/100 g | 1644 | 4 | 177.61 | 1250 | 1992 | A  | 13    |
|         |  | TP         | mg GAE/100 g  | 159  | 4 | 8.52   | 141  | 177  | A  | 13    |
| 11011   | Asparagus, raw                               | H-ORAC     | umol TE/100 g | 2150 | 8 | 281.20 | 1288 | 3336 | A  | 6, 13 |
|         |  | L-ORAC     | umol TE/100 g | 102  | 4 | 10.57  | 81   | 123  | A  | 13    |
|         |  | Total-ORAC | umol TE/100 g | 2150 | 8 | 281.20 | 1288 | 3336 | A  | 6, 13 |
|         |  | TP         | mg GAE/100 g  | 106  | 8 | 11.50  | 72   | 156  | A  | 6, 13 |
| 97080   | Avocados, Hass, raw                          | H-ORAC     | umol TE/100 g | 1381 | 8 | 135.35 | 681  | 1768 | A  | 13    |
|         |  | L-ORAC     | umol TE/100 g | 552  | 8 | 69.73  | 310  | 830  | A  | 13    |
|         |  | Total-ORAC | umol TE/100 g | 1933 | 8 | 183.74 | 991  | 2433 | A  | 13    |
|         |  | TP         | mg GAE/100 g  | 187  | 8 | 8.61   | 143  | 208  | A  | 13    |
| 03165   | Babyfood, fruit, apple and blueberry, junior | H-ORAC     | umol TE/100 g | 4822 | 1 |        |      |      | B  | 13    |
|         |  | Total-ORAC | umol TE/100 g | 4822 | 1 |        |      |      | B  | 13    |
|         |  | TP         | mg GAE/100 g  | 563  | 1 |        |      |      | B  | 13    |
| 03116   | Babyfood, fruit, applesauce, strained        | H-ORAC     | umol TE/100 g | 4123 | 1 |        |      |      | B  | 13    |
|         |  | Total-ORAC | umol TE/100 g | 4123 | 1 |        |      |      | B  | 13    |
|         |  | TP         | mg GAE/100 g  | 612  | 1 |        |      |      | B  | 13    |
| 97017   | Babyfood, fruit, bananas                     | H-ORAC     | umol TE/100 g | 2658 | 1 |        |      |      | B  | 13    |
|         |  | Total-ORAC | umol TE/100 g | 2658 | 1 |        |      |      | B  | 13    |
|         |  | TP         | mg GAE/100 g  | 590  | 1 |        |      |      | B  | 13    |
| 97019   | Babyfood, fruit, peaches                     | H-ORAC     | umol TE/100 g | 6257 | 1 |        |      |      | B  | 13    |

# Oxygen Radical Absorbance Capacity (ORAC) of Selected Foods – 2007

| NDB No. | Description   | Parameter  | Unit          | Mean  | N  | SEM      | Min   | Max    | CC | Ref      |
|---------|---|------------|---------------|-------|----|----------|-------|--------|----|----------|
|         |   | Total-ORAC | umol TE/100 g | 6257  | 1  |          |       |        | B  | 13       |
|         |   | TP         | mg GAE/100 g  | 916   | 1  |          |       |        | B  | 13       |
| 03131   | Babyfood, fruit, peaches, junior                                      | H-ORAC     | umol TE/100 g | 2551  | 1  |          |       |        | B  | 13       |
|         |   | Total-ORAC | umol TE/100 g | 2551  | 1  |          |       |        | B  | 13       |
|         |   | TP         | mg GAE/100 g  | 673   | 1  |          |       |        | B  | 13       |
| 43408   | Babyfood, juice, pear   | H-ORAC     | umol TE/100 g | 414   | 3  | 0.00     | 414   | 414    | C  | 11       |
|         |   | Total-ORAC | umol TE/100 g | 414   | 3  | 0.00     | 414   | 414    | C  | 11       |
| 19078   | Baking chocolate, unsweetened, squares                                | H-ORAC     | umol TE/100 g | 51335 | 8  | 11450.83 | 19100 | 104322 | B  | 4, 13    |
|         |   | L-ORAC     | umol TE/100 g | 859   | 8  | 47.88    | 670   | 1100   | B  | 4, 13    |
|         |   | Total-ORAC | umol TE/100 g | 49926 | 12 | 7539.83  | 20200 | 105160 | B  | 4, 5, 13 |
|         |   | TP         | mg GAE/100 g  | 5146  | 2  | 4705.41  | 2691  | 5177   | B  | 5, 13    |
| 09040   | Bananas, raw  | H-ORAC     | umol TE/100 g | 813   | 4  | 58.79    | 686   | 924    | A  | 13       |
|         |   | L-ORAC     | umol TE/100 g | 66    | 4  | 7.89     | 53    | 85     | A  | 13       |
|         |   | Total-ORAC | umol TE/100 g | 879   | 4  | 51.36    | 771   | 976    | A  | 13       |
|         |   | TP         | mg GAE/100 g  | 230   | 4  | 34.87    | 150   | 295    | A  | 13       |
| 02044   | Basil, fresh  | H-ORAC     | umol TE/100 g | 4805  | 4  | 0.00     | 4805  | 4805   | C  | 6        |
|         |   | Total-ORAC | umol TE/100 g | 4805  | 4  | 0.00     | 4805  | 4805   | C  | 6        |
|         |   | TP         | mg GAE/100 g  | 264   | 4  | 0.00     | 264   | 264    | C  | 6        |
| 16016   | Beans, black turtle soup, mature seeds, raw                           | H-ORAC     | umol TE/100 g | 6416  | 6  | 561.79   | 4430  | 8402   | C  | 14       |
|         |   | Total-ORAC | umol TE/100 g | 6416  | 6  | 561.79   | 4430  | 8402   | C  | 14       |
|         |   | TP         | mg GAE/100 g  | 469   | 6  | 46.41    | 305   | 633    | C  | 14       |
| 16014   | Beans, black, mature seeds, raw                                       | H-ORAC     | umol TE/100 g | 7593  | 1  |          |       |        | B  | 13       |
|         |   | L-ORAC     | umol TE/100 g | 447   | 1  |          |       |        | B  | 13       |
|         |   | Total-ORAC | umol TE/100 g | 8040  | 1  |          |       |        | B  | 13       |
|         |   | TP         | mg GAE/100 g  | 880   | 1  |          |       |        | B  | 13       |
| 16032   | Beans, kidney, red, mature seeds, raw                                 | H-ORAC     | umol TE/100 g | 8410  | 8  | 1290.85  | 6371  | 14539  | B  | 13, 14   |
|         |   | L-ORAC     | umol TE/100 g | 196   | 2  | 263.75   | 9     | 382    | B  | 13       |
|         |   | Total-ORAC | umol TE/100 g | 8459  | 8  | 1323.00  | 6371  | 14921  | B  | 13, 14   |
|         |   | TP         | mg GAE/100 g  | 637   | 8  | 124.39   | 368   | 1247   | B  | 13, 14   |
| 11033   | Beans, lima, immature seeds, canned, regular pack, solids and liquids | H-ORAC     | umol TE/100 g | 215   | 1  |          |       |        | B  | 13       |
|         |   | L-ORAC     | umol TE/100 g | 27    | 1  |          |       |        | B  | 13       |
|         |   | Total-ORAC | umol TE/100 g | 243   | 1  |          |       |        | B  | 13       |
|         |   | TP         | mg GAE/100 g  | 96    | 1  |          |       |        | B  | 13       |
| 16037   | Beans, navy, mature seeds, raw  | H-ORAC     | umol TE/100 g | 1406  | 4  | 215.28   | 1202  | 2019   | B  | 13, 14   |
|         |   | L-ORAC     | umol TE/100 g | 454   | 1  |          |       |        | B  | 13       |
|         |   | Total-ORAC | umol TE/100 g | 1520  | 4  | 335.19   | 1202  | 2474   | B  | 13, 14   |
|         |   | TP         | mg GAE/100 g  | 94    | 4  | 45.19    | 52    | 223    | B  | 13, 14   |

## Oxygen Radical Absorbance Capacity (ORAC) of Selected Foods – 2007

| NDB No. | Description  | Parameter  | Unit          | Mean | N  | SEM     | Min  | Max   | CC | Ref      |
|---------|--|------------|---------------|------|----|---------|------|-------|----|----------|
| 16040   | Beans, pink, mature seeds, raw                                       | H-ORAC     | umol TE/100 g | 8320 | 3  | 0.00    | 8320 | 8320  | C  | 14       |
|         |  | Total-ORAC | umol TE/100 g | 8320 | 3  | 0.00    | 8320 | 8320  | C  | 14       |
|         |  | TP         | mg GAE/100 g  | 345  | 3  | 0.00    | 345  | 345   | C  | 14       |
| 16043   | Beans, pinto, mature seeds, cooked, boiled, without salt             | H-ORAC     | umol TE/100 g | 846  | 4  | 324.69  | 368  | 1462  | A  | 13       |
|         |  | L-ORAC     | umol TE/100 g | 57   | 4  | 3.64    | 50   | 66    | A  | 13       |
|         |  | Total-ORAC | umol TE/100 g | 904  | 4  | 327.48  | 418  | 1527  | A  | 13       |
|         |  | TP         | mg GAE/100 g  | 128  | 4  | 13.18   | 96   | 149   | A  | 13       |
| 16042   | Beans, pinto, mature seeds, raw                                      | H-ORAC     | umol TE/100 g | 7610 | 5  | 1748.42 | 4637 | 12465 | B  | 13, 14   |
|         |  | L-ORAC     | umol TE/100 g | 423  | 2  | 19.80   | 409  | 437   | B  | 13       |
|         |  | Total-ORAC | umol TE/100 g | 7779 | 5  | 1847.70 | 4637 | 12902 | B  | 13, 14   |
|         |  | TP         | mg GAE/100 g  | 618  | 5  | 162.68  | 341  | 1052  | B  | 13, 14   |
| 11054   | Beans, snap, green variety, canned, regular pack, solids and liquids | H-ORAC     | umol TE/100 g | 206  | 1  |         |      |       | B  | 13       |
|         |  | L-ORAC     | umol TE/100 g | 84   | 1  |         |      |       | B  | 13       |
|         |  | Total-ORAC | umol TE/100 g | 290  | 1  |         |      |       | B  | 13       |
|         |  | TP         | mg GAE/100 g  | 61   | 1  |         |      |       | B  | 13       |
| 11052   | Beans, snap, green, raw  | H-ORAC     | umol TE/100 g | 758  | 52 | 10.69   | 213  | 769   | B  | 7, 13    |
|         |  | L-ORAC     | umol TE/100 g | 55   | 1  |         |      |       | B  | 13       |
|         |  | Total-ORAC | umol TE/100 g | 759  | 52 | 9.65    | 267  | 769   | B  | 7, 13    |
|         |  | TP         | mg GAE/100 g  | 92   | 1  |         |      |       | B  | 13       |
| 11086   | Beet greens, raw   | H-ORAC     | umol TE/100 g | 1946 | 8  | 157.18  | 1168 | 2724  | C  | 2, 6     |
|         |  | Total-ORAC | umol TE/100 g | 1946 | 8  | 157.18  | 1168 | 2724  | C  | 2, 6     |
|         |  | TP         | mg GAE/100 g  | 55   | 8  | 1.03    | 50   | 60    | C  | 2, 6     |
| 11080   | Beets, raw   | H-ORAC     | umol TE/100 g | 1767 | 30 | 73.88   | 1428 | 3632  | B  | 6, 7, 13 |
|         |  | L-ORAC     | umol TE/100 g | 9    | 1  |         |      |       | B  | 13       |
|         |  | Total-ORAC | umol TE/100 g | 1767 | 30 | 74.01   | 1428 | 3632  | B  | 6, 7, 13 |
|         |  | TP         | mg GAE/100 g  | 188  | 5  | 14.48   | 174  | 244   | B  | 6, 13    |
| 09042   | Blackberries, raw  | H-ORAC     | umol TE/100 g | 5245 | 4  | 516.08  | 4622 | 6570  | A  | 13       |
|         |  | L-ORAC     | umol TE/100 g | 103  | 4  | 18.72   | 63   | 133   | A  | 13       |
|         |  | Total-ORAC | umol TE/100 g | 5347 | 4  | 529.79  | 4686 | 6702  | A  | 13       |
|         |  | TP         | mg GAE/100 g  | 660  | 4  | 164.83  | 413  | 1011  | A  | 13       |
| 09050   | Blueberries, raw   | H-ORAC     | umol TE/100 g | 6520 | 9  | 439.11  | 4775 | 9209  | A  | 12, 13   |
|         |  | L-ORAC     | umol TE/100 g | 36   | 8  | 6.90    | 15   | 67    | A  | 13       |
|         |  | Total-ORAC | umol TE/100 g | 6552 | 9  | 436.50  | 4790 | 9209  | A  | 12, 13   |
|         |  | TP         | mg GAE/100 g  | 531  | 8  | 36.19   | 337  | 685   | A  | 13       |
| 99449   | Bread, butternut whole grain   | H-ORAC     | umol TE/100 g | 1986 | 1  |         |      |       | B  | 13       |
|         |  | L-ORAC     | umol TE/100 g | 118  | 1  |         |      |       | B  | 13       |
|         |  | Total-ORAC | umol TE/100 g | 2104 | 1  |         |      |       | B  | 13       |

# Oxygen Radical Absorbance Capacity (ORAC) of Selected Foods – 2007

| NDB No. | Description  | Parameter  | Unit          | Mean | N   | SEM    | Min  | Max  | CC | Ref   |
|---------|--|------------|---------------|------|-----|--------|------|------|----|-------|
| 18035   | Bread, mixed-grain (includes whole-grain, 7-grain) | TP         | mg GAE/100 g  | 246  | 1   |        |      |      | B  | 13    |
|         |  | H-ORAC     | umol TE/100 g | 1298 | 1   |        |      |      | B  | 13    |
|         |  | L-ORAC     | umol TE/100 g | 123  | 1   |        |      |      | B  | 13    |
|         |  | Total-ORAC | umol TE/100 g | 1421 | 1   |        |      |      | B  | 13    |
| 99448   | Bread, Oatnut                                      | TP         | mg GAE/100 g  | 171  | 1   |        |      |      | B  | 13    |
|         |  | H-ORAC     | umol TE/100 g | 1224 | 1   |        |      |      | B  | 13    |
|         |  | L-ORAC     | umol TE/100 g | 94   | 1   |        |      |      | B  | 13    |
|         |  | Total-ORAC | umol TE/100 g | 1318 | 1   |        |      |      | B  | 13    |
| 18044   | Bread, pumpernickel                                | TP         | mg GAE/100 g  | 183  | 1   |        |      |      | B  | 13    |
|         |  | H-ORAC     | umol TE/100 g | 1835 | 1   |        |      |      | B  | 13    |
|         |  | L-ORAC     | umol TE/100 g | 128  | 1   |        |      |      | B  | 13    |
|         |  | Total-ORAC | umol TE/100 g | 1963 | 1   |        |      |      | B  | 13    |
| 11097   | Broccoli raab, cooked                              | TP         | mg GAE/100 g  | 271  | 1   |        |      |      | B  | 13    |
|         |  | H-ORAC     | umol TE/100 g | 1526 | 5   | 118.04 | 1201 | 1722 | A  | 13    |
|         |  | L-ORAC     | umol TE/100 g | 65   | 2   | 8.91   | 58   | 71   | B  | 13    |
|         |  | Total-ORAC | umol TE/100 g | 1552 | 5   | 116.79 | 1259 | 1793 | A  | 13    |
| 11096   | Broccoli raab, raw                                 | TP         | mg GAE/100 g  | 366  | 2   | 79.78  | 310  | 423  | B  | 13    |
|         |  | H-ORAC     | umol TE/100 g | 2809 | 2   | 858.18 | 2202 | 3416 | B  | 13    |
|         |  | L-ORAC     | umol TE/100 g | 274  | 2   | 0.97   | 273  | 275  | B  | 13    |
|         |  | Total-ORAC | umol TE/100 g | 3083 | 2   | 857.21 | 2477 | 3689 | B  | 13    |
| 11091   | Broccoli, cooked, boiled, drained, without salt    | TP         | mg GAE/100 g  | 225  | 8   | 52.96  | 124  | 567  | A  | 6, 13 |
|         |  | H-ORAC     | umol TE/100 g | 2377 | 8   | 381.93 | 841  | 3529 | A  | 6, 13 |
|         |  | L-ORAC     | umol TE/100 g | 33   | 2   | 10.39  | 26   | 41   | B  | 13    |
|         |  | Total-ORAC | umol TE/100 g | 2386 | 8   | 378.11 | 882  | 3529 | A  | 6, 13 |
| 11094   | Broccoli, frozen, spears, unprepared               | TP         | mg GAE/100 g  | 68   | 4   | 0.00   | 68   | 68   | C  | 2     |
|         |  | H-ORAC     | umol TE/100 g | 496  | 4   | 0.00   | 496  | 496  | C  | 2     |
|         |  | Total-ORAC | umol TE/100 g | 496  | 4   | 0.00   | 496  | 496  | C  | 2     |
| 11090   | Broccoli, raw                                      | TP         | mg GAE/100 g  | 337  | 8   | 23.31  | 247  | 406  | A  | 13    |
|         |  | H-ORAC     | umol TE/100 g | 1352 | 138 | 4.17   | 1099 | 1700 | A  | 7, 13 |
|         |  | L-ORAC     | umol TE/100 g | 172  | 8   | 8.92   | 144  | 205  | A  | 13    |
|         |  | Total-ORAC | umol TE/100 g | 1362 | 138 | 6.17   | 1255 | 1844 | A  | 7, 13 |
| 99447   | Cabbage, black, cooked                             | TP         | mg GAE/100 g  | 123  | 4   | 0.00   | 123  | 123  | C  | 6     |
|         |  | H-ORAC     | umol TE/100 g | 1773 | 4   | 0.00   | 1773 | 1773 | C  | 6     |
|         |  | Total-ORAC | umol TE/100 g | 1773 | 4   | 0.00   | 1773 | 1773 | C  | 6     |
| 11110   | Cabbage, cooked, boiled, drained, without salt     | TP         | mg GAE/100 g  | 856  | 4   | 0.00   | 856  | 856  | C  | 6     |
|         |  | H-ORAC     | umol TE/100 g | 856  | 4   | 0.00   | 856  | 856  | C  | 6     |

## Oxygen Radical Absorbance Capacity (ORAC) of Selected Foods – 2007

| NDB No. | Description   | Parameter  | Unit          | Mean  | N   | SEM    | Min   | Max   | CC | Ref         |
|---------|---|------------|---------------|-------|-----|--------|-------|-------|----|-------------|
|         |   | TP         | mg GAE/100 g  | 59    | 4   | 0.00   | 59    | 59    | C  | 6           |
| 11109   | Cabbage, raw  | H-ORAC     | umol TE/100 g | 508   | 115 | 15.66  | 477   | 1756  | A  | 7, 13       |
|         |   | L-ORAC     | umol TE/100 g | 21    | 4   | 3.57   | 15    | 28    | A  | 13          |
|         |   | Total-ORAC | umol TE/100 g | 508   | 115 | 15.66  | 477   | 1756  | A  | 7, 13       |
|         |   | TP         | mg GAE/100 g  | 202   | 4   | 17.11  | 171   | 242   | A  | 13          |
| 11113   | Cabbage, red, cooked, boiled, drained, without salt   | H-ORAC     | umol TE/100 g | 3145  | 4   | 346.12 | 2362  | 3793  | A  | 13          |
|         |   | Total-ORAC | umol TE/100 g | 3145  | 4   | 346.12 | 2362  | 3793  | A  | 13          |
|         |   | TP         | mg GAE/100 g  | 321   | 4   | 33.06  | 274   | 402   | A  | 13          |
| 11112   | Cabbage, red, raw                                     | H-ORAC     | umol TE/100 g | 2252  | 4   | 219.80 | 1948  | 2753  | A  | 13          |
|         |   | L-ORAC     | umol TE/100 g | 20    | 4   | 8.02   | 10    | 41    | A  | 13          |
|         |   | Total-ORAC | umol TE/100 g | 2252  | 4   | 219.80 | 1948  | 2753  | A  | 13          |
|         |   | TP         | mg GAE/100 g  | 254   | 4   | 10.29  | 237   | 279   | A  | 13          |
| 11115   | Cabbage, savoy, cooked, boiled, drained, without salt | H-ORAC     | umol TE/100 g | 2050  | 4   | 0.00   | 2050  | 2050  | C  | 6           |
|         |   | Total-ORAC | umol TE/100 g | 2050  | 4   | 0.00   | 2050  | 2050  | C  | 6           |
|         |   | TP         | mg GAE/100 g  | 119   | 4   | 0.00   | 119   | 119   | C  | 6           |
| 99412   | Candies, chocolate, dark                              | H-ORAC     | umol TE/100 g | 21800 | 5   | 0.00   | 21800 | 21800 | C  | 4           |
|         |   | L-ORAC     | umol TE/100 g | 880   | 5   | 0.00   | 880   | 880   | C  | 4           |
|         |   | Total-ORAC | umol TE/100 g | 20823 | 14  | 551.03 | 15170 | 24600 | B  | 4, 5        |
|         |   | TP         | mg GAE/100 g  | 1297  | 9   | 29.67  | 1173  | 1488  | B  | 5           |
| 19120   | Candies, milk chocolate                               | H-ORAC     | umol TE/100 g | 7203  | 7   | 592.10 | 5132  | 9249  | A  | 4, 13       |
|         |   | L-ORAC     | umol TE/100 g | 881   | 7   | 96.32  | 670   | 1208  | A  | 4, 13       |
|         |   | Total-ORAC | umol TE/100 g | 7528  | 10  | 593.01 | 4170  | 10430 | B  | 4, 5, 13    |
|         |   | TP         | mg GAE/100 g  | 507   | 4   | 118.58 | 317   | 696   | B  | 5, 13       |
| 19080   | Candies, semisweet chocolate                          | Total-ORAC | umol TE/100 g | 18053 | 9   | 152.34 | 17400 | 19030 | B  | 5           |
|         |   | TP         | mg GAE/100 g  | 1238  | 9   | 10.07  | 1176  | 1288  | B  | 5           |
| 11960   | Carrots, baby, raw                                    | H-ORAC     | umol TE/100 g | 355   | 7   | 60.40  | 202   | 662   | A  | 13          |
|         |   | L-ORAC     | umol TE/100 g | 81    | 7   | 9.06   | 45    | 104   | A  | 13          |
|         |   | Total-ORAC | umol TE/100 g | 436   | 7   | 58.64  | 299   | 742   | A  | 13          |
|         |   | TP         | mg GAE/100 g  | 45    | 7   | 5.66   | 31    | 70    | A  | 13          |
| 11125   | Carrots, cooked, boiled, drained, without salt        | H-ORAC     | umol TE/100 g | 310   | 8   | 22.74  | 263   | 442   | A  | 2, 13       |
|         |   | L-ORAC     | umol TE/100 g | 18    | 3   | 6.65   | 11    | 29    | A  | 2, 13       |
|         |   | Total-ORAC | umol TE/100 g | 317   | 8   | 25.69  | 263   | 471   | A  | 2, 13       |
|         |   | TP         | mg GAE/100 g  | 88    | 8   | 22.77  | 20    | 193   | A  | 2, 13       |
| 11124   | Carrots, raw  | H-ORAC     | umol TE/100 g | 663   | 79  | 16.02  | 107   | 1405  | B  | 2, 6, 7, 13 |
|         |   | L-ORAC     | umol TE/100 g | 48    | 5   | 13.59  | 5     | 80    | A  | 13          |
|         |   | Total-ORAC | umol TE/100 g | 666   | 79  | 17.22  | 107   | 1462  | B  | 2, 6, 7, 13 |
|         |   | TP         | mg GAE/100 g  | 35    | 20  | 2.57   | 16    | 68    | A  | 6, 2, 13    |

## Oxygen Radical Absorbance Capacity (ORAC) of Selected Foods – 2007

| NDB No. | Description  | Parameter  | Unit          | Mean | N  | SEM    | Min  | Max  | CC | Ref      |
|---------|--|------------|---------------|------|----|--------|------|------|----|----------|
| 11935   | Catsup   | H-ORAC     | umol TE/100 g | 535  | 1  |        |      |      | B  | 13       |
|         |  | L-ORAC     | umol TE/100 g | 43   | 1  |        |      |      | B  | 13       |
|         |  | Total-ORAC | umol TE/100 g | 578  | 1  |        |      |      | B  | 13       |
|         |  | TP         | mg GAE/100 g  | 249  | 1  |        |      |      | B  | 13       |
| 11136   | Cauliflower, cooked, boiled, drained, without salt           | H-ORAC     | umol TE/100 g | 620  | 4  | 0.00   | 620  | 620  | C  | 2        |
|         |  | Total-ORAC | umol TE/100 g | 620  | 4  | 0.00   | 620  | 620  | C  | 2        |
|         |  | TP         | mg GAE/100 g  | 61   | 4  | 0.00   | 61   | 61   | C  | 2        |
| 11135   | Cauliflower, raw   | H-ORAC     | umol TE/100 g | 828  | 62 | 3.91   | 610  | 925  | B  | 6, 7, 13 |
|         |  | L-ORAC     | umol TE/100 g | 37   | 1  |        |      |      | B  | 13       |
|         |  | Total-ORAC | umol TE/100 g | 829  | 62 | 3.37   | 647  | 925  | B  | 6, 7, 13 |
|         |  | TP         | mg GAE/100 g  | 111  | 5  | 41.99  | 70   | 274  | B  | 6, 13    |
| 11143   | Celery, raw  | H-ORAC     | umol TE/100 g | 470  | 12 | 53.17  | 261  | 837  | A  | 6, 13    |
|         |  | L-ORAC     | umol TE/100 g | 40   | 8  | 2.48   | 29   | 49   | A  | 13       |
|         |  | Total-ORAC | umol TE/100 g | 497  | 12 | 55.47  | 289  | 878  | A  | 6, 13    |
|         |  | TP         | mg GAE/100 g  | 42   | 12 | 6.60   | 15   | 86   | A  | 6, 13    |
| 99450   | Cereals ready-to-eat, granola, low-fat, with raisins         | H-ORAC     | umol TE/100 g | 2168 | 1  |        |      |      | B  | 13       |
|         |  | L-ORAC     | umol TE/100 g | 126  | 1  |        |      |      | B  | 13       |
|         |  | Total-ORAC | umol TE/100 g | 2294 | 1  |        |      |      | B  | 13       |
|         |  | TP         | mg GAE/100 g  | 367  | 1  |        |      |      | B  | 13       |
| 99452   | Cereals ready-to-eat, oat bran                               | H-ORAC     | umol TE/100 g | 1971 | 2  | 285.67 | 1769 | 2173 | B  | 13       |
|         |  | L-ORAC     | umol TE/100 g | 212  | 2  | 133.64 | 117  | 306  | B  | 13       |
|         |  | Total-ORAC | umol TE/100 g | 2183 | 2  | 419.31 | 1886 | 2479 | B  | 13       |
|         |  | TP         | mg GAE/100 g  | 167  | 2  | 5.66   | 163  | 171  | B  | 13       |
| 99453   | Cereals ready-to-eat, oatmeal, toasted squares               | H-ORAC     | umol TE/100 g | 2013 | 1  |        |      |      | B  | 13       |
|         |  | L-ORAC     | umol TE/100 g | 130  | 1  |        |      |      | B  | 13       |
|         |  | Total-ORAC | umol TE/100 g | 2143 | 1  |        |      |      | B  | 13       |
|         |  | TP         | mg GAE/100 g  | 271  | 1  |        |      |      | B  | 13       |
| 08049   | Cereals ready-to-eat, QUAKER, QUAKER OAT LIFE, plain         | H-ORAC     | umol TE/100 g | 1422 | 1  |        |      |      | B  | 13       |
|         |  | L-ORAC     | umol TE/100 g | 95   | 1  |        |      |      | B  | 13       |
|         |  | Total-ORAC | umol TE/100 g | 1517 | 1  |        |      |      | B  | 13       |
|         |  | TP         | mg GAE/100 g  | 117  | 1  |        |      |      | B  | 13       |
| 99454   | Cereals ready-to-eat, toasted oatmeal                        | H-ORAC     | umol TE/100 g | 2086 | 1  |        |      |      | B  | 13       |
|         |  | L-ORAC     | umol TE/100 g | 89   | 1  |        |      |      | B  | 13       |
|         |  | Total-ORAC | umol TE/100 g | 2175 | 1  |        |      |      | B  | 13       |
|         |  | TP         | mg GAE/100 g  | 183  | 1  |        |      |      | B  | 13       |
| 08147   | Cereals ready-to-eat, wheat, shredded, plain, sugar and salt | H-ORAC     | umol TE/100 g | 1222 | 1  |        |      |      | B  | 13       |
|         |  | L-ORAC     | umol TE/100 g | 81   | 1  |        |      |      | B  | 13       |

## Oxygen Radical Absorbance Capacity (ORAC) of Selected Foods – 2007

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| NDB No. | Description  | Parameter  | Unit          | Mean  | N | SEM    | Min   | Max   | CC | Ref |
|---------|--|------------|---------------|-------|---|--------|-------|-------|----|-----|
|         | free   | Total-ORAC | umol TE/100 g | 1303  | 1 |        |       |       | B  | 13  |
|         |  | TP         | mg GAE/100 g  | 94    | 1 |        |       |       | B  | 13  |
| 08122   | Cereals, oats, instant, fortified, plain, dry              | H-ORAC     | umol TE/100 g | 2026  | 1 |        |       |       | B  | 13  |
|         |  | L-ORAC     | umol TE/100 g | 282   | 1 |        |       |       | B  | 13  |
|         |  | Total-ORAC | umol TE/100 g | 2308  | 1 |        |       |       | B  | 13  |
|         |  | TP         | mg GAE/100 g  | 183   | 1 |        |       |       | B  | 13  |
| 97103   | Cereals, oats, old fashioned, uncooked                     | H-ORAC     | umol TE/100 g | 1402  | 1 |        |       |       | B  | 13  |
|         |  | L-ORAC     | umol TE/100 g | 306   | 1 |        |       |       | B  | 13  |
|         |  | Total-ORAC | umol TE/100 g | 1708  | 1 |        |       |       | B  | 13  |
|         |  | TP         | mg GAE/100 g  | 163   | 1 |        |       |       | B  | 13  |
| 99455   | Cereals, oats, quick, uncooked                             | H-ORAC     | umol TE/100 g | 1763  | 1 |        |       |       | B  | 13  |
|         |  | L-ORAC     | umol TE/100 g | 406   | 1 |        |       |       | B  | 13  |
|         |  | Total-ORAC | umol TE/100 g | 2169  | 1 |        |       |       | B  | 13  |
|         |  | TP         | mg GAE/100 g  | 183   | 1 |        |       |       | B  | 13  |
| 97097   | Cereals, ready-to-eat, corn flakes                         | H-ORAC     | umol TE/100 g | 2302  | 1 |        |       |       | B  | 13  |
|         |  | L-ORAC     | umol TE/100 g | 57    | 1 |        |       |       | B  | 13  |
|         |  | Total-ORAC | umol TE/100 g | 2359  | 1 |        |       |       | B  | 13  |
|         |  | TP         | mg GAE/100 g  | 842   | 1 |        |       |       | B  | 13  |
| 09070   | Cherries, sweet, raw                                       | H-ORAC     | umol TE/100 g | 3348  | 4 | 225.94 | 3102  | 3930  | A  | 13  |
|         |  | L-ORAC     | umol TE/100 g | 17    | 4 | 7.03   | 7     | 32    | A  | 13  |
|         |  | Total-ORAC | umol TE/100 g | 3365  | 4 | 232.16 | 3108  | 3962  | A  | 13  |
|         |  | TP         | mg GAE/100 g  | 339   | 4 | 23.70  | 295   | 388   | A  | 13  |
| 16056   | Chickpeas (garbanzo beans, bengal gram), mature seeds, raw | H-ORAC     | umol TE/100 g | 847   | 3 | 0.00   | 847   | 847   | C  | 14  |
|         |  | Total-ORAC | umol TE/100 g | 847   | 3 | 0.00   | 847   | 847   | C  | 14  |
|         |  | TP         | mg GAE/100 g  | 90    | 3 | 0.00   | 90    | 90    | C  | 14  |
| 35133   | Chilchen (Red Berry Beverage) (Navajo)                     | H-ORAC     | umol TE/100 g | 740   | 1 |        |       |       | B  | 13  |
|         |  | Total-ORAC | umol TE/100 g | 740   | 1 |        |       |       | B  | 13  |
|         |  | TP         | mg GAE/100 g  | 20    | 1 |        |       |       | B  | 13  |
| 11156   | Chives, raw  | H-ORAC     | umol TE/100 g | 2094  | 4 | 0.00   | 2094  | 2094  | C  | 6   |
|         |  | Total-ORAC | umol TE/100 g | 2094  | 4 | 0.00   | 2094  | 2094  | C  | 6   |
|         |  | TP         | mg GAE/100 g  | 85    | 4 | 0.00   | 85    | 85    | C  | 6   |
| 99445   | Chocolale, dutched powder                                  | H-ORAC     | umol TE/100 g | 39900 | 2 | 0.00   | 39900 | 39900 | C  | 4   |
|         |  | L-ORAC     | umol TE/100 g | 300   | 2 | 0.00   | 300   | 300   | C  | 4   |
|         |  | Total-ORAC | umol TE/100 g | 40200 | 2 | 0.00   | 40200 | 40200 | C  | 4   |
| 14181   | Chocolate syrup  | Total-ORAC | umol TE/100 g | 6330  | 3 | 356.93 | 5750  | 6670  | C  | 5   |
|         |  | TP         | mg GAE/100 g  | 417   | 3 | 40.59  | 366   | 479   | C  | 5   |
| 99012   | Chokeberry, raw  | H-ORAC     | umol TE/100 g | 15820 | 1 |        |       |       | C  | 12  |



## Oxygen Radical Absorbance Capacity (ORAC) of Selected Foods – 2007

| NDB No. | Description   | Parameter  | Unit          | Mean  | N  | SEM     | Min   | Max   | CC | Ref   |
|---------|---|------------|---------------|-------|----|---------|-------|-------|----|-------|
|         |   | L-ORAC     | umol TE/100 g | 242   | 1  |         |       |       | C  | 12    |
|         |   | Total-ORAC | umol TE/100 g | 16062 | 1  |         |       |       | C  | 12    |
|         |   | TP         | mg GAE/100 g  | 2010  | 1  |         |       |       | C  | 12    |
| 14192   | Cocoa mix, powder   | H-ORAC     | umol TE/100 g | 485   | 2  | 0.00    | 485   | 485   | C  | 11    |
|         |   | Total-ORAC | umol TE/100 g | 485   | 2  | 0.00    | 485   | 485   | C  | 11    |
| 19165   | Cocoa, dry powder, unsweetened  | H-ORAC     | umol TE/100 g | 82000 | 3  | 0.00    | 82000 | 82000 | C  | 4     |
|         |   | L-ORAC     | umol TE/100 g | 600   | 3  | 0.00    | 600   | 600   | C  | 4     |
|         |   | Total-ORAC | umol TE/100 g | 80933 | 12 | 1021.22 | 72000 | 87500 | B  | 4, 5  |
|         |   | TP         | mg GAE/100 g  | 5240  | 9  | 132.13  | 4530  | 6020  | B  | 5     |
| 11165   | Coriander (cilantro) leaves, raw  | H-ORAC     | umol TE/100 g | 5141  | 4  | 0.00    | 5141  | 5141  | C  | 6     |
|         |   | Total-ORAC | umol TE/100 g | 5141  | 4  | 0.00    | 5141  | 5141  | C  | 6     |
|         |   | TP         | mg GAE/100 g  | 151   | 4  | 0.00    | 151   | 151   | C  | 6     |
| 11170   | Corn, sweet, yellow, canned, brine pack, regular pack, solids and liquids | H-ORAC     | umol TE/100 g | 361   | 1  |         |       |       | B  | 13    |
|         |   | L-ORAC     | umol TE/100 g | 52    | 1  |         |       |       | B  | 13    |
|         |   | Total-ORAC | umol TE/100 g | 413   | 1  |         |       |       | B  | 13    |
|         |   | TP         | mg GAE/100 g  | 169   | 1  |         |       |       | B  | 13    |
| 11178   | Corn, sweet, yellow, frozen, kernels cut off cob, unprepared              | H-ORAC     | umol TE/100 g | 447   | 1  |         |       |       | B  | 13    |
|         |   | L-ORAC     | umol TE/100 g | 75    | 1  |         |       |       | B  | 13    |
|         |   | Total-ORAC | umol TE/100 g | 522   | 1  |         |       |       | B  | 13    |
|         |   | TP         | mg GAE/100 g  | 174   | 1  |         |       |       | B  | 13    |
| 11167   | Corn, sweet, yellow, raw  | H-ORAC     | umol TE/100 g | 593   | 1  |         |       |       | B  | 13    |
|         |   | L-ORAC     | umol TE/100 g | 135   | 1  |         |       |       | B  | 13    |
|         |   | Total-ORAC | umol TE/100 g | 728   | 1  |         |       |       | B  | 13    |
|         |   | TP         | mg GAE/100 g  | 211   | 1  |         |       |       | B  | 13    |
| 16062   | Cowpeas, common (blackeyes, crowder, southern), mature seeds, raw         | H-ORAC     | umol TE/100 g | 3707  | 1  |         |       |       | B  | 13    |
|         |   | L-ORAC     | umol TE/100 g | 636   | 1  |         |       |       | B  | 13    |
|         |   | Total-ORAC | umol TE/100 g | 4343  | 1  |         |       |       | B  | 13    |
|         |   | TP         | mg GAE/100 g  | 647   | 1  |         |       |       | B  | 13    |
| 09078   | Cranberries, raw  | H-ORAC     | umol TE/100 g | 9382  | 3  | 85.17   | 9291  | 9519  | A  | 13    |
|         |   | L-ORAC     | umol TE/100 g | 202   | 3  | 25.92   | 161   | 229   | A  | 13    |
|         |   | Total-ORAC | umol TE/100 g | 9584  | 3  | 61.53   | 9508  | 9679  | A  | 13    |
|         |   | TP         | mg GAE/100 g  | 718   | 3  | 3.90    | 715   | 725   | A  | 13    |
| 11206   | Cucumber, peeled, raw   | H-ORAC     | umol TE/100 g | 126   | 4  | 18.84   | 94    | 171   | A  | 13    |
|         |   | L-ORAC     | umol TE/100 g | 14    | 4  | 4.79    | 6     | 24    | A  | 13    |
|         |   | Total-ORAC | umol TE/100 g | 126   | 4  | 18.84   | 94    | 171   | A  | 13    |
|         |   | TP         | mg GAE/100 g  | 22    | 4  | 1.74    | 18    | 25    | A  | 13    |
| 11205   | Cucumber, with peel, raw  | H-ORAC     | umol TE/100 g | 214   | 12 | 21.83   | 89    | 344   | A  | 6, 13 |

## Oxygen Radical Absorbance Capacity (ORAC) of Selected Foods – 2007

| NDB No. | Description                                     | Parameter  | Unit          | Mean  | N  | SEM     | Min  | Max   | CC | Ref      |
|---------|---|------------|---------------|-------|----|---------|------|-------|----|----------|
|         |   | L-ORAC     | umol TE/100 g | 28    | 4  | 1.74    | 24   | 31    | A  | 13       |
|         |   | Total-ORAC | umol TE/100 g | 214   | 12 | 21.83   | 89   | 344   | A  | 6, 13    |
|         |   | TP         | mg GAE/100 g  | 29    | 12 | 1.50    | 20   | 37    | A  | 6, 13    |
| 09083   | Currants, european black, raw                   | H-ORAC     | umol TE/100 g | 10060 | 6  | 1445.97 | 4900 | 10060 | B  | 12       |
|         |   | L-ORAC     | umol TE/100 g | 84    | 6  | 8.09    | 68   | 115   | B  | 12       |
|         |   | Total-ORAC | umol TE/100 g | 7960  | 6  | 866.80  | 5010 | 9290  | B  | 12       |
|         |   | TP         | mg GAE/100 g  | 1330  | 6  | 113.33  | 840  | 1410  | B  | 12       |
| 99044   | Currants, red, raw                              | H-ORAC     | umol TE/100 g | 3260  | 1  |         |      |       | C  | 12       |
|         |   | L-ORAC     | umol TE/100 g | 127   | 1  |         |      |       | C  | 12       |
|         |   | Total-ORAC | umol TE/100 g | 3387  | 1  |         |      |       | C  | 12       |
|         |   | TP         | mg GAE/100 g  | 540   | 1  |         |      |       | C  | 12       |
| 09087   | Dates, deglet noor                              | H-ORAC     | umol TE/100 g | 3863  | 7  | 131.20  | 3579 | 4514  | A  | 13       |
|         |   | L-ORAC     | umol TE/100 g | 32    | 7  | 6.35    | 16   | 59    | A  | 13       |
|         |   | Total-ORAC | umol TE/100 g | 3895  | 7  | 130.03  | 3609 | 4536  | A  | 13       |
|         |   | TP         | mg GAE/100 g  | 661   | 7  | 45.20   | 436  | 797   | A  | 13       |
| 09421   | Dates, medjool                                  | H-ORAC     | umol TE/100 g | 2360  | 2  | 446.68  | 2044 | 2676  | B  | 13       |
|         |   | L-ORAC     | umol TE/100 g | 27    | 2  | 9.16    | 21   | 34    | B  | 13       |
|         |   | Total-ORAC | umol TE/100 g | 2387  | 2  | 455.84  | 2065 | 2709  | B  | 13       |
|         |   | TP         | mg GAE/100 g  | 572   | 2  | 30.38   | 551  | 594   | B  | 13       |
| 02045   | Dill weed, fresh                                | H-ORAC     | umol TE/100 g | 4392  | 4  | 0.00    | 4392 | 4392  | C  | 6        |
|         |   | Total-ORAC | umol TE/100 g | 4392  | 4  | 0.00    | 4392 | 4392  | C  | 6        |
|         |   | TP         | mg GAE/100 g  | 243   | 4  | 0.00    | 243  | 243   | C  | 6        |
| 11210   | Eggplant, cooked, boiled, drained, without salt | H-ORAC     | umol TE/100 g | 245   | 4  | 0.00    | 245  | 245   | C  | 2        |
|         |   | Total-ORAC | umol TE/100 g | 245   | 4  | 0.00    | 245  | 245   | C  | 2        |
|         |   | TP         | mg GAE/100 g  | 21    | 4  | 0.00    | 21   | 21    | C  | 2        |
| 11209   | Eggplant, raw                                   | H-ORAC     | umol TE/100 g | 932   | 17 | 115.88  | 344  | 2509  | B  | 2, 6, 13 |
|         |   | L-ORAC     | umol TE/100 g | 24    | 1  |         |      |       | B  | 13       |
|         |   | Total-ORAC | umol TE/100 g | 933   | 17 | 117.10  | 344  | 2533  | B  | 2, 6, 13 |
|         |   | TP         | mg GAE/100 g  | 63    | 17 | 12.15   | 29   | 252   | B  | 2, 6, 13 |
| 09088   | Elderberries, raw                               | H-ORAC     | umol TE/100 g | 14500 | 1  |         |      |       | C  | 12       |
|         |   | L-ORAC     | umol TE/100 g | 197   | 1  |         |      |       | C  | 12       |
|         |   | Total-ORAC | umol TE/100 g | 14697 | 1  |         |      |       | C  | 12       |
|         |   | TP         | mg GAE/100 g  | 1950  | 1  |         |      |       | C  | 12       |
| 11957   | Fennel, bulb, raw                               | H-ORAC     | umol TE/100 g | 307   | 8  | 11.01   | 252  | 361   | C  | 6        |
|         |   | Total-ORAC | umol TE/100 g | 307   | 8  | 11.01   | 252  | 361   | C  | 6        |
|         |   | TP         | mg GAE/100 g  | 26    | 8  | 1.00    | 21   | 31    | C  | 6        |
| 09089   | Figs, raw                                       | H-ORAC     | umol TE/100 g | 3200  | 7  | 206.67  | 2167 | 3667  | A  | 13       |

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| NDB No. | Description                              | Parameter  | Unit          | Mean  | N  | SEM    | Min   | Max   | CC | Ref   |
|---------|--|------------|---------------|-------|----|--------|-------|-------|----|-------|
|         |  | L-ORAC     | umol TE/100 g | 183   | 7  | 14.96  | 114   | 213   | A  | 13    |
|         |  | Total-ORAC | umol TE/100 g | 3383  | 7  | 201.44 | 2380  | 3868  | A  | 13    |
|         |  | TP         | mg GAE/100 g  | 960   | 7  | 45.13  | 781   | 1104  | A  | 13    |
| 11215   | Garlic, raw                              | H-ORAC     | umol TE/100 g | 5346  | 4  | 0.00   | 5346  | 5346  | C  | 6     |
|         |  | Total-ORAC | umol TE/100 g | 5346  | 4  | 0.00   | 5346  | 5346  | C  | 6     |
|         |  | TP         | mg GAE/100 g  | 92    | 4  | 0.00   | 92    | 92    | C  | 6     |
| 11216   | Ginger root, raw                         | H-ORAC     | umol TE/100 g | 14840 | 4  | 0.00   | 14840 | 14840 | C  | 6     |
|         |  | Total-ORAC | umol TE/100 g | 14840 | 4  | 0.00   | 14840 | 14840 | C  | 6     |
|         |  | TP         | mg GAE/100 g  | 227   | 4  | 0.00   | 227   | 227   | C  | 6     |
| 09107   | Gooseberries, raw                        | H-ORAC     | umol TE/100 g | 3583  | 11 | 193.48 | 2040  | 4130  | B  | 12    |
|         |  | L-ORAC     | umol TE/100 g | 23    | 11 | 3.40   | 15    | 45    | B  | 12    |
|         |  | Total-ORAC | umol TE/100 g | 3277  | 11 | 166.40 | 2080  | 4140  | B  | 12    |
|         |  | TP         | mg GAE/100 g  | 518   | 11 | 23.53  | 340   | 630   | B  | 12    |
| 99050   | Grape juice, white                       | H-ORAC     | umol TE/100 g | 793   | 78 | 7.80   | 318   | 1161  | B  | 8, 11 |
|         |  | Total-ORAC | umol TE/100 g | 793   | 78 | 7.80   | 318   | 1161  | B  | 8, 11 |
| 09128   | Grapefruit juice, white, raw             | H-ORAC     | umol TE/100 g | 1238  | 1  |        |       |       | B  | 13    |
|         |  | Total-ORAC | umol TE/100 g | 1238  | 1  |        |       |       | B  | 13    |
|         |  | TP         | mg GAE/100 g  | 336   | 1  |        |       |       | B  | 13    |
| 09112   | Grapefruit, raw, pink and red, all areas | H-ORAC     | umol TE/100 g | 1512  | 8  | 127.05 | 1121  | 2030  | A  | 13    |
|         |  | L-ORAC     | umol TE/100 g | 35    | 8  | 3.87   | 19    | 53    | A  | 13    |
|         |  | Total-ORAC | umol TE/100 g | 1548  | 8  | 125.17 | 1164  | 2066  | A  | 13    |
|         |  | TP         | mg GAE/100 g  | 214   | 8  | 12.53  | 167   | 268   | A  | 13    |
| 97074   | Grapes, red, raw                         | H-ORAC     | umol TE/100 g | 1260  | 4  | 183.27 | 985   | 1646  | A  | 13    |
|         |  | Total-ORAC | umol TE/100 g | 1260  | 4  | 183.27 | 985   | 1646  | A  | 13    |
|         |  | TP         | mg GAE/100 g  | 177   | 4  | 7.15   | 169   | 195   | A  | 13    |
| 99047   | Grapes, white or green, raw              | H-ORAC     | umol TE/100 g | 1118  | 4  | 95.97  | 905   | 1303  | A  | 13    |
|         |  | Total-ORAC | umol TE/100 g | 1118  | 4  | 95.97  | 905   | 1303  | A  | 13    |
|         |  | TP         | mg GAE/100 g  | 145   | 4  | 6.08   | 131   | 156   | A  | 13    |
| 99428   | Guava, red-fleshed                       | Total-ORAC | umol TE/100 g | 1990  | 3  | 105.59 | 1820  | 2100  | C  | 10    |
|         |  | TP         | mg GAE/100 g  | 247   | 3  | 48.43  | 170   | 301   | C  | 10    |
| 99429   | Guava, white-fleshed                     | Total-ORAC | umol TE/100 g | 2550  | 1  |        |       |       | C  | 10    |
|         |  | TP         | mg GAE/100 g  | 345   | 1  |        |       |       | C  | 10    |
| 99430   | Juice, Blueberry                         | H-ORAC     | umol TE/100 g | 2906  | 7  | 70.35  | 2515  | 3063  | B  | 8, 11 |
|         |  | Total-ORAC | umol TE/100 g | 2906  | 7  | 70.35  | 2515  | 3063  | B  | 8, 11 |
| 99431   | Juice, Concord grape                     | H-ORAC     | umol TE/100 g | 2377  | 27 | 19.89  | 1873  | 2492  | B  | 8, 11 |
|         |  | Total-ORAC | umol TE/100 g | 2377  | 27 | 19.89  | 1873  | 2492  | B  | 8, 11 |
| 99432   | Juice, cranberry, 100% -                 | H-ORAC     | umol TE/100 g | 865   | 5  | 0.00   | 865   | 865   | B  | 11    |

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| NDB No. | Description   | Parameter  | Unit          | Mean | N  | SEM    | Min  | Max  | CC | Ref |
|---------|---|------------|---------------|------|----|--------|------|------|----|-----|
|         | cranberry blend, red                                      | Total-ORAC | umol TE/100 g | 865  | 5  | 0.00   | 865  | 865  | B  | 11  |
| 99433   | Juice, cranberry, white                                   | H-ORAC     | umol TE/100 g | 232  | 4  | 0.00   | 232  | 232  | C  | 11  |
|         |   | Total-ORAC | umol TE/100 g | 232  | 4  | 0.00   | 232  | 232  | C  | 11  |
| 99434   | Juice, Cranberry/Concord grape                            | H-ORAC     | umol TE/100 g | 1480 | 5  | 0.00   | 1480 | 1480 | B  | 8   |
|         |   | Total-ORAC | umol TE/100 g | 1480 | 5  | 0.00   | 1480 | 1480 | B  | 8   |
| 99435   | Juice, Pomegranate, 100%                                  | H-ORAC     | umol TE/100 g | 2341 | 7  | 0.00   | 2341 | 2341 | B  | 11  |
|         |   | Total-ORAC | umol TE/100 g | 2341 | 7  | 0.00   | 2341 | 2341 | B  | 11  |
| 99436   | Juice, red grape  | H-ORAC     | umol TE/100 g | 1788 | 5  | 0.00   | 1788 | 1788 | B  | 8   |
|         |   | Total-ORAC | umol TE/100 g | 1788 | 5  | 0.00   | 1788 | 1788 | B  | 8   |
| 99437   | Juice, strawberry   | H-ORAC     | umol TE/100 g | 1002 | 5  | 0.00   | 1002 | 1002 | B  | 8   |
|         |   | Total-ORAC | umol TE/100 g | 1002 | 5  | 0.00   | 1002 | 1002 | B  | 8   |
| 09148   | Kiwi fruit, (chinese gooseberries), fresh, raw            | H-ORAC     | umol TE/100 g | 858  | 8  | 71.87  | 695  | 1263 | A  | 13  |
|         |   | L-ORAC     | umol TE/100 g | 24   | 8  | 4.42   | 10   | 40   | A  | 13  |
|         |   | Total-ORAC | umol TE/100 g | 882  | 8  | 73.06  | 711  | 1303 | A  | 13  |
|         |   | TP         | mg GAE/100 g  | 267  | 8  | 8.71   | 227  | 291  | A  | 13  |
| 97079   | Kiwi, gold, raw   | H-ORAC     | umol TE/100 g | 1159 | 1  |        |      |      | B  | 13  |
|         |   | L-ORAC     | umol TE/100 g | 51   | 1  |        |      |      | B  | 13  |
|         |   | Total-ORAC | umol TE/100 g | 1210 | 1  |        |      |      | B  | 13  |
|         |   | TP         | mg GAE/100 g  | 366  | 1  |        |      |      | B  | 13  |
| 11246   | Leeks, (bulb and lower leaf-portion), raw                 | H-ORAC     | umol TE/100 g | 490  | 4  | 0.00   | 490  | 490  | C  | 6   |
|         |   | Total-ORAC | umol TE/100 g | 490  | 4  | 0.00   | 490  | 490  | C  | 6   |
|         |   | TP         | mg GAE/100 g  | 47   | 4  | 0.00   | 47   | 47   | C  | 6   |
| 99112   | Lemon balm, leaves, raw                                   | H-ORAC     | umol TE/100 g | 5997 | 4  | 0.00   | 5997 | 5997 | C  | 6   |
|         |   | Total-ORAC | umol TE/100 g | 5997 | 4  | 0.00   | 5997 | 5997 | C  | 6   |
|         |   | TP         | mg GAE/100 g  | 490  | 4  | 0.00   | 490  | 490  | C  | 6   |
| 09152   | Lemon juice, raw  | H-ORAC     | umol TE/100 g | 1225 | 1  |        |      |      | B  | 13  |
|         |   | Total-ORAC | umol TE/100 g | 1225 | 1  |        |      |      | B  | 13  |
|         |   | TP         | mg GAE/100 g  | 175  | 1  |        |      |      | B  | 13  |
| 16069   | Lentils, raw  | H-ORAC     | umol TE/100 g | 7282 | 33 | 94.14  | 5357 | 8613 | B  | 14  |
|         |   | Total-ORAC | umol TE/100 g | 7282 | 33 | 94.14  | 5357 | 8613 | B  | 14  |
|         |   | TP         | mg GAE/100 g  | 628  | 33 | 12.13  | 431  | 869  | B  | 14  |
| 11250   | Lettuce, butterhead (includes boston and bibb types), raw | H-ORAC     | umol TE/100 g | 1321 | 8  | 406.82 | 332  | 3633 | A  | 13  |
|         |   | L-ORAC     | umol TE/100 g | 103  | 8  | 19.75  | 46   | 211  | A  | 13  |
|         |   | Total-ORAC | umol TE/100 g | 1423 | 8  | 425.81 | 382  | 3845 | A  | 13  |
|         |   | TP         | mg GAE/100 g  | 100  | 8  | 21.64  | 24   | 203  | A  | 13  |
| 11251   | Lettuce, cos or romaine, raw                              | H-ORAC     | umol TE/100 g | 855  | 12 | 71.16  | 382  | 1244 | A  | 13  |
|         |   | L-ORAC     | umol TE/100 g | 162  | 8  | 22.03  | 87   | 282  | A  | 13  |

## Oxygen Radical Absorbance Capacity (ORAC) of Selected Foods – 2007

| NDB No. | Description                                      | Parameter  | Unit          | Mean  | N  | SEM    | Min   | Max   | CC | Ref   |
|---------|--|------------|---------------|-------|----|--------|-------|-------|----|-------|
|         |  | Total-ORAC | umol TE/100 g | 963   | 12 | 70.81  | 570   | 1428  | A  | 13    |
|         |  | TP         | mg GAE/100 g  | 73    | 12 | 7.30   | 48    | 123   | A  | 13    |
| 11253   | Lettuce, green leaf, raw                         | H-ORAC     | umol TE/100 g | 1391  | 20 | 74.50  | 802   | 2127  | A  | 6, 13 |
|         |  | L-ORAC     | umol TE/100 g | 141   | 8  | 9.77   | 111   | 183   | A  | 13    |
|         |  | Total-ORAC | umol TE/100 g | 1447  | 20 | 78.32  | 914   | 2170  | A  | 6, 13 |
|         |  | TP         | mg GAE/100 g  | 90    | 20 | 8.59   | 50    | 190   | A  | 6, 13 |
| 11252   | Lettuce, iceberg (includes crisphead types), raw | H-ORAC     | umol TE/100 g | 406   | 7  | 119.97 | 87    | 758   | A  | 13    |
|         |  | L-ORAC     | umol TE/100 g | 33    | 7  | 4.15   | 20    | 50    | A  | 13    |
|         |  | Total-ORAC | umol TE/100 g | 438   | 7  | 117.97 | 137   | 784   | A  | 13    |
|         |  | TP         | mg GAE/100 g  | 50    | 7  | 11.30  | 21    | 97    | A  | 13    |
| 11257   | Lettuce, red leaf, raw                           | H-ORAC     | umol TE/100 g | 2287  | 12 | 228.90 | 1019  | 3323  | A  | 13    |
|         |  | L-ORAC     | umol TE/100 g | 138   | 8  | 8.33   | 98    | 168   | A  | 13    |
|         |  | Total-ORAC | umol TE/100 g | 2380  | 12 | 218.79 | 1161  | 3323  | A  | 13    |
|         |  | TP         | mg GAE/100 g  | 111   | 12 | 7.55   | 74    | 175   | A  | 13    |
| 09160   | Lime juice, raw                                  | H-ORAC     | umol TE/100 g | 823   | 4  | 0.00   | 823   | 823   | B  | 13    |
|         |  | Total-ORAC | umol TE/100 g | 823   | 4  | 0.00   | 823   | 823   | B  | 13    |
|         |  | TP         | mg GAE/100 g  | 117   | 4  | 0.00   | 117   | 117   | B  | 13    |
| 09159   | Limes, raw                                       | H-ORAC     | umol TE/100 g | 82    | 4  | 1.54   | 80    | 86    | A  | 13    |
|         |  | Total-ORAC | umol TE/100 g | 82    | 4  | 1.54   | 80    | 86    | A  | 13    |
|         |  | TP         | mg GAE/100 g  | 12    | 4  | 1.11   | 10    | 15    | A  | 13    |
| 09176   | Mangos, raw                                      | H-ORAC     | umol TE/100 g | 988   | 1  |        |       |       | B  | 13    |
|         |  | L-ORAC     | umol TE/100 g | 14    | 1  |        |       |       | B  | 13    |
|         |  | Total-ORAC | umol TE/100 g | 1002  | 1  |        |       |       | B  | 13    |
|         |  | TP         | mg GAE/100 g  | 266   | 1  |        |       |       | B  | 13    |
| 99438   | Marjoram, fresh                                  | H-ORAC     | umol TE/100 g | 27297 | 4  | 0.00   | 27297 | 27297 | C  | 6     |
|         |  | Total-ORAC | umol TE/100 g | 27297 | 4  | 0.00   | 27297 | 27297 | C  | 6     |
|         |  | TP         | mg GAE/100 g  | 964   | 4  | 0.00   | 964   | 964   | C  | 6     |
| 09181   | Melons, cantaloupe, raw                          | H-ORAC     | umol TE/100 g | 302   | 7  | 27.33  | 228   | 392   | A  | 13    |
|         |  | L-ORAC     | umol TE/100 g | 13    | 7  | 2.90   | 5     | 23    | A  | 13    |
|         |  | Total-ORAC | umol TE/100 g | 315   | 7  | 24.99  | 250   | 398   | A  | 13    |
|         |  | TP         | mg GAE/100 g  | 125   | 7  | 7.70   | 90    | 144   | A  | 13    |
| 09184   | Melons, honeydew, raw                            | H-ORAC     | umol TE/100 g | 230   | 8  | 34.97  | 111   | 370   | A  | 13    |
|         |  | L-ORAC     | umol TE/100 g | 11    | 8  | 1.85   | 5     | 20    | A  | 13    |
|         |  | Total-ORAC | umol TE/100 g | 241   | 8  | 35.05  | 119   | 381   | A  | 13    |
|         |  | TP         | mg GAE/100 g  | 72    | 8  | 13.04  | 37    | 130   | A  | 13    |
| 01103   | Milk, chocolate, fluid, commercial, reduced fat  | H-ORAC     | umol TE/100 g | 1263  | 2  | 68.66  | 1214  | 1311  | B  | 13    |
|         |  | Total-ORAC | umol TE/100 g | 1263  | 2  | 68.66  | 1214  | 1311  | B  | 13    |

## Oxygen Radical Absorbance Capacity (ORAC) of Selected Foods – 2007

| NDB No. | Description   | Parameter  | Unit          | Mean  | N | SEM    | Min   | Max   | CC | Ref |
|---------|---|------------|---------------|-------|---|--------|-------|-------|----|-----|
|         |   | TP         | mg GAE/100 g  | 58    | 2 | 12.45  | 50    | 67    | B  | 13  |
| 35130   | Mush, blue corn with ash (Navajo)                     | H-ORAC     | umol TE/100 g | 684   | 1 |        |       |       | B  | 13  |
|         |   | Total-ORAC | umol TE/100 g | 684   | 1 |        |       |       | B  | 13  |
|         |   | TP         | mg GAE/100 g  | 77    | 1 |        |       |       | B  | 13  |
|         |   |            |               |       |   |        |       |       |    |     |
| 09191   | Nectarines, raw                                       | H-ORAC     | umol TE/100 g | 720   | 8 | 98.89  | 406   | 1157  | A  | 13  |
|         |   | L-ORAC     | umol TE/100 g | 29    | 8 | 8.03   | 9     | 59    | A  | 13  |
|         |   | Total-ORAC | umol TE/100 g | 750   | 8 | 100.48 | 460   | 1216  | A  | 13  |
|         |   | TP         | mg GAE/100 g  | 107   | 8 | 9.99   | 85    | 163   | A  | 13  |
| 12061   | Nuts, almonds   | H-ORAC     | umol TE/100 g | 4282  | 8 | 329.29 | 2800  | 5362  | A  | 13  |
|         |   | L-ORAC     | umol TE/100 g | 172   | 8 | 18.90  | 80    | 227   | A  | 13  |
|         |   | Total-ORAC | umol TE/100 g | 4454  | 8 | 326.01 | 3005  | 5546  | A  | 13  |
|         |   | TP         | mg GAE/100 g  | 418   | 8 | 31.91  | 306   | 521   | A  | 13  |
| 12078   | Nuts, brazilnuts, dried, unblanched                   | H-ORAC     | umol TE/100 g | 862   | 6 | 92.14  | 480   | 1052  | A  | 13  |
|         |   | L-ORAC     | umol TE/100 g | 557   | 6 | 97.05  | 231   | 773   | A  | 13  |
|         |   | Total-ORAC | umol TE/100 g | 1419  | 6 | 172.39 | 711   | 1742  | A  | 13  |
|         |   | TP         | mg GAE/100 g  | 310   | 6 | 42.96  | 239   | 436   | A  | 13  |
| 12087   | Nuts, cashew nuts, raw                                | H-ORAC     | umol TE/100 g | 1505  | 8 | 73.86  | 1297  | 1847  | A  | 13  |
|         |   | L-ORAC     | umol TE/100 g | 443   | 8 | 58.62  | 225   | 620   | A  | 13  |
|         |   | Total-ORAC | umol TE/100 g | 1948  | 8 | 109.39 | 1606  | 2434  | A  | 13  |
|         |   | TP         | mg GAE/100 g  | 269   | 8 | 14.81  | 234   | 331   | A  | 13  |
| 12120   | Nuts, hazelnuts or filberts                           | H-ORAC     | umol TE/100 g | 9275  | 8 | 672.00 | 5401  | 11561 | A  | 13  |
|         |   | L-ORAC     | umol TE/100 g | 370   | 8 | 100.37 | 187   | 961   | A  | 13  |
|         |   | Total-ORAC | umol TE/100 g | 9645  | 8 | 594.30 | 6363  | 11778 | A  | 13  |
|         |   | TP         | mg GAE/100 g  | 835   | 8 | 81.76  | 430   | 1169  | A  | 13  |
| 12132   | Nuts, macadamia nuts, dry roasted, without salt added | H-ORAC     | umol TE/100 g | 1443  | 8 | 87.20  | 1165  | 1924  | A  | 13  |
|         |   | L-ORAC     | umol TE/100 g | 252   | 8 | 21.74  | 171   | 331   | A  | 13  |
|         |   | Total-ORAC | umol TE/100 g | 1695  | 8 | 98.64  | 1362  | 2216  | A  | 13  |
|         |   | TP         | mg GAE/100 g  | 156   | 8 | 10.91  | 116   | 208   | A  | 13  |
| 12142   | Nuts, pecans  | H-ORAC     | umol TE/100 g | 17524 | 8 | 391.75 | 16555 | 19631 | A  | 13  |
|         |   | L-ORAC     | umol TE/100 g | 416   | 8 | 37.05  | 283   | 606   | A  | 13  |
|         |   | Total-ORAC | umol TE/100 g | 17940 | 8 | 398.35 | 16838 | 19991 | A  | 13  |
|         |   | TP         | mg GAE/100 g  | 2016  | 8 | 38.87  | 1887  | 2181  | A  | 13  |
| 12147   | Nuts, pine nuts, dried                                | H-ORAC     | umol TE/100 g | 443   | 8 | 41.94  | 238   | 595   | A  | 13  |
|         |   | L-ORAC     | umol TE/100 g | 277   | 5 | 29.82  | 174   | 321   | A  | 13  |
|         |   | Total-ORAC | umol TE/100 g | 616   | 8 | 77.13  | 400   | 908   | A  | 13  |
|         |   | TP         | mg GAE/100 g  | 68    | 8 | 9.39   | 44    | 114   | A  | 13  |
| 12151   | Nuts, pistachio nuts, raw                             | H-ORAC     | umol TE/100 g | 7557  | 7 | 428.47 | 5911  | 8971  | A  | 13  |

## Oxygen Radical Absorbance Capacity (ORAC) of Selected Foods – 2007

| NDB No. | Description  | Parameter  | Unit          | Mean  | N  | SEM     | Min  | Max   | CC | Ref  |
|---------|--|------------|---------------|-------|----|---------|------|-------|----|------|
|         |  | L-ORAC     | umol TE/100 g | 425   | 7  | 59.56   | 260  | 678   | A  | 13   |
|         |  | Total-ORAC | umol TE/100 g | 7983  | 7  | 454.43  | 6399 | 9649  | A  | 13   |
|         |  | TP         | mg GAE/100 g  | 1657  | 7  | 49.51   | 1474 | 1783  | A  | 13   |
| 12155   | Nuts, walnuts, english   | H-ORAC     | umol TE/100 g | 13057 | 8  | 1330.39 | 8223 | 17743 | A  | 13   |
|         |  | L-ORAC     | umol TE/100 g | 484   | 8  | 47.31   | 357  | 678   | A  | 13   |
|         |  | Total-ORAC | umol TE/100 g | 13541 | 8  | 1320.87 | 8872 | 18282 | A  | 13   |
|         |  | TP         | mg GAE/100 g  | 1556  | 8  | 153.53  | 1023 | 2269  | A  | 13   |
| 04042   | Oil, peanut, salad or cooking  | H-ORAC     | umol TE/100 g | 106   | 4  | 0.00    | 106  | 106   | C  | 6    |
|         |  | Total-ORAC | umol TE/100 g | 106   | 4  | 0.00    | 106  | 106   | C  | 6    |
|         |  | TP         | mg GAE/100 g  | 0     | 4  | 0.00    | 0    | 0     | C  | 6    |
| 99423   | Olive oil, extra-virgin  | H-ORAC     | umol TE/100 g | 1150  | 4  | 0.00    | 1150 | 1150  | C  | 6    |
|         |  | Total-ORAC | umol TE/100 g | 1150  | 4  | 0.00    | 1150 | 1150  | C  | 6    |
|         |  | TP         | mg GAE/100 g  | 19    | 4  | 0.00    | 19   | 19    | C  | 6    |
| 99424   | Olive oil, extra-virgin, w/basil, home prepared                      | H-ORAC     | umol TE/100 g | 684   | 4  | 0.00    | 684  | 684   | C  | 6    |
|         |  | Total-ORAC | umol TE/100 g | 684   | 4  | 0.00    | 684  | 684   | C  | 6    |
|         |  | TP         | mg GAE/100 g  | 8     | 4  | 0.00    | 8    | 8     | C  | 6    |
| 99426   | Olive oil, extra-virgin, w/garlic and red hot peppers, home prepared | H-ORAC     | umol TE/100 g | 219   | 4  | 0.00    | 219  | 219   | C  | 6    |
|         |  | Total-ORAC | umol TE/100 g | 219   | 4  | 0.00    | 219  | 219   | C  | 6    |
|         |  | TP         | mg GAE/100 g  | 9     | 4  | 0.00    | 9    | 9     | C  | 6    |
| 99425   | Olive oil, extra-virgin, w/garlic, home prepared                     | H-ORAC     | umol TE/100 g | 557   | 4  | 0.00    | 557  | 557   | C  | 6    |
|         |  | Total-ORAC | umol TE/100 g | 557   | 4  | 0.00    | 557  | 557   | C  | 6    |
|         |  | TP         | mg GAE/100 g  | 10    | 4  | 0.00    | 10   | 10    | C  | 6    |
| 99427   | Olive oil, extra-virgin, w/parsley, home prepared                    | H-ORAC     | umol TE/100 g | 766   | 4  | 0.00    | 766  | 766   | C  | 6    |
|         |  | Total-ORAC | umol TE/100 g | 766   | 4  | 0.00    | 766  | 766   | C  | 6    |
|         |  | TP         | mg GAE/100 g  | 9     | 4  | 0.00    | 9    | 9     | C  | 6    |
| 11282   | Onions, raw  | H-ORAC     | umol TE/100 g | 1021  | 4  | 167.06  | 813  | 1442  | A  | 13   |
|         |  | L-ORAC     | umol TE/100 g | 12    | 4  | 1.62    | 9    | 16    | A  | 13   |
|         |  | Total-ORAC | umol TE/100 g | 1034  | 4  | 168.53  | 822  | 1457  | A  | 13   |
|         |  | TP         | mg GAE/100 g  | 23    | 4  | 2.78    | 17   | 27    | A  | 13   |
| 99055   | Onions, red, raw   | H-ORAC     | umol TE/100 g | 1521  | 4  | 0.00    | 1521 | 1521  | C  | 6    |
|         |  | Total-ORAC | umol TE/100 g | 1521  | 4  | 0.00    | 1521 | 1521  | C  | 6    |
|         |  | TP         | mg GAE/100 g  | 48    | 4  | 0.00    | 48   | 48    | C  | 6    |
| 11294   | Onions, sweet, raw   | H-ORAC     | umol TE/100 g | 594   | 8  | 28.05   | 491  | 695   | A  | 13   |
|         |  | L-ORAC     | umol TE/100 g | 21    | 8  | 3.33    | 5    | 33    | A  | 13   |
|         |  | Total-ORAC | umol TE/100 g | 614   | 8  | 30.08   | 509  | 727   | A  | 13   |
|         |  | TP         | mg GAE/100 g  | 74    | 8  | 7.40    | 52   | 99    | A  | 13   |
| 99056   | Onions, white, raw   | H-ORAC     | umol TE/100 g | 863   | 37 | 14.57   | 342  | 926   | B  | 6, 7 |

## Oxygen Radical Absorbance Capacity (ORAC) of Selected Foods – 2007

| NDB No. | Description   | Parameter  | Unit          | Mean  | N  | SEM    | Min   | Max   | CC | Ref   |
|---------|---|------------|---------------|-------|----|--------|-------|-------|----|-------|
|         |   | Total-ORAC | umol TE/100 g | 863   | 37 | 14.57  | 342   | 926   | B  | 6, 7  |
|         |   | TP         | mg GAE/100 g  | 27    | 4  | 0.00   | 27    | 27    | C  | 6     |
| 11286   | Onions, yellow, sauteed                             | H-ORAC     | umol TE/100 g | 1220  | 4  | 98.97  | 996   | 1394  | A  | 13    |
|         |   | Total-ORAC | umol TE/100 g | 1220  | 4  | 98.97  | 996   | 1394  | A  | 13    |
|         |   | TP         | mg GAE/100 g  | 150   | 4  | 27.19  | 98    | 211   | A  | 13    |
| 09206   | Orange juice, raw                                   | H-ORAC     | umol TE/100 g | 726   | 53 | 5.81   | 695   | 1027  | B  | 11, 8 |
|         |   | Total-ORAC | umol TE/100 g | 726   | 53 | 5.81   | 695   | 1027  | B  | 11, 8 |
| 09202   | Oranges, raw, navels                                | H-ORAC     | umol TE/100 g | 1785  | 8  | 143.07 | 1285  | 2393  | A  | 13    |
|         |   | L-ORAC     | umol TE/100 g | 34    | 8  | 6.15   | 17    | 61    | A  | 13    |
|         |   | Total-ORAC | umol TE/100 g | 1819  | 8  | 143.94 | 1346  | 2445  | A  | 13    |
|         |   | TP         | mg GAE/100 g  | 337   | 8  | 14.58  | 258   | 380   | A  | 13    |
| 99115   | Oregano, fresh                                      | H-ORAC     | umol TE/100 g | 13970 | 4  | 0.00   | 13970 | 13970 | C  | 6     |
|         |   | Total-ORAC | umol TE/100 g | 13970 | 4  | 0.00   | 13970 | 13970 | C  | 6     |
|         |   | TP         | mg GAE/100 g  | 491   | 4  | 0.00   | 491   | 491   | C  | 6     |
| 11297   | Parsley, raw  | H-ORAC     | umol TE/100 g | 1301  | 4  | 0.00   | 1301  | 1301  | C  | 6     |
|         |   | Total-ORAC | umol TE/100 g | 1301  | 4  | 0.00   | 1301  | 1301  | C  | 6     |
|         |   | TP         | mg GAE/100 g  | 77    | 4  | 0.00   | 77    | 77    | C  | 6     |
| 09370   | Peaches, canned, heavy syrup, drained               | H-ORAC     | umol TE/100 g | 436   | 2  | 56.04  | 397   | 476   | B  | 13    |
|         |   | Total-ORAC | umol TE/100 g | 436   | 2  | 56.04  | 397   | 476   | B  | 13    |
|         |   | TP         | mg GAE/100 g  | 73    | 2  | 3.46   | 70    | 75    | B  | 13    |
| 99418   | Peaches, dried to 40% moisture (purchased in Italy) | H-ORAC     | umol TE/100 g | 4222  | 4  | 0.00   | 4222  | 4222  | C  | 2     |
|         |   | Total-ORAC | umol TE/100 g | 4222  | 4  | 0.00   | 4222  | 4222  | C  | 2     |
|         |   | TP         | mg GAE/100 g  | 283   | 4  | 0.00   | 283   | 283   | C  | 2     |
| 09236   | Peaches, raw  | H-ORAC     | umol TE/100 g | 1781  | 12 | 114.54 | 1139  | 2417  | A  | 2, 13 |
|         |   | L-ORAC     | umol TE/100 g | 50    | 8  | 2.59   | 43    | 60    | A  | 13    |
|         |   | Total-ORAC | umol TE/100 g | 1814  | 12 | 116.31 | 1183  | 2472  | A  | 2, 13 |
|         |   | TP         | mg GAE/100 g  | 148   | 12 | 8.50   | 116   | 209   | A  | 2, 13 |
| 16098   | Peanut butter, smooth style, with salt              | H-ORAC     | umol TE/100 g | 3127  | 3  | 0.00   | 3127  | 3127  | B  | 13    |
|         |   | L-ORAC     | umol TE/100 g | 305   | 3  | 0.00   | 305   | 305   | B  | 13    |
|         |   | Total-ORAC | umol TE/100 g | 3432  | 3  | 0.00   | 3432  | 3432  | B  | 13    |
|         |   | TP         | mg GAE/100 g  | 536   | 3  | 0.00   | 536   | 536   | B  | 13    |
| 16087   | Peanuts, all types, raw                             | H-ORAC     | umol TE/100 g | 2893  | 4  | 136.42 | 2684  | 3177  | A  | 13    |
|         |   | L-ORAC     | umol TE/100 g | 273   | 4  | 60.31  | 196   | 420   | A  | 13    |
|         |   | Total-ORAC | umol TE/100 g | 3166  | 4  | 134.50 | 2886  | 3453  | A  | 13    |
|         |   | TP         | mg GAE/100 g  | 396   | 4  | 31.06  | 324   | 450   | A  | 13    |
| 97016   | Pear juice, all varieties                           | H-ORAC     | umol TE/100 g | 704   | 1  |        |       |       | C  | 11    |
|         |   | Total-ORAC | umol TE/100 g | 704   | 1  |        |       |       | C  | 11    |



## Oxygen Radical Absorbance Capacity (ORAC) of Selected Foods – 2007

| NDB No. | Description                                       | Parameter  | Unit          | Mean  | N  | SEM    | Min   | Max   | CC | Ref      |
|---------|---|------------|---------------|-------|----|--------|-------|-------|----|----------|
| 99421   | Pears, dried to 40% moisture (purchased in Italy) | H-ORAC     | umol TE/100 g | 9496  | 4  | 0.00   | 9496  | 9496  | C  | 2        |
|         |   | Total-ORAC | umol TE/100 g | 9496  | 4  | 0.00   | 9496  | 9496  | C  | 2        |
|         |   | TP         | mg GAE/100 g  | 679   | 4  | 0.00   | 679   | 679   | C  | 2        |
| 97075   | Pears, green cultivars, with peel, raw            | H-ORAC     | umol TE/100 g | 1856  | 7  | 103.36 | 1590  | 2282  | A  | 13       |
|         |   | L-ORAC     | umol TE/100 g | 56    | 7  | 6.20   | 37    | 77    | A  | 13       |
|         |   | Total-ORAC | umol TE/100 g | 1911  | 7  | 99.57  | 1643  | 2319  | A  | 13       |
|         |   | TP         | mg GAE/100 g  | 220   | 7  | 7.27   | 192   | 244   | A  | 13       |
| 09252   | Pears, raw  | H-ORAC     | umol TE/100 g | 2941  | 4  | 0.00   | 2941  | 2941  | C  | 2        |
|         |   | Total-ORAC | umol TE/100 g | 2941  | 4  | 0.00   | 2941  | 2941  | C  | 2        |
|         |   | TP         | mg GAE/100 g  | 168   | 4  | 0.00   | 168   | 168   | C  | 2        |
| 97076   | Pears, red anjou, raw                             | H-ORAC     | umol TE/100 g | 1711  | 4  | 195.88 | 1454  | 2208  | A  | 13       |
|         |   | L-ORAC     | umol TE/100 g | 35    | 4  | 1.88   | 31    | 38    | A  | 13       |
|         |   | Total-ORAC | umol TE/100 g | 1746  | 4  | 195.49 | 1489  | 2243  | A  | 13       |
|         |   | TP         | mg GAE/100 g  | 214   | 4  | 18.61  | 172   | 250   | A  | 13       |
| 11312   | Peas, green, frozen, unprepared                   | H-ORAC     | umol TE/100 g | 505   | 1  |        |       |       | B  | 13       |
|         |   | L-ORAC     | umol TE/100 g | 95    | 1  |        |       |       | B  | 13       |
|         |   | Total-ORAC | umol TE/100 g | 600   | 1  |        |       |       | B  | 13       |
|         |   | TP         | mg GAE/100 g  | 187   | 1  |        |       |       | B  | 13       |
| 16085   | Peas, split, mature seeds, raw                    | H-ORAC     | umol TE/100 g | 524   | 33 | 23.55  | 153   | 877   | B  | 14       |
|         |   | Total-ORAC | umol TE/100 g | 524   | 33 | 23.55  | 153   | 877   | B  | 14       |
|         |   | TP         | mg GAE/100 g  | 74    | 33 | 1.14   | 57    | 90    | B  | 14       |
| 99457   | Peas, yellow, mature seeds, raw                   | H-ORAC     | umol TE/100 g | 741   | 30 | 34.08  | 283   | 1144  | B  | 14       |
|         |   | Total-ORAC | umol TE/100 g | 741   | 30 | 34.08  | 283   | 1144  | B  | 14       |
|         |   | TP         | mg GAE/100 g  | 83    | 30 | 0.74   | 75    | 99    | B  | 14       |
| 02064   | Peppermint, fresh                                 | H-ORAC     | umol TE/100 g | 13978 | 4  | 0.00   | 13978 | 13978 | C  | 6        |
|         |   | Total-ORAC | umol TE/100 g | 13978 | 4  | 0.00   | 13978 | 13978 | C  | 6        |
|         |   | TP         | mg GAE/100 g  | 690   | 4  | 0.00   | 690   | 690   | C  | 6        |
| 11333   | Peppers, sweet, green, raw                        | H-ORAC     | umol TE/100 g | 922   | 58 | 13.97  | 384   | 1059  | A  | 6, 7, 13 |
|         |   | L-ORAC     | umol TE/100 g | 14    | 4  | 1.53   | 11    | 17    | A  | 13       |
|         |   | Total-ORAC | umol TE/100 g | 923   | 58 | 13.52  | 401   | 1059  | A  | 6, 7, 13 |
|         |   | TP         | mg GAE/100 g  | 160   | 8  | 36.29  | 50    | 312   | A  | 6, 13    |
| 11339   | Peppers, sweet, green, sauteed                    | H-ORAC     | umol TE/100 g | 615   | 4  | 94.65  | 419   | 755   | A  | 13       |
|         |   | Total-ORAC | umol TE/100 g | 615   | 4  | 94.65  | 419   | 755   | A  | 13       |
|         |   | TP         | mg GAE/100 g  | 437   | 4  | 62.57  | 328   | 570   | A  | 13       |
| 99451   | Peppers, sweet, orange, raw                       | H-ORAC     | umol TE/100 g | 908   | 1  |        |       |       | B  | 13       |
|         |   | L-ORAC     | umol TE/100 g | 76    | 1  |        |       |       | B  | 13       |
|         |   | Total-ORAC | umol TE/100 g | 984   | 1  |        |       |       | B  | 13       |

## Oxygen Radical Absorbance Capacity (ORAC) of Selected Foods – 2007

| NDB No. | Description   | Parameter  | Unit          | Mean | N  | SEM    | Min  | Max   | CC | Ref      |
|---------|---|------------|---------------|------|----|--------|------|-------|----|----------|
|         |   | TP         | mg GAE/100 g  | 543  | 1  |        |      |       | B  | 13       |
| 11821   | Peppers, sweet, red, raw  | H-ORAC     | umol TE/100 g | 788  | 26 | 12.89  | 748  | 1094  | A  | 6, 7, 13 |
|         |   | L-ORAC     | umol TE/100 g | 24   | 4  | 6.27   | 12   | 35    | A  | 13       |
|         |   | Total-ORAC | umol TE/100 g | 791  | 26 | 14.29  | 756  | 1129  | A  | 6, 7, 13 |
|         |   | TP         | mg GAE/100 g  | 255  | 8  | 57.15  | 86   | 532   | A  | 6, 13    |
| 11921   | Peppers, sweet, red, sauteed                                      | H-ORAC     | umol TE/100 g | 847  | 4  | 103.42 | 700  | 1106  | A  | 13       |
|         |   | Total-ORAC | umol TE/100 g | 847  | 4  | 103.42 | 700  | 1106  | A  | 13       |
|         |   | TP         | mg GAE/100 g  | 564  | 4  | 20.61  | 533  | 599   | A  | 13       |
| 99440   | Peppers, sweet, yellow, grilled                                   | H-ORAC     | umol TE/100 g | 694  | 4  | 0.00   | 694  | 694   | C  | 2        |
|         |   | Total-ORAC | umol TE/100 g | 694  | 4  | 0.00   | 694  | 694   | C  | 2        |
|         |   | TP         | mg GAE/100 g  | 164  | 4  | 0.00   | 164  | 164   | C  | 2        |
| 11951   | Peppers, sweet, yellow, raw                                       | H-ORAC     | umol TE/100 g | 951  | 5  | 1.24   | 950  | 956   | B  | 6, 13    |
|         |   | L-ORAC     | umol TE/100 g | 69   | 1  |        |      |       | B  | 13       |
|         |   | Total-ORAC | umol TE/100 g | 965  | 5  | 15.26  | 950  | 1024  | B  | 6, 13    |
|         |   | TP         | mg GAE/100 g  | 216  | 5  | 90.23  | 128  | 566   | B  | 6, 13    |
| 09273   | Pineapple juice, canned, unsweetened, without added ascorbic acid | H-ORAC     | umol TE/100 g | 568  | 1  |        |      |       | C  | 11       |
|         |   | Total-ORAC | umol TE/100 g | 568  | 1  |        |      |       | C  | 11       |
| 09266   | Pineapple, raw, all varieties                                     | H-ORAC     | umol TE/100 g | 373  | 1  |        |      |       | B  | 13       |
|         |   | L-ORAC     | umol TE/100 g | 12   | 1  |        |      |       | B  | 13       |
|         |   | Total-ORAC | umol TE/100 g | 385  | 1  |        |      |       | B  | 13       |
|         |   | TP         | mg GAE/100 g  | 81   | 1  |        |      |       | B  | 13       |
| 09430   | Pineapple, raw, extra sweet variety                               | H-ORAC     | umol TE/100 g | 857  | 7  | 66.39  | 564  | 1022  | A  | 13       |
|         |   | L-ORAC     | umol TE/100 g | 27   | 7  | 6.14   | 7    | 56    | A  | 13       |
|         |   | Total-ORAC | umol TE/100 g | 884  | 7  | 70.74  | 571  | 1053  | A  | 13       |
|         |   | TP         | mg GAE/100 g  | 202  | 7  | 12.31  | 157  | 252   | A  | 13       |
| 09429   | Pineapple, raw, traditional varieties                             | H-ORAC     | umol TE/100 g | 520  | 2  | 140.30 | 421  | 619   | B  | 13       |
|         |   | L-ORAC     | umol TE/100 g | 42   | 2  | 12.82  | 32   | 51    | B  | 13       |
|         |   | Total-ORAC | umol TE/100 g | 562  | 2  | 127.49 | 472  | 652   | B  | 13       |
|         |   | TP         | mg GAE/100 g  | 122  | 2  | 0.85   | 122  | 123   | B  | 13       |
| 97077   | Plums, black diamond, with peel, raw                              | H-ORAC     | umol TE/100 g | 7546 | 3  | 598.99 | 6568 | 8035  | B  | 13       |
|         |   | L-ORAC     | umol TE/100 g | 35   | 3  | 6.52   | 30   | 46    | B  | 13       |
|         |   | Total-ORAC | umol TE/100 g | 7581 | 3  | 592.47 | 6614 | 8065  | B  | 13       |
|         |   | TP         | mg GAE/100 g  | 478  | 3  | 0.48   | 477  | 479   | B  | 13       |
| 09291   | Plums, dried (prunes), uncooked                                   | H-ORAC     | umol TE/100 g | 6463 | 16 | 547.42 | 2212 | 10432 | A  | 2, 13    |
|         |   | L-ORAC     | umol TE/100 g | 179  | 8  | 21.03  | 114  | 258   | A  | 13       |
|         |   | Total-ORAC | umol TE/100 g | 6552 | 16 | 561.65 | 2212 | 10563 | A  | 2, 13    |

## Oxygen Radical Absorbance Capacity (ORAC) of Selected Foods – 2007

| NDB No. | Description                             | Parameter  | Unit          | Mean | N  | SEM    | Min  | Max  | CC | Ref   |
|---------|---|------------|---------------|------|----|--------|------|------|----|-------|
| 09279   | Plums, raw                              | TP         | mg GAE/100 g  | 745  | 16 | 99.57  | 165  | 1392 | A  | 2, 13 |
|         |   | H-ORAC     | umol TE/100 g | 6241 | 8  | 744.78 | 3472 | 9233 | A  | 13    |
|         |   | L-ORAC     | umol TE/100 g | 17   | 8  | 3.60   | 7    | 31   | A  | 13    |
|         |   | Total-ORAC | umol TE/100 g | 6259 | 8  | 745.25 | 3486 | 9240 | A  | 13    |
| 11358   | Potatoes, red, flesh and skin, baked    | TP         | mg GAE/100 g  | 367  | 8  | 40.72  | 232  | 573  | A  | 13    |
|         |   | H-ORAC     | umol TE/100 g | 1304 | 8  | 67.58  | 1160 | 1666 | A  | 13    |
|         |   | L-ORAC     | umol TE/100 g | 22   | 8  | 2.86   | 12   | 35   | A  | 13    |
|         |   | Total-ORAC | umol TE/100 g | 1326 | 8  | 69.71  | 1182 | 1701 | A  | 13    |
| 11355   | Potatoes, red, flesh and skin, raw      | TP         | mg GAE/100 g  | 179  | 8  | 21.65  | 110  | 260  | A  | 13    |
|         |   | H-ORAC     | umol TE/100 g | 1060 | 4  | 77.59  | 948  | 1255 | A  | 13    |
|         |   | L-ORAC     | umol TE/100 g | 38   | 4  | 0.73   | 37   | 40   | A  | 13    |
|         |   | Total-ORAC | umol TE/100 g | 1098 | 4  | 76.99  | 987  | 1292 | A  | 13    |
| 11356   | Potatoes, Russet, flesh and skin, baked | TP         | mg GAE/100 g  | 138  | 4  | 16.85  | 118  | 181  | A  | 13    |
|         |   | H-ORAC     | umol TE/100 g | 1652 | 8  | 126.11 | 1280 | 2417 | A  | 13    |
|         |   | L-ORAC     | umol TE/100 g | 28   | 8  | 3.56   | 16   | 42   | A  | 13    |
|         |   | Total-ORAC | umol TE/100 g | 1680 | 8  | 126.77 | 1317 | 2453 | A  | 13    |
| 11353   | Potatoes, russet, flesh and skin, raw   | TP         | mg GAE/100 g  | 176  | 8  | 5.94   | 159  | 208  | A  | 13    |
|         |   | H-ORAC     | umol TE/100 g | 1272 | 4  | 131.56 | 1015 | 1541 | A  | 13    |
|         |   | L-ORAC     | umol TE/100 g | 51   | 4  | 8.09   | 31   | 62   | A  | 13    |
|         |   | Total-ORAC | umol TE/100 g | 1322 | 4  | 138.00 | 1046 | 1603 | A  | 13    |
| 11357   | Potatoes, white, flesh and skin, baked  | TP         | mg GAE/100 g  | 122  | 4  | 13.32  | 91   | 146  | A  | 13    |
|         |   | H-ORAC     | umol TE/100 g | 1098 | 7  | 110.83 | 789  | 1552 | A  | 2, 13 |
|         |   | L-ORAC     | umol TE/100 g | 40   | 7  | 11.24  | 12   | 77   | A  | 13    |
|         |   | Total-ORAC | umol TE/100 g | 1138 | 7  | 104.22 | 866  | 1576 | A  | 2, 13 |
| 11354   | Potatoes, white, flesh and skin, raw    | TP         | mg GAE/100 g  | 136  | 7  | 24.32  | 41   | 223  | A  | 2, 13 |
|         |   | H-ORAC     | umol TE/100 g | 1010 | 3  | 149.72 | 779  | 1195 | A  | 13    |
|         |   | L-ORAC     | umol TE/100 g | 49   | 3  | 8.77   | 35   | 60   | A  | 13    |
|         |   | Total-ORAC | umol TE/100 g | 1058 | 3  | 158.48 | 814  | 1255 | A  | 13    |
| 09294   | Prune juice, canned                     | TP         | mg GAE/100 g  | 163  | 3  | 11.95  | 145  | 178  | A  | 13    |
|         |   | H-ORAC     | umol TE/100 g | 2036 | 6  | 93.76  | 1944 | 2496 | B  | 11, 8 |
|         |   | Total-ORAC | umol TE/100 g | 2036 | 6  | 93.76  | 1944 | 2496 | B  | 11, 8 |
|         |   |            |               |      |    |        |      |      |    |       |
| 11422   | Pumpkin, raw                            | H-ORAC     | umol TE/100 g | 414  | 1  |        |      |      | B  | 13    |
|         |   | L-ORAC     | umol TE/100 g | 69   | 1  |        |      |      | B  | 13    |
|         |   | Total-ORAC | umol TE/100 g | 483  | 1  |        |      |      | B  | 13    |
|         |   | TP         | mg GAE/100 g  | 157  | 1  |        |      |      | B  | 13    |
| 11676   | Radish seeds, sprouted, raw             | H-ORAC     | umol TE/100 g | 2184 | 4  | 0.00   | 2184 | 2184 | C  | 2     |
|         |   | Total-ORAC | umol TE/100 g | 2184 | 4  | 0.00   | 2184 | 2184 | C  | 2     |

## Oxygen Radical Absorbance Capacity (ORAC) of Selected Foods – 2007

| NDB No. | Description  | Parameter  | Unit          | Mean  | N  | SEM    | Min   | Max   | CC | Ref   |
|---------|--|------------|---------------|-------|----|--------|-------|-------|----|-------|
|         |  | TP         | mg GAE/100 g  | 100   | 4  | 0.00   | 100   | 100   | C  | 2     |
| 11429   | Radishes, raw  | H-ORAC     | umol TE/100 g | 1724  | 15 | 205.79 | 706   | 3602  | A  | 6, 13 |
|         |  | L-ORAC     | umol TE/100 g | 26    | 7  | 4.85   | 11    | 45    | A  | 13    |
|         |  | Total-ORAC | umol TE/100 g | 1736  | 15 | 203.43 | 742   | 3602  | A  | 6, 13 |
|         |  | TP         | mg GAE/100 g  | 79    | 15 | 8.32   | 34    | 162   | A  | 6, 13 |
| 09298   | Raisins, seedless  | H-ORAC     | umol TE/100 g | 3002  | 8  | 197.77 | 2310  | 4038  | A  | 13    |
|         |  | L-ORAC     | umol TE/100 g | 35    | 8  | 5.00   | 16    | 52    | A  | 13    |
|         |  | Total-ORAC | umol TE/100 g | 3037  | 8  | 195.32 | 2362  | 4064  | A  | 13    |
|         |  | TP         | mg GAE/100 g  | 1065  | 8  | 60.21  | 844   | 1312  | A  | 13    |
| 99419   | Raisins, white, dried to 40% moisture (purchased in Italy) | H-ORAC     | umol TE/100 g | 4188  | 4  | 0.00   | 4188  | 4188  | C  | 2     |
|         |  | Total-ORAC | umol TE/100 g | 4188  | 4  | 0.00   | 4188  | 4188  | C  | 2     |
|         |  | TP         | mg GAE/100 g  | 372   | 4  | 0.00   | 372   | 372   | C  | 2     |
| 99420   | Raisins, white, fresh (purchased in Italy)                 | H-ORAC     | umol TE/100 g | 830   | 4  | 0.00   | 830   | 830   | C  | 2     |
|         |  | Total-ORAC | umol TE/100 g | 830   | 4  | 0.00   | 830   | 830   | C  | 2     |
|         |  | TP         | mg GAE/100 g  | 164   | 4  | 0.00   | 164   | 164   | C  | 2     |
| 09302   | Raspberries, raw   | H-ORAC     | umol TE/100 g | 4745  | 6  | 313.51 | 3748  | 5792  | A  | 13    |
|         |  | L-ORAC     | umol TE/100 g | 138   | 6  | 28.93  | 51    | 207   | A  | 13    |
|         |  | Total-ORAC | umol TE/100 g | 4882  | 6  | 306.26 | 3955  | 5879  | A  | 13    |
|         |  | TP         | mg GAE/100 g  | 502   | 6  | 37.28  | 387   | 617   | A  | 13    |
| 20060   | Rice bran, crude   | H-ORAC     | umol TE/100 g | 8817  | 1  |        |       |       | B  | 13    |
|         |  | L-ORAC     | umol TE/100 g | 15470 | 1  |        |       |       | B  | 13    |
|         |  | Total-ORAC | umol TE/100 g | 24287 | 1  |        |       |       | B  | 13    |
|         |  | TP         | mg GAE/100 g  | 667   | 1  |        |       |       | B  | 13    |
| 99414   | Rocket, raw  | H-ORAC     | umol TE/100 g | 1904  | 12 | 99.37  | 1012  | 2373  | C  | 2, 6  |
|         |  | Total-ORAC | umol TE/100 g | 1904  | 12 | 99.37  | 1012  | 2373  | C  | 2, 6  |
|         |  | TP         | mg GAE/100 g  | 125   | 12 | 6.30   | 69    | 154   | C  | 2, 6  |
| 99116   | Sage, fresh  | H-ORAC     | umol TE/100 g | 32004 | 4  | 0.00   | 32004 | 32004 | C  | 6     |
|         |  | Total-ORAC | umol TE/100 g | 32004 | 4  | 0.00   | 32004 | 32004 | C  | 6     |
|         |  | TP         | mg GAE/100 g  | 901   | 4  | 0.00   | 901   | 901   | C  | 6     |
| 06164   | Sauce, ready-to-serve, salsa                               | H-ORAC     | umol TE/100 g | 966   | 1  |        |       |       | B  | 13    |
|         |  | L-ORAC     | umol TE/100 g | 35    | 1  |        |       |       | B  | 13    |
|         |  | Total-ORAC | umol TE/100 g | 1001  | 1  |        |       |       | B  | 13    |
|         |  | TP         | mg GAE/100 g  | 245   | 1  |        |       |       | B  | 13    |
| 99456   | Savory, fresh  | H-ORAC     | umol TE/100 g | 9465  | 4  | 0.00   | 9465  | 9465  | C  | 6     |
|         |  | Total-ORAC | umol TE/100 g | 9465  | 4  | 0.00   | 9465  | 9465  | C  | 6     |
|         |  | TP         | mg GAE/100 g  | 227   | 4  | 0.00   | 227   | 227   | C  | 6     |
| 19034   | Snacks, popcorn, air-popped                                | H-ORAC     | umol TE/100 g | 1535  | 1  |        |       |       | B  | 13    |

## Oxygen Radical Absorbance Capacity (ORAC) of Selected Foods – 2007

| NDB No. | Description                           | Parameter  | Unit          | Mean   | N  | SEM    | Min    | Max    | CC | Ref |
|---------|---------------------------------------|------------|---------------|--------|----|--------|--------|--------|----|-----|
|         |                                       | L-ORAC     | umol TE/100 g | 208    | 1  |        |        |        | B  | 13  |
|         |                                       | Total-ORAC | umol TE/100 g | 1743   | 1  |        |        |        | B  | 13  |
|         |                                       | TP         | mg GAE/100 g  | 117    | 1  |        |        |        | B  | 13  |
| 99465   | Sorghum, bran, black                  | H-ORAC     | umol TE/100 g | 97000  | 2  | 0.00   | 97000  | 97000  | C  | 1   |
|         |                                       | L-ORAC     | umol TE/100 g | 3800   | 2  | 0.00   | 3800   | 3800   | C  | 1   |
|         |                                       | Total-ORAC | umol TE/100 g | 100800 | 2  | 0.00   | 100800 | 100800 | C  | 1   |
|         |                                       | TP         | mg GAE/100 g  | 2600   | 2  | 0.00   | 2600   | 2600   | C  | 1   |
| 99467   | Sorghum, bran, hi-tannin              | Total-ORAC | umol TE/100 g | 240000 | 2  | 0.00   | 240000 | 240000 | C  | 1   |
| 99464   | Sorghum, bran, red                    | H-ORAC     | umol TE/100 g | 70400  | 2  | 0.00   | 70400  | 70400  | C  | 1   |
|         |                                       | L-ORAC     | umol TE/100 g | 700    | 2  | 0.00   | 700    | 700    | C  | 1   |
|         |                                       | Total-ORAC | umol TE/100 g | 71000  | 2  | 0.00   | 71000  | 71000  | C  | 1   |
|         |                                       | TP         | mg GAE/100 g  | 2000   | 2  | 0.00   | 2000   | 2000   | C  | 1   |
| 99466   | Sorghum, bran, white                  | Total-ORAC | umol TE/100 g | 6400   | 2  | 0.00   | 6400   | 6400   | C  | 1   |
| 99462   | Sorghum, grain, black                 | H-ORAC     | umol TE/100 g | 20500  | 2  | 0.00   | 20500  | 20500  | C  | 1   |
|         |                                       | L-ORAC     | umol TE/100 g | 1400   | 2  | 0.00   | 1400   | 1400   | C  | 1   |
|         |                                       | Total-ORAC | umol TE/100 g | 21900  | 2  | 0.00   | 21900  | 21900  | C  | 1   |
|         |                                       | TP         | mg GAE/100 g  | 600    | 2  | 0.00   | 600    | 600    | C  | 1   |
| 99463   | Sorghum, grain, hi-tannin             | H-ORAC     | umol TE/100 g | 44000  | 2  | 0.00   | 44000  | 44000  | C  | 1   |
|         |                                       | L-ORAC     | umol TE/100 g | 1400   | 2  | 0.00   | 1400   | 1400   | C  | 1   |
|         |                                       | Total-ORAC | umol TE/100 g | 45400  | 2  | 0.00   | 45400  | 45400  | C  | 1   |
|         |                                       | TP         | mg GAE/100 g  | 1300   | 2  | 0.00   | 1300   | 1300   | C  | 1   |
| 99461   | Sorghum, grain, red                   | H-ORAC     | umol TE/100 g | 13600  | 2  | 0.00   | 13600  | 13600  | C  | 1   |
|         |                                       | L-ORAC     | umol TE/100 g | 400    | 2  | 0.00   | 400    | 400    | C  | 1   |
|         |                                       | Total-ORAC | umol TE/100 g | 14000  | 2  | 0.00   | 14000  | 14000  | C  | 1   |
|         |                                       | TP         | mg GAE/100 g  | 500    | 2  | 0.00   | 500    | 500    | C  | 1   |
| 99460   | Sorghum, grain, white                 | H-ORAC     | umol TE/100 g | 2100   | 2  | 0.00   | 2100   | 2100   | C  | 1   |
|         |                                       | L-ORAC     | umol TE/100 g | 100    | 2  | 0.00   | 100    | 100    | C  | 1   |
|         |                                       | Total-ORAC | umol TE/100 g | 2200   | 2  | 0.00   | 2200   | 2200   | C  | 1   |
|         |                                       | TP         | mg GAE/100 g  | 100    | 2  | 0.00   | 100    | 100    | C  | 1   |
| 16108   | Soybeans, mature seeds, raw           | H-ORAC     | umol TE/100 g | 5764   | 12 | 693.80 | 3241   | 12351  | B  | 14  |
|         |                                       | Total-ORAC | umol TE/100 g | 5764   | 12 | 693.80 | 3241   | 12351  | B  | 14  |
|         |                                       | TP         | mg GAE/100 g  | 249    | 12 | 28.87  | 145    | 524    | B  | 14  |
| 11452   | Soybeans, mature seeds, sprouted, raw | H-ORAC     | umol TE/100 g | 962    | 4  | 0.00   | 962    | 962    | C  | 2   |
|         |                                       | Total-ORAC | umol TE/100 g | 962    | 4  | 0.00   | 962    | 962    | C  | 2   |
|         |                                       | TP         | mg GAE/100 g  | 47     | 4  | 0.00   | 47     | 47     | C  | 2   |
| 02003   | Spices, basil, dried                  | H-ORAC     | umol TE/100 g | 64439  | 1  |        |        |        | B  | 13  |
|         |                                       | L-ORAC     | umol TE/100 g | 3114   | 1  |        |        |        | B  | 13  |

## Oxygen Radical Absorbance Capacity (ORAC) of Selected Foods – 2007

| NDB No. | Description                  | Parameter  | Unit          | Mean   | N | SEM  | Min   | Max   | CC | Ref |
|---------|------------------------------|------------|---------------|--------|---|------|-------|-------|----|-----|
|         |                              | Total-ORAC | umol TE/100 g | 67553  | 1 |      |       |       | B  | 13  |
|         |                              | TP         | mg GAE/100 g  | 4489   | 1 |      |       |       | B  | 13  |
| 02006   | Spices, cardamom             | H-ORAC     | umol TE/100 g | 2764   | 4 | 0.00 | 2764  | 2764  | C  | 6   |
|         |                              | Total-ORAC | umol TE/100 g | 2764   | 4 | 0.00 | 2764  | 2764  | C  | 6   |
|         |                              | TP         | mg GAE/100 g  | 167    | 4 | 0.00 | 167   | 167   | C  | 6   |
| 02009   | Spices, chili powder         | H-ORAC     | umol TE/100 g | 21827  | 1 |      |       |       | B  | 13  |
|         |                              | L-ORAC     | umol TE/100 g | 1808   | 1 |      |       |       | B  | 13  |
|         |                              | Total-ORAC | umol TE/100 g | 23636  | 1 |      |       |       | B  | 13  |
|         |                              | TP         | mg GAE/100 g  | 1713   | 1 |      |       |       | B  | 13  |
| 02010   | Spices, cinnamon, ground     | H-ORAC     | umol TE/100 g | 264083 | 1 |      |       |       | B  | 13  |
|         |                              | L-ORAC     | umol TE/100 g | 3453   | 1 |      |       |       | B  | 13  |
|         |                              | Total-ORAC | umol TE/100 g | 267536 | 1 |      |       |       | B  | 13  |
|         |                              | TP         | mg GAE/100 g  | 15718  | 1 |      |       |       | B  | 13  |
| 02011   | Spices, cloves, ground       | H-ORAC     | umol TE/100 g | 153309 | 1 |      |       |       | B  | 13  |
|         |                              | L-ORAC     | umol TE/100 g | 161137 | 1 |      |       |       | B  | 13  |
|         |                              | Total-ORAC | umol TE/100 g | 314446 | 1 |      |       |       | B  | 13  |
|         |                              | TP         | mg GAE/100 g  | 11319  | 1 |      |       |       | B  | 13  |
| 02014   | Spices, cumin seed           | H-ORAC     | umol TE/100 g | 76800  | 4 | 0.00 | 76800 | 76800 | C  | 6   |
|         |                              | Total-ORAC | umol TE/100 g | 76800  | 4 | 0.00 | 76800 | 76800 | C  | 6   |
|         |                              | TP         | mg GAE/100 g  | 846    | 4 | 0.00 | 846   | 846   | C  | 6   |
| 02015   | Spices, curry powder         | H-ORAC     | umol TE/100 g | 24981  | 1 |      |       |       | B  | 13  |
|         |                              | L-ORAC     | umol TE/100 g | 23523  | 1 |      |       |       | B  | 13  |
|         |                              | Total-ORAC | umol TE/100 g | 48504  | 1 |      |       |       | B  | 13  |
|         |                              | TP         | mg GAE/100 g  | 1075   | 1 |      |       |       | B  | 13  |
| 02020   | Spices, garlic powder        | H-ORAC     | umol TE/100 g | 6523   | 1 |      |       |       | B  | 13  |
|         |                              | L-ORAC     | umol TE/100 g | 143    | 1 |      |       |       | B  | 13  |
|         |                              | Total-ORAC | umol TE/100 g | 6665   | 1 |      |       |       | B  | 13  |
|         |                              | TP         | mg GAE/100 g  | 42     | 1 |      |       |       | B  | 13  |
| 02021   | Spices, ginger, ground       | H-ORAC     | umol TE/100 g | 6944   | 1 |      |       |       | B  | 13  |
|         |                              | L-ORAC     | umol TE/100 g | 21867  | 1 |      |       |       | B  | 13  |
|         |                              | Total-ORAC | umol TE/100 g | 28811  | 1 |      |       |       | B  | 13  |
|         |                              | TP         | mg GAE/100 g  | 317    | 1 |      |       |       | B  | 13  |
| 02024   | Spices, mustard seed, yellow | H-ORAC     | umol TE/100 g | 28759  | 1 |      |       |       | B  | 13  |
|         |                              | L-ORAC     | umol TE/100 g | 498    | 1 |      |       |       | B  | 13  |
|         |                              | Total-ORAC | umol TE/100 g | 29257  | 1 |      |       |       | B  | 13  |
|         |                              | TP         | mg GAE/100 g  | 1844   | 1 |      |       |       | B  | 13  |
| 02026   | Spices, onion powder         | H-ORAC     | umol TE/100 g | 5651   | 1 |      |       |       | B  | 13  |

## Oxygen Radical Absorbance Capacity (ORAC) of Selected Foods – 2007

| NDB No. | Description                                  | Parameter  | Unit          | Mean   | N   | SEM     | Min   | Max   | CC | Ref         |
|---------|--|------------|---------------|--------|-----|---------|-------|-------|----|-------------|
|         |  | L-ORAC     | umol TE/100 g | 84     | 1   |         |       |       | B  | 13          |
|         |  | Total-ORAC | umol TE/100 g | 5735   | 1   |         |       |       | B  | 13          |
|         |  | TP         | mg GAE/100 g  | 861    | 1   |         |       |       | B  | 13          |
| 02027   | Spices, oregano, dried                       | H-ORAC     | umol TE/100 g | 183141 | 1   |         |       |       | B  | 13          |
|         |  | L-ORAC     | umol TE/100 g | 16988  | 1   |         |       |       | B  | 13          |
|         |  | Total-ORAC | umol TE/100 g | 200129 | 1   |         |       |       | B  | 13          |
|         |  | TP         | mg GAE/100 g  | 7282   | 1   |         |       |       | B  | 13          |
| 02028   | Spices, paprika                              | H-ORAC     | umol TE/100 g | 16096  | 1   |         |       |       | B  | 13          |
|         |  | L-ORAC     | umol TE/100 g | 1823   | 1   |         |       |       | B  | 13          |
|         |  | Total-ORAC | umol TE/100 g | 17919  | 1   |         |       |       | B  | 13          |
|         |  | TP         | mg GAE/100 g  | 1866   | 1   |         |       |       | B  | 13          |
| 02029   | Spices, parsley, dried                       | H-ORAC     | umol TE/100 g | 74085  | 1   |         |       |       | B  | 13          |
|         |  | L-ORAC     | umol TE/100 g | 264    | 1   |         |       |       | B  | 13          |
|         |  | Total-ORAC | umol TE/100 g | 74349  | 1   |         |       |       | B  | 13          |
|         |  | TP         | mg GAE/100 g  | 2244   | 1   |         |       |       | B  | 13          |
| 02030   | Spices, pepper, black                        | H-ORAC     | umol TE/100 g | 14263  | 2   | 2854.24 | 12245 | 16282 | B  | 13          |
|         |  | L-ORAC     | umol TE/100 g | 13354  | 2   | 6422.16 | 8813  | 17896 | B  | 13          |
|         |  | Total-ORAC | umol TE/100 g | 27618  | 2   | 3567.92 | 25095 | 30141 | B  | 13          |
|         |  | TP         | mg GAE/100 g  | 548    | 2   | 232.36  | 383   | 712   | B  | 13          |
| 02033   | Spices, poppy seed                           | H-ORAC     | umol TE/100 g | 406    | 1   |         |       |       | B  | 13          |
|         |  | L-ORAC     | umol TE/100 g | 75     | 1   |         |       |       | B  | 13          |
|         |  | Total-ORAC | umol TE/100 g | 481    | 1   |         |       |       | B  | 13          |
|         |  | TP         | mg GAE/100 g  | 20     | 1   |         |       |       | B  | 13          |
| 02043   | Spices, turmeric, ground                     | H-ORAC     | umol TE/100 g | 39931  | 1   |         |       |       | B  | 13          |
|         |  | L-ORAC     | umol TE/100 g | 119346 | 1   |         |       |       | B  | 13          |
|         |  | Total-ORAC | umol TE/100 g | 159277 | 1   |         |       |       | B  | 13          |
|         |  | TP         | mg GAE/100 g  | 2117   | 1   |         |       |       | B  | 13          |
| 11463   | Spinach, frozen, chopped or leaf, unprepared | H-ORAC     | umol TE/100 g | 1687   | 4   | 0.00    | 1687  | 1687  | C  | 2           |
|         |  | Total-ORAC | umol TE/100 g | 1687   | 4   | 0.00    | 1687  | 1687  | C  | 2           |
|         |  | TP         | mg GAE/100 g  | 91     | 4   | 0.00    | 91    | 91    | C  | 2           |
| 11457   | Spinach, raw                                 | H-ORAC     | umol TE/100 g | 1512   | 141 | 12.09   | 1307  | 2732  | B  | 6, 7, 9, 13 |
|         |  | L-ORAC     | umol TE/100 g | 420    | 1   |         |       |       | B  | 13          |
|         |  | Total-ORAC | umol TE/100 g | 1515   | 141 | 13.59   | 1307  | 2732  | B  | 6, 7, 9, 13 |
|         |  | TP         | mg GAE/100 g  | 205    | 53  | 2.28    | 101   | 256   | B  | 6, 9, 13    |
| 11477   | Squash, summer, zucchini, includes skin, raw | H-ORAC     | umol TE/100 g | 180    | 4   | 0.00    | 180   | 180   | C  | 6           |
|         |  | Total-ORAC | umol TE/100 g | 180    | 4   | 0.00    | 180   | 180   | C  | 6           |
|         |  | TP         | mg GAE/100 g  | 26     | 4   | 0.00    | 26    | 26    | C  | 6           |

## Oxygen Radical Absorbance Capacity (ORAC) of Selected Foods – 2007

| NDB No. | Description                                       | Parameter  | Unit          | Mean   | N | SEM    | Min    | Max    | CC | Ref |
|---------|---|------------|---------------|--------|---|--------|--------|--------|----|-----|
| 11485   | Squash, winter, butternut, raw                    | H-ORAC     | umol TE/100 g | 396    | 4 | 0.00   | 396    | 396    | C  | 6   |
|         |   | Total-ORAC | umol TE/100 g | 396    | 4 | 0.00   | 396    | 396    | C  | 6   |
|         |   | TP         | mg GAE/100 g  | 26     | 4 | 0.00   | 26     | 26     | C  | 6   |
| 09316   | Strawberries, raw                                 | H-ORAC     | umol TE/100 g | 3541   | 8 | 160.10 | 2946   | 4197   | A  | 13  |
|         |   | L-ORAC     | umol TE/100 g | 36     | 8 | 9.29   | 8      | 69     | A  | 13  |
|         |   | Total-ORAC | umol TE/100 g | 3577   | 8 | 158.95 | 2984   | 4210   | A  | 13  |
|         |   | TP         | mg GAE/100 g  | 368    | 8 | 30.07  | 272    | 476    | A  | 13  |
| 99459   | Sumac, bran, raw                                  | H-ORAC     | umol TE/100 g | 309900 | 2 | 0.00   | 309900 | 309900 | C  | 1   |
|         |   | L-ORAC     | umol TE/100 g | 2500   | 2 | 0.00   | 2500   | 2500   | C  | 1   |
|         |   | Total-ORAC | umol TE/100 g | 312400 | 2 | 0.00   | 312400 | 312400 | C  | 1   |
|         |   | TP         | mg GAE/100 g  | 6600   | 2 | 0.00   | 6600   | 6600   | C  | 1   |
| 99458   | Sumac, grain, raw                                 | H-ORAC     | umol TE/100 g | 85300  | 2 | 0.00   | 85300  | 85300  | C  | 1   |
|         |   | L-ORAC     | umol TE/100 g | 1500   | 2 | 0.00   | 1500   | 1500   | C  | 1   |
|         |   | Total-ORAC | umol TE/100 g | 86800  | 2 | 0.00   | 86800  | 86800  | C  | 1   |
|         |   | TP         | mg GAE/100 g  | 2300   | 2 | 0.00   | 2300   | 2300   | C  | 1   |
| 11508   | Sweet potato, cooked, baked in skin, without salt | H-ORAC     | umol TE/100 g | 2085   | 4 | 213.11 | 1535   | 2322   | A  | 13  |
|         |   | L-ORAC     | umol TE/100 g | 30     | 4 | 4.96   | 18     | 37     | A  | 13  |
|         |   | Total-ORAC | umol TE/100 g | 2115   | 4 | 217.80 | 1552   | 2357   | A  | 13  |
|         |   | TP         | mg GAE/100 g  | 233    | 4 | 14.55  | 200    | 254    | A  | 13  |
| 11510   | Sweet potato, cooked, boiled, without skin        | H-ORAC     | umol TE/100 g | 729    | 4 | 117.64 | 488    | 967    | A  | 13  |
|         |   | L-ORAC     | umol TE/100 g | 37     | 4 | 18.09  | 14     | 82     | A  | 13  |
|         |   | Total-ORAC | umol TE/100 g | 766    | 4 | 129.07 | 524    | 1049   | A  | 13  |
|         |   | TP         | mg GAE/100 g  | 120    | 4 | 16.27  | 95     | 156    | A  | 13  |
| 11507   | Sweet potato, raw, unprepared                     | H-ORAC     | umol TE/100 g | 858    | 4 | 66.16  | 756    | 1020   | A  | 13  |
|         |   | L-ORAC     | umol TE/100 g | 44     | 4 | 6.62   | 30     | 57     | A  | 13  |
|         |   | Total-ORAC | umol TE/100 g | 902    | 4 | 71.82  | 786    | 1077   | A  | 13  |
|         |   | TP         | mg GAE/100 g  | 74     | 4 | 15.73  | 45     | 103    | A  | 13  |
| 09218   | Tangerines, (mandarin oranges), raw               | H-ORAC     | umol TE/100 g | 1620   | 4 | 199.14 | 1298   | 2092   | A  | 13  |
|         |   | L-ORAC     | umol TE/100 g | 7      | 4 | 0.66   | 6      | 9      | A  | 13  |
|         |   | Total-ORAC | umol TE/100 g | 1620   | 4 | 199.14 | 1298   | 2092   | A  | 13  |
|         |   | TP         | mg GAE/100 g  | 192    | 4 | 19.07  | 143    | 213    | A  | 13  |
| 99117   | Tarragon, fresh                                   | H-ORAC     | umol TE/100 g | 15542  | 4 | 0.00   | 15542  | 15542  | C  | 6   |
|         |   | Total-ORAC | umol TE/100 g | 15542  | 4 | 0.00   | 15542  | 15542  | C  | 6   |
|         |   | TP         | mg GAE/100 g  | 643    | 4 | 0.00   | 643    | 643    | C  | 6   |
| 14355   | Tea, brewed, prepared with tap water              | H-ORAC     | umol TE/100 g | 1128   | 1 |        |        |        | C  | 11  |
|         |   | Total-ORAC | umol TE/100 g | 1128   | 1 |        |        |        | C  | 11  |
| 99070   | Tea, green, brewed                                | H-ORAC     | umol TE/100 g | 1253   | 1 |        |        |        | C  | 11  |



## Oxygen Radical Absorbance Capacity (ORAC) of Selected Foods – 2007

| NDB No. | Description                                  | Parameter  | Unit          | Mean  | N   | SEM    | Min   | Max   | CC | Ref   |
|---------|--|------------|---------------|-------|-----|--------|-------|-------|----|-------|
|         |  | Total-ORAC | umol TE/100 g | 1253  | 1   |        |       |       | C  | 11    |
| 02049   | Thyme, fresh                                 | H-ORAC     | umol TE/100 g | 27426 | 4   | 0.00   | 27426 | 27426 | C  | 6     |
|         |  | Total-ORAC | umol TE/100 g | 27426 | 4   | 0.00   | 27426 | 27426 | C  | 6     |
|         |  | TP         | mg GAE/100 g  | 1734  | 4   | 0.00   | 1734  | 1734  | C  | 6     |
|         |  |            |               |       |     |        |       |       |    |       |
| 11540   | Tomato juice, canned, with salt added        | H-ORAC     | umol TE/100 g | 486   | 2   | 203.18 | 343   | 630   | B  | 13    |
|         |  | Total-ORAC | umol TE/100 g | 486   | 2   | 203.18 | 343   | 630   | B  | 13    |
|         |  | TP         | mg GAE/100 g  | 323   | 1   |        |       |       | B  | 13    |
| 11549   | Tomato products, canned, sauce               | H-ORAC     | umol TE/100 g | 652   | 1   |        |       |       | B  | 13    |
|         |  | L-ORAC     | umol TE/100 g | 42    | 1   |        |       |       | B  | 13    |
|         |  | Total-ORAC | umol TE/100 g | 694   | 1   |        |       |       | B  | 13    |
|         |  | TP         | mg GAE/100 g  | 177   | 1   |        |       |       | B  | 13    |
| 99051   | Tomatoes, plum, raw                          | H-ORAC     | umol TE/100 g | 546   | 8   | 30.51  | 395   | 697   | C  | 6     |
|         |  | Total-ORAC | umol TE/100 g | 546   | 8   | 30.51  | 395   | 697   | C  | 6     |
|         |  | TP         | mg GAE/100 g  | 36    | 8   | 0.11   | 35    | 36    | C  | 6     |
| 11530   | Tomatoes, red, ripe, cooked                  | H-ORAC     | umol TE/100 g | 389   | 8   | 32.98  | 262   | 520   | A  | 13    |
|         |  | L-ORAC     | umol TE/100 g | 34    | 4   | 3.34   | 27    | 41    | A  | 13    |
|         |  | Total-ORAC | umol TE/100 g | 406   | 8   | 37.76  | 262   | 547   | A  | 13    |
|         |  | TP         | mg GAE/100 g  | 94    | 8   | 5.52   | 67    | 110   | A  | 13    |
| 11529   | Tomatoes, red, ripe, raw, year round average | H-ORAC     | umol TE/100 g | 366   | 176 | 1.26   | 248   | 457   | A  | 7, 13 |
|         |  | L-ORAC     | umol TE/100 g | 23    | 7   | 2.68   | 15    | 31    | A  | 13    |
|         |  | Total-ORAC | umol TE/100 g | 367   | 176 | 1.04   | 279   | 475   | A  | 7, 13 |
|         |  | TP         | mg GAE/100 g  | 80    | 7   | 4.82   | 70    | 99    | A  | 13    |
| 19444   | Tortilla chips, reduced fat, Olestra         | H-ORAC     | umol TE/100 g | 1609  | 2   | 175.29 | 1486  | 1733  | B  | 13    |
|         |  | L-ORAC     | umol TE/100 g | 94    | 2   | 42.99  | 64    | 125   | B  | 13    |
|         |  | Total-ORAC | umol TE/100 g | 1704  | 2   | 218.28 | 1549  | 1858  | B  | 13    |
|         |  | TP         | mg GAE/100 g  | 304   | 2   | 35.64  | 278   | 329   | B  | 13    |
| 11578   | Vegetable juice cocktail, canned             | H-ORAC     | umol TE/100 g | 548   | 1   |        |       |       | B  | 13    |
|         |  | Total-ORAC | umol TE/100 g | 548   | 1   |        |       |       | B  | 13    |
|         |  | TP         | mg GAE/100 g  | 244   | 1   |        |       |       | B  | 13    |
| 99441   | Vinegar, Apple                               | H-ORAC     | umol TE/100 g | 564   | 4   | 0.00   | 564   | 564   | C  | 6     |
|         |  | Total-ORAC | umol TE/100 g | 564   | 4   | 0.00   | 564   | 564   | C  | 6     |
|         |  | TP         | mg GAE/100 g  | 23    | 4   | 0.00   | 23    | 23    | C  | 6     |
| 99442   | Vinegar, Apple and Honey                     | H-ORAC     | umol TE/100 g | 270   | 4   | 0.00   | 270   | 270   | C  | 6     |
|         |  | Total-ORAC | umol TE/100 g | 270   | 4   | 0.00   | 270   | 270   | C  | 6     |
|         |  | TP         | mg GAE/100 g  | 27    | 4   | 0.00   | 27    | 27    | C  | 6     |
| 99443   | Vinegar, Honey                               | H-ORAC     | umol TE/100 g | 225   | 4   | 0.00   | 225   | 225   | C  | 6     |
|         |  | Total-ORAC | umol TE/100 g | 225   | 4   | 0.00   | 225   | 225   | C  | 6     |

## Oxygen Radical Absorbance Capacity (ORAC) of Selected Foods – 2007

| NDB No. | Description       | Parameter  | Unit          | Mean | N | SEM  | Min | Max | CC | Ref |
|---------|-------------------|------------|---------------|------|---|------|-----|-----|----|-----|
|         |                   | TP         | mg GAE/100 g  | 21   | 4 | 0.00 | 21  | 21  | C  | 6   |
| 99444   | Vinegar, Red wine | H-ORAC     | umol TE/100 g | 410  | 4 | 0.00 | 410 | 410 | C  | 6   |
|         |                   | Total-ORAC | umol TE/100 g | 410  | 4 | 0.00 | 410 | 410 | C  | 6   |
|         |                   | TP         | mg GAE/100 g  | 26   | 4 | 0.00 | 26  | 26  | C  | 6   |
|         |                   |            |               |      |   |      |     |     |    |     |
| 09326   | Watermelon, raw   | H-ORAC     | umol TE/100 g | 123  | 6 | 7.48 | 99  | 145 | A  | 13  |
|         |                   | L-ORAC     | umol TE/100 g | 19   | 6 | 1.96 | 14  | 25  | A  | 13  |
|         |                   | Total-ORAC | umol TE/100 g | 142  | 6 | 8.90 | 112 | 166 | A  | 13  |
|         |                   | TP         | mg GAE/100 g  | 59   | 6 | 6.17 | 39  | 74  | A  | 13  |

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