

USDA FDA Approximate pH of Foods and Food Products

The pH and/or acidity of a food are generally used to determine processing requirements and the applicability of GMP regulations for regulatory purposes. Methods and conditions for determining the pH and acidity of foods are also summarized in 21 CFR 114.90. Methodology for pH is generally available from pH meter and electrode manufacturers.

To assist readers in determining the product pH levels, the approximate ranges of pH values are compiled below. Considerable variation exists between varieties, condition of growing and processing methods, etc. Data is presented for the edible portion of foods in their normal and natural state, unless otherwise designated. We solicit your input to this matter. This list will be updated when new information is available. Please contact the LACF Coordinator by phone at 301-436-2411 or email to lacf@cfsan.fda.gov.

Item	Approximate pH (range)
Abalone	6.10 - 6.50
Abalone mushroom	5.00 -
Ackees	5.50
All Bran	5.59 - 6.19
Aloe Juice	6.00 - 6.80
Aloe vera	6.10
Anchovies	6.50
Anchovies, stuffed w/capers, in olive oil	5.58
Apple Sauce	3.10 - 3.60
Apples Delicious	3.90
Apples Golden Delicious	3.60
Apples Jonathan	3.33
Apples Juice	3.35 - 4.00
Apples McIntosh	3.34

Apples, baked with sugar	3.20 - 3.55
Apples, eating	3.30 - 4.00
Apricots	3.30 - 4.80
Apricots Dried, stewed	3.30 - 3.51
Apricots Nectar	3.78
Apricots Pureed	3.42 - 3.83
Apricots Strained	3.72 - 3.95
Apricots, canned	3.40 - 3.78
Arrowroot Crackers	6.63 - 6.80
Arrowroot Flour	7.4
Arrowroot Gruel	6.37 - 6.87
Artichokes	5.50 - 6.00
Artichokes, canned, acidified	4.30 - 4.60
Artichokes, French, cooked	5.60 - 6.00
Artichokes, Jerusalem, cooked	5.93 - 6.00
Asparagus	6.00 - 6.70
Asparagus Buds	6.70
Asparagus Stalks	6.10
Asparagus, canned	5.00 - 6.00
Asparagus, cooked	6.03 - 6.16
Asparagus, frozen, cooked	6.35 - 6.48
Asparagus, green, canned	5.20 - 5.32
Asparagus, strained	4.80 - 5.09
Avocados	6.27 - 6.58
Baby corn	5.20 -
Baby Food Soup, unstrained	5.95 - 6.05

Bamboo Shoots	5.10 - 6.20
Bamboo Shoots, preserved	3.50 - 4.60
Banana, yellow	5.00 - 5.29
Bananas	4.50 - 5.20
Bananas, red	4.58 - 4.75
Barley, cooked	5.19 - 5.32
Basil pesto	4.90
Bass, sea, broiled	6.58 - 6.78
Bass, striped, broiled	6.50 - 6.70
Beans	5.60 - 6.50
Beans Black	5.78 - 6.02
Beans Boston style	5.05 - 5.42
Beans Kidney	5.40 - 6.00
Beans Lima	6.50
Beans Soy	6.00 - 6.60
Beans String	5.60
Beans Wax	5.30 - 5.70
Beans, pork & tomato sauce, canned	5.10 - 5.80
Beans, refried	5.90
Beans, vegetarian, tomato sauce, canned	5.32
Beets	5.30 - 6.60
Beets, canned	4.90 - 5.80
Beets, canned, acidified	4.30 - 4.60
Beets, chopped	5.32 - 5.56
Beets, cooked	5.23 - 6.50
Beets, strained	5.32 - 5.56

Bird's nest soup	7.20 - 7.60
Blackberries, Washington	3.85 - 4.50
Blueberries, frozen	3.11 - 3.22
Blueberries, Maine	3.12 - 3.33
Bluefish, Boston, filet, broiled	6.09 - 6.50
Bran	
Bread Rolls, white	5.46 - 5.52
Bread, Boston, brown	6.53
Bread, Cracked wheat	5.43 - 5.50
Bread, pumpernickel	5.40 -
Bread, Rye	5.20 - 5.90
Bread, white	5.00 - 6.20
Bread, whole wheat	5.47 - 5.85
Breadfruit, cooked	5.33
Broccoli, canned	5.20 - 6.00
Broccoli, cooked	6.30 - 6.52
Broccoli, frozen, cooked	6.30 - 6.85
Brussels sprout	6.00 - 6.30
Buttermilk	4.41 - 4.83
Cabbage	5.20 - 6.80
Cabbage Green	5.50 - 6.75
Cabbage Red	5.60 - 6.00
Cabbage Savoy	6.30
Cabbage White	6.20
Cactus	4.70
Calamary (Squid)	5.80

Cantaloupe	6.13 - 6.58
Capers	6.00
Carp	6.00
Carrots	5.88 - 6.40
Carrots, canned	5.18 - 5.22
Carrots, chopped	5.30 - 5.56
Carrots, cooked	5.58 - 6.03
Carrots, pureed	4.55 - 5.80
Carrots, strained	5.10 - 5.10
Cauliflower	5.60
Cauliflower, cooked	6.45 - 6.80
Caviar, American	5.70 - 6.00
Celery	5.70 - 6.00
Celery Knob, cooked	5.71 - 5.85
Celery, cooked	5.37 - 5.92
Cereal, strained	6.44 - 6.45
Chayote (mirliton), cooked	6.00 - 6.30
Cheese Dip	5.80
Cheese, American, mild	4.98
Cheese, Camembert	7.44
Cheese, Cheddar	5.90
Cheese, Cottage	4.75 - 5.02
Cheese, Cream, Philadelphia	4.10 - 4.79
Cheese, Edem	5.40
Cheese, Old English	6.15
Cheese, Parmesan	5.20 - 5.30

Cheese, Roquefort	5.10 - 5.98
Cheese, Snippy	5.18 - 5.21
Cheese, Stilton	5.70
Cheese, Swiss Gruyere	5.68 - 6.62
Cherries, black, canned	3.82 - 3.93
Cherries, California	4.01 - 4.54
Cherries, frozen	3.32 - 3.37
Cherries, Maraschino	3.47 - 3.52
Cherries, red, Water pack	3.25 - 3.82
Cherries, Royal Ann	3.80 - 3.83
Chicory	5.90 - 6.05
Chili Sauce, acidified	2.77 - 3.70
Chives	5.20 - 6.31
Chrysanthemum drink	6.50
Clam Chowder, New England	6.40
Clams	6.00 - 7.10
Coconut milk	6.10 - 7.00
Coconut preserves	3.80 - 7.00
Coconut, fresh	5.50 - 7.80
Cod liver	6.20
Codfish, boiled	5.30 - 6.10
Conch	7.52 - 8.40
Congee	6.40
Corn	5.90 - 7.30
Corn Flakes	4.90 - 5.38
Corn, canned	5.90 - 6.50

Corn, frozen, cooked	7.33 - 7.68
Corn, Golden Bantam, cooked on cob	6.22 - 7.04
Crab meat	6.50 - 7.00
Crabapple Jelly, corn	2.93 - 3.02
Crabmeat, cooked	6.62 - 6.98
Cranberry Juice, canned	2.30 - 2.52
Cream of Wheat, cooked	6.06 - 6.16
Cream, 20 per cent	6.50 - 6.68
Cream, 40 per cent	6.44 - 6.80
Cucumbers	5.12 - 5.78
Cucumbers, Dill pickles	3.20 - 3.70
Cucumbers, pickled	4.20 - 4.60
Curry Paste,acidified	4.60 - 4.80
Curry sauce	6.00
Cuttlefish	6.30
Dates, canned	6.20 - 6.40
Dates, Dromedary	4.14 - 4.88
Dungeness Crab Meat	
Eell	6.20
Egg White	7.96
Egg Yolk	6.10
Eggplant	5.50 - 6.50
Eggs, new-laid, whole	6.58
Enchalada sauce	4.40 - 4.70
Escarolle	5.70 - 6.00
Fennel (Anise)	5.48 - 5.88

Fennel, cooked	5.80 - 6.02
Figs, Calamyrna	5.05 - 5.98
Figs, canned	4.92 - 5.00
Flakes	5.45 - 5.67
Flounder, boiled	6.10 - 6.90
Flounder, filet, broiled	6.39 - 6.89
Four bean salad	5.60
Fruit cocktail	3.60 - 4.00
Garlic	5.80
Gelatin Dessert	2.60
Gelatin, plain jell	6.08
Gherkin	
Ginger	5.60 - 5.90
Ginseng, Korean drink	6.00 - 6.50
Gooseberries	2.80 - 3.10
Grapefruit	3.00 - 3.75
Grapefruit Juice, canned	2.90 - 3.25
Grapefruit, canned	3.08 - 3.32
Grapes, Concord	2.80 - 3.00
Grapes, Lady Finger	3.51 - 3.58
Grapes, Malaga	3.71 - 3.78
Grapes, Niagara	2.80 - 3.27
Grapes, Ribier	3.70 - 3.80
Grapes, Seedless	2.90 - 3.82
Grapes, Tokyo	3.50 - 3.84
Grass jelly	5.80 - 7.20

Greens, Mixed, chopped	5.05 - 5.22
Greens, Mixed, strained	5.22 - 5.30
Grenadine Syrup	2.31
Guava Jelly	3.73
Guava nectar	5.50
Guava, canned	3.37 - 4. 10
Haddock, Filet, broiled	6.17 - 6.82
Hearts of Palm	5.70
Herring	6.10
Herring, Pickled	4.50 - 5.00
Hominy, cooked	6.00 - 7.50
Honey	3.70 - 4.20
Honey Aloe	4.70
Horseradish, freshly ground	5.35
Huckleberries, cooked with sugar	3.38 - 3.43
Jackfruit	4.80 - 6.80
Jam, fruit	3.50 - 4.50
Jellies, fruit	3.00 - 3.50
Jujube	5.20 -
Junket Raspberry	6.27
Junket Vanilla	6.49
Kale, cooked	6.36 - 6.80
Kelp	6.30
Ketchup	3.89 - 3.92
Kippered, Herring, Marshall	5.75 - 6.20
Kumquat, Florida	3.64 - 4.25

Leeks	5.50 - 6.17
Leeks, cooked	5.49 - 6.10
Lemon Juice	2.00 - 2.60
Lentils, cooked	6.30 - 6.83
Lettuce	5.80 - 6.15
Lettuce, Boston	5.89 - 6.05
Lettuce, Iceberg	5.70 - 6.13
Lime	2.00 - 2.80
Lime Juice	2.00 - 2.35
Lobster bisque	6.90 -
Lobster, cooked	7.10 - 7.43
Loganberries	2.70 - 3.50
Loquat (May be acidified to pH 3.8)	5.10
Lotus Root	6.90 -
Lychee	4.70 - 5.01
Macaroni, cooked	5.10 - 6.41
Mackerel, canned	5.90 - 6.40
Mackerel, King, boiled	6.26 - 6.50
Mackerel, Spanish, broiled	6.07 - 6.36
Mangoes, green	5.80 - 6.00
Mangoes, ripe	3.40 - 4.80
Mangostine	4.50 -5.00
Maple syrup	5.15
Maple syrup, light (Acidified)	4.60
Matzos	5.70
Mayhaw (a variety of strawberry)	3.27 - 3.86

Melba Toast	5.08 - 5.30
Melon, Casaba	5.78 - 6.00
Melons, Honey dew	6.00 - 6.67
Melons, Persian	5.90 - 6.38
Milk, Acidophilus	4.09 - 4.25
Milk, condensed	6.33
Milk, cow	6.40 - 6.80
Milk, evaporated	5.90 - 6.30
Milk, Goat's	6.48
Milk, peptonized	7.10
Milk, Sour, fine curd	4.70 - 5.65
Milkfish	5.30
Mint Jelly	3.01
Molasses	4.90 - 5.40
Muscadine (A variety of grape)	3.20 - 3.40
Mushrooms	6.00 - 6.70
Mushrooms, cooked	6.00 - 6.22
Mussels	6.00 - 6.85
Mustard	3.55 - 6.00
Nata De Coco	5.00
Nectarines	3.92 - 4.18
Noodles, boiled	6.08 - 6.50
Oatmeal, cooked	6.20 - 6.60
Octopus	6.00 - 6.50
Okra, cooked	5.50 - 6.60
Olives, black	6.00 - 7.00

Olives, green, fermented	3.60 - 4.60
Olives, ripe	6.00 - 7.50
Onion white	5.37 - 5.85
Onions, pickled	3.70 - 4.60
Onions, red	5.30 - 5.80
Onions, yellow	5.32 - 5.60
Orange Juice, California	3.30 - 4.19
Orange, Juice Florida	3.30 - 4.15
Orange, Marmalade	3.00 - 3.33
Oranges, Florida	3.69 - 4.34
Oranges, Florida "color added"	3.60 - 3.90
Oyster mushroom	5.00 - 6.00
Oysters	5.68 - 6.17
Oysters, smoked	6.00
Palm, heart of	6.70
Papaya	5.20 - 6.00
Papaya Marmalade	3.53 - 4.00
Parsley	5.70 - 6.00
Parsnip	5.30 - 5.70
Parsnip, cooked	5.45 - 5.65
Pate	5.90
Peaches	3.30 - 4.05
Peaches, canned	3.70 - 4.20
Peaches, cooked with sugar	3.55 - 3.72
Peaches, frozen	3.28 - 3.35
Peanut Butter	6.28

Pear Nectar	4.03
Pears, Bartlett	3.50 - 4.60
Pears, canned	4.00 - 4.07
Pears, Sickle cooked w/sugar	4.04 - 4.21
Peas, canned	5.70 - 6.00
Peas, Chick, Garbanzo	6.48 - 6.80
Peas, cooked	6.22 - 6.88
Peas, dried (split green), cooked	6.45 - 6.80
Peas, dried (split yellow), cooked	6.43 - 6.62
Peas, frozen, cooked	6.40 - 6.70
Peas, pureed	4.90 - 5.85
Peas, strained	5.91 - 6.12
Peppers	4.65 - 5.45
Peppers, green	5.20 - 5.93
Persimmons	4.42 - 4.70
Pickles, fresh pack	5.10 - 5.40
Pimento, canned, acidified	4.40 - 4.60
Pimiento	4.40 - 4.90
Pineapple	3.20 - 4.00
Pineapple Juice, canned	3.30 - 3.60
Pineapple, canned	3.35 - 4.10
Plum Nectar	3.45
Plums, Blue	2.80 - 3.40
Plums, Damson	2.90 - 3.10
Plums, Frozen	3.22 - 3.42
Plums, Green Gage	3.60 - 4.30

Plums, Green Gage, canned	3.22 - 3.32
Plums, Red	3.60 - 4.30
Plums, spiced	3.64
Plums, Yellow	3.90 - 4.45
Pollack, filet, broiled	6.72 - 6.82
Pomegranate	2.93 - 3.20
Porgy, broiled	6.40 - 6.49
Pork & Beans, rts.	5.70
Potatoes	5.40 - 5.90
Potatoes Mashed	5.10
Prune Juice	3.95 - 3.97
Prune, pureed	3.60 - 4.30
Prune, strained	3.58 - 3.83
Prunes, dried, stewed	3.63 - 3.92
Puffed Rice	6.27 - 6.40
Puffed Wheat	5.26 - 5.77
Pumpkin	4.90 - 5.50
Quince Jelly	3.70
Quince, fresh, stewed	3.12 - 3.40
Radishes, red	5.85 - 6.05
Radishes, white	5.52 - 5.69
Raisins, seedless	3.80 - 4.10
Rambutan (Thailand)	4.90
Raspberries	3.22 - 3.95
Raspberries, frozen	3.18 - 3.26
Raspberries, New Jersey	3.50 - 3.82

Raspberry Jam	2.87 - 3.17
Rattan, Thailand	5.20 -
Razor Clams	6.20
Razor shell (sea asparagus)	6.00
Red Ginseng	5.50
Red Pepper Relish	3.10 - 3.62
Rhubarb	3.10 - 3.40
Rhubarb canned	3.40
Rhubarb, California, stewed	3.20 - 3.34
Rice (all cooked)	
Rice Brown	6.20 - 6.80
Rice Krispies	5.40 - 5.73
Rice White	6.00 - 6.70
Rice Wild	6.00 - 6.50
Romaine	5.78 - 6.06
Salmon, fresh, boiled	5.85 - 6.50
Salmon, fresh, broiled	5.36 - 6.40
Salmon, Red Alaska, canned	6.07 - 6.16
Salsa	
Sardine, Portuguese, in olive oil	5.42 - 5.93
Sardines	5.70 - 6.60
Satay sauce	5.00
Sauce, Enchilada	5.50 -
Sauce, Fish	4.93 - 5.02
Sauce, Shrimp	7.01 - 7.27
Sauerkraut	3.30 - 3.60

Scallion	6.20 -
Scallop	6.00
Scotch Broth.	5.92
Sea Snail (Top shell)	6.00
Shad Roe, sauted	5.70 - 5.90
Shallots, cooked	5.30 - 5.70
Sherbet, raspberry	3.69
Sherry-wine	3.37
Shredded Ralston	5.32 - 5.60
Shredded Wheat	6.05 - 6.49
Shrimp	6.50 - 7.00
Shrimp Paste	5.00 - 6.77
Smelts, Sauted	6.67 - 6.90
Soda Crackers	5.65 - 7.32
Soup Broccoli Cheese, condensed	5.60 -
Soup Chicken Broth	5.80
Soup Corn, condensed	6.80
Soup Cream of Asparagus	6.10
Soup Cream of Celery, condensed	6.20 -
Soup Cream of Coconut	5.51 - 5.87
Soup Cream of Mushroom, canned	5.95 - 6.40
Soup Cream of Mushroom, condensed	6.00 - 6.20
Soup Cream of Pea, canned	5.70
Soup Cream of Potato	6.00
Soup Cream of Potato, condensed	5.80 -
Soup Cream of shrimp, condensed	5.80

Soup Cream of Tomato, canned	4.62
Soup Cream style corn, condensed	5.70 - 5.80
Soup Lentil	5.80
Soup Lobster	5.70
Soup Minestrone condensed	5.40
Soup New England Clam Chowder, condensed	6.00-
Soup Oyster Stew, condensed	6.30 -
Soup Peanut	7.5
Soup Potato	5.90
Soup Tomato Rice, condensed	5.50 -
Soup Vegetable, canned	5.16
Soup Vegetable, chopped	4.98 - 5.02
Soup Vegetable, strained	4.99 - 5.00
Soy bean curd (tofu)	7.20
Soy infant formula	6.60 - 7.00
Soy Sauce	4.40 - 5.40
Soybean milk	7.00
Spaghetti, cooked	5.97 - 6.40
Spinach	5.50 - 6.80
Spinach, chopped	5.38 - 5.52
Spinach, cooked	6.60 - 7.18
Spinach, frozen, cooked	6.30 - 6.52
Spinach, pureed	5.50 - 6.22
Spinach, strained	5.63 - 5.79
Squash, acorn, cooked	5.18 - 6.49
Squash, Kubbard, cooked	6.00 - 6.20

Squash, white, cooked	5.52 - 5.80
Squash, yellow, cooked	5.79 - 6.00
Squid	6.00 - 6.50
Straw mushroom	4.90
Strawberries	3.00 - 3.90
Strawberries, California	3.32 - 3.50
Strawberries, frozen	3.21 - 3.32
Strawberry Jam	3.00 - 3.40
Sturgeon	6.20
Sweet	5.30 - 5.60
Sweet Potatoes	5.30 - 5.60
Swiss Chard, cooked	6.17 - 6.78
Tamarind	3.00 -
Tangerine	3.32 - 4.48
Taro syrup	4.50
Tea	7.20
Three-Bean Salad	5.40
Tofu (soybean Curd)	7.20
Tomatillo (resembling Cherry tomatoes)	3.83
Tomatoes	4.30 - 4.90
Tomatoes, canned	3.50 - 4.70
Tomatoes, Juice	4.10 - 4.60
Tomatoes, Paste	3.50 - 4.70
Tomatoes, Puree	4.30 - 4.47
Tomatoes, Strained	4.32 - 4.58
Tomatoes, Wine ripened	4.42 - 4.65

Trout, Sea, sauted	6.20 - 6.33
Truffle	5.30 - 6.50
Tubers	5.70
Tuna Fish, canned	5.90 - 6.20
Turnip, greens, cooked	5.40 - 6.20
Turnip, white, cooked	5.76 - 5.85
Turnip, yellow, cooked	5.57 - 5.82
Turnips	5.29 - 5.90
Vegetable Juice	3.90 - 4.30
Vermicelli, cooked	5.80 - 6.50
Vinegar	2.40 - 3.40
Vinegar, cider	3.10
Walnuts, English	5.42
Water Chestnut	6.00 - 6.20
Watercress	5.88 - 6.18
Watermelon	5.18 - 5.60
Wax gourd drink	7.20
Wheat Krispice	4.99 - 5.62
Wheaties	5.00 - 5.12
Wheatnena	5.85 - 6.08
Winesap	3.47
Worcestershire sauce	3.63 - 4.00
Yams, cooked	5.50 - 6.81
Yangsberries, frozen	3.00 - 3.70
Yeast	5.65
Zucchini, cooked	5.69 - 6.10

Zwiebach	4.84 - 4.94
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