

## Chapter Ag 51

## PESTICIDE RESIDUES ON FOODS

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**Ag 51.01 General provisions.** (1) This chapter designates pesticide chemicals that for the purposes of section 97.25 (2) (h) 2, Wis. Stats., are found to be poisonous or deleterious substances required in the production of foods consisting of, or processed from, raw agricultural commodities, and limits the quantities of such pesticide chemicals in or on such foods to the extent necessary for the protection of public health.

(2) Pesticide chemicals are named by their common names wherever practicable, otherwise by their chemical names or by names assigned to them by the United States Department of Agriculture.

(3) The following pesticide chemicals are generally recognized as safe for use: sulfur, lime, lime-sulfur, potassium polysulfide, sodium carbonate, sodium polysulfide. The imposition of limits on the amounts of residues of the foregoing pesticide chemicals is not necessary.

(4) Except as provided in subsection (3) of this section and in section Ag 51.07, the quantities of pesticide chemicals remaining in or on raw agricultural commodities used as foods shall be limited to the tolerances established in this chapter.

(5) In the case of foods processed from raw agricultural commodities, the poisonous or deleterious pesticide residues shall be removed to the extent possible in good manufacturing practice, and the concentration of pesticide chemicals in the processed foods when ready to eat shall not be greater than the tolerance permitted on the raw agricultural commodities.

(6) A food which bears or contains any pesticide chemicals in a quantity which exceeds the tolerances herein established is adulterated under section 97.25 (2) (h), Wis. Stats.

(7) Establishment of a tolerance for a pesticide chemical in or on foods consisting of, or processed from, a named raw agricultural commodity shall not be construed to authorize its use or presence in or on any other food for which no tolerance has been prescribed.

(8) The tolerances established apply only to residues resulting from the application of the pesticide chemicals prior to harvest, except where tolerances for post-harvest application are specifically established. This subsection does not apply to animal products.

**History:** Cr. Register, March, 1957, No. 15, eff. 4-1-57.

**Ag 51.02 Combined residues.** (1) For the purposes of this chapter: (a) The following compounds are members of the class of dithiocarbamates: ferbam, maneb, thiram, ziram, zineb.

Register, March, 1957, No. 15.

(b) The following compounds are members of the class of chlorinated hydrocarbons: aldrin, benzene hexachloride, chlordane, chlorinated camphene (toxaphene), chlorobenzilate (ethyl 4,4'-dichlorobenzilate), p-chlorophenyl-p-chlorobenzenesulfonate, DDD (TDE), DDT, 1,1-dichloro-2,2-bis (p-ethylphenyl) ethane, 2,4-dichlorophenoxy acetic acid, dieldrin, heptachlor, lindane, methoxychlor, SES (sodium 2,4-dichlorophenoxyethyl sulfate), sulphenone (p-chlorophenyl phenyl sulfone).

(c) The following compounds are members of the class of organic phosphates: EPN, malathion, methyl parathion, parathion, systox (0,0-diethyl-(2-ethylmercaptoethyl) thiophosphate, a mixture of the thiono and thiol isomers).

(d) The following compounds are members of the class of dinitro compounds: dinitro-0-cyclohexylphenol, dicyclohexylamine salt of dinitro-0-cyclohexylphenol.

(2) Except as noted in subsections (3) and (4), where residues from 2 or more pesticide chemicals in the same class are present the tolerance for the total of such residues shall be the same as that for the pesticide chemicals having the lowest numerical tolerance in this class.

(3) Where residues from 2 or more pesticide chemicals in the same class are present and there are available methods that permit quantitative determination of each residue, the quantity of combined residues that are within the tolerance may be determined as follows:

(a) Determine the quantity of each residue present.

(b) Divide the quantity of each residue by the tolerance that would apply if it occurred alone, and multiply by 100 to determine the percentage of the permitted amount of residue present.

(c) Add the percentages so obtained for all residues present.

(d) The sum of the percentages shall not exceed 100%.

(4) Where residues from 2 or more pesticide chemicals in the same class are present and there are available methods that permit quantitative determination of one or more, but not all, of the residues, the amounts of such residues as may be determinable shall be deducted from the total amount of residues present, and the remainder shall have the same tolerance as that for the chemical having the lowest numerical tolerance in that class. The quantity of combined residues that are within the tolerance may be determined as follows:

(a) Determine the quantity of each determinable residue present.

(b) Deduct the amounts of such residues from the total amount of residues present and consider the remainder to have the same tolerance as that for the chemical having the lowest numerical tolerance in that class.

(c) Divide the quantity of each determinable residue by the tolerance that would apply if it occurred alone and the quantity of the remaining residue by the tolerance for the chemical having the lowest numerical tolerance in that class and multiply by 100 to determine the percentage of the permitted amount of residue present.

(d) Add the percentages so obtained for all residues present.

(e) The sum of the percentages shall not exceed 100%.

**History:** Cr. Register, March, 1957, No. 15, eff. 4-1-57; Am. Register, June, 1957, No. 18, eff. 7-1-57.

Register, June, 1957, No. 18.

**Ag 51.03 Arsenic residues.** Where a tolerance is established for more than one pesticide chemical containing arsenic, the total amount of such pesticide chemicals shall not yield more than 3.5 parts per million of  $As_2O_3$ .

**History:** Cr. Register, March, 1957, No. 15, eff. 4-1-57.

**Ag 51.04 Inorganic bromide residues.** Where tolerances for inorganic bromide in or on the same raw agricultural commodity are set in 2 or more subsections of section Ag 51.08, the overall quantity of inorganic bromide to be tolerated from use of 2 or more pesticide chemicals for which tolerances are established is the highest of the separate applicable tolerances. For example, where the bromide tolerance on lima beans from ethylene dibromide soil treatment is 5 parts per million and on lima beans from methyl bromide fumigation is 50 parts per million, the overall inorganic bromide tolerance for lima beans grown on ethylene bromide treated soil and also fumigated with methyl bromide after harvest is 50 parts per million.

**History:** Cr. Register, March, 1957, No. 15, eff. 4-1-57.

**Ag 51.05 Cyanide residues.** Where tolerances are established for both calcium cyanide and hydrogen cyanide in or on the same raw agricultural commodity, the total amount of such pesticide chemicals shall not yield more than 25 parts per million, calculated as hydrogen cyanide.

**History:** Cr. Register, March, 1957, No. 15, eff. 4-1-57.

**Ag 51.06 Prohibited residues.** Except as specifically provided in section Ag 51.08, residues of the following pesticide chemicals should not remain on fruits or vegetables as prepared for market: calcium cyanide, dinitro-O-sec. butylphenol, dinitro-O-cresol, hexaethyl tetraphosphate, tetraethyl pyrophosphate, hydrocyanic acid, mercury-containing compounds, selenium and selenium compounds.

**History:** Cr. Register, March, 1957, No. 15, eff. 4-1-57.

**Ag 51.07 Exemptions from tolerances.** (1) When applied to growing crops prior to the time of harvest, in accordance with good agricultural practice, the following pesticide chemicals are exempt from the requirement of a tolerance:

(a) The following copper compounds: Bordeaux mixture, copper acetate, basic copper carbonate (malachite), copper-lime mixtures, copper oxychloride, copper silicate, copper sulfate basic, copper-zinc chromate, cuprous oxide.

(b) Allethrin (allyl homolog of cinerin I) when used in the production of: beans, broccoli, brussels sprouts, cabbage, cauliflower, collards, horseradish, kale, kohlrabi, lettuce, mushrooms, mustard greens, radishes, rutabagas, turnips.

(c) N-Octylbicyclo- (2,2,1) -5-heptene-2,3-dicarboximide).

(d) Petroleum oils.

(e) Piperonyl butoxide.

(f) Piperonyl cyclonene.

(g) N-Propyl isome.

(h) Pyrethrum and pyrethrins.

(i) Rotenone or derris or cube roots.

(j) Ryania.

(k) Sabadilla.

Register, March, 1957, No. 15.

(2) Ammonia is exempted from the requirement of a tolerance when it is used after harvest on the following citrus fruits: grapefruit, lemons, oranges.

(3) Carbon disulfide, carbon tetrachloride, and ethylene dichloride are exempted from the requirement of a tolerance when they are used as fumigants for the following grains: barley, corn, oats, popcorn, rice, rye, sorghum (milo), wheat. The organic bromide residues from fumigation with ethylene dibromide are exempted from the requirement of a tolerance when ethylene dibromide is used as a fumigant for the same grains.

**History:** Cr. Register, March, 1957, No. 15, eff. 4-1-57.

**Ag 51.08 Tolerances.** Each subsection of this section designates a pesticide chemical or group of pesticide chemicals found to be required in the production of foods consisting of, or processed from, the raw agricultural commodities specified, and prescribes a tolerance in terms of parts by weight for the pesticide chemical, or poisonous or deleterious residue resulting from its addition, to 1 million parts by weight of the raw agricultural commodities. The abbreviation "p. p. m." means parts per million. "Zero" tolerance means that no amount of the pesticide chemical may remain on the raw agricultural commodity when it is offered for sale.

(1) ALDRIN (a product consisting of 95% of the compound 1,2,3,4,10,10-hexachloro-1,4,4a,5,8,8a-hexahydro-1,4,5,8-dimethanonaphthalene and 5% chlorinated hydrocarbons). The tolerances are:

(a) Zero for the following: beans, black-eyed peas, corn grain, peas, popcorn, soybeans.

(b) 0.25 p. p. m. for the following:

1. Fruits: apples, apricots, citrus fruits, pears, quinces.
2. Vegetables: beets—garden (including tops), broccoli, brussels sprouts, cabbage, cauliflower, collards, cucumbers, endive (escarole), garlic, kale, kohlrabi, leeks, lettuce, mustard greens, onions, peanuts, rutabagas, salsify tops, shallots, spinach, squash—summer, Swiss chard, turnips (including tops).

(c) 0.1 p. p. m. for the following:

1. Fruits: cherries, cranberries, grapes, mangoes, nectarines, peaches, pineapples, plums, prunes, strawberries.

2. Vegetables: asparagus, beets—sugar (including tops), carrots, celery, eggplant, horseradish, melons, parsnips, peppers, pimentos, potatoes, pumpkins, radishes, salsify root, squash—winter, sweet potatoes, tomatoes.

3. Grains: barley, oats, rice, rye, wheat.

(2) ARAMITE (2-(p-tert-butylphenoxy)-isopropyl-2-chloroethyl sulfite). Tolerance is 1 p. p. m. for the following:

(a) *Fruits:* apples, blueberries, citrus fruits, grapes, peaches, pears, plums, raspberries, strawberries.

(b) *Vegetables:* beans—green, celery, corn—sweet (kernels), cucumbers, melons, tomatoes.

(3) BASIC COPPER CARBONATE. Tolerance is 3 p. p. m. of combined copper in or on pears from post-harvest application.

Register, March, 1957, No. 15.

(4) **BENZENE HEXACHLORIDE.** Tolerance is 5 p. p. m. if commercial benzene hexachloride, which is a mixture of several isomers, is used. If the gamma isomer, known as lindane, is used exclusively of other isomers, the tolerance is 10 p. p. m. Both tolerances apply to the following:

(a) *Fruits:* apples, apricots, avocados, cherries, citrus fruits, grapes, guavas, mangoes, nectarines, peaches, pears, pineapples, plums (fresh prunes), quinces, strawberries.

(b) *Vegetables:* asparagus, beans, black-eyed peas, broccoli, brussels sprouts, cabbage, cauliflower, celery, collards, corn, cucumbers, eggplant, kale, kohlrabi, lettuce, melons, mustard greens, okra, onions, peas, peppers, pumpkins, spinach, squash, Swiss chard, tomatoes.

(5) **CALCIUM ARSENATE.** Tolerance is 3.5 p. p. m. of combined  $As_2O_3$  for the following:

(a) *Fruits:* blackberries, blueberries, huckleberries, loganberries, raspberries, strawberries.

(b) *Vegetables:* asparagus, beans, black-eyed peas, broccoli, brussels sprouts, cabbage, carrots (including tops), cauliflower, celery, collards, corn, cucumbers, eggplant, kale, kohlrabi, melons, peppers, pumpkins, rutabagas (including tops), spinach, squash, tomatoes, turnips (including tops).

(6) **CALCIUM CYANIDE.** Tolerance is 25 p. p. m. for the following grains: barley, buckwheat, corn, oats, rice, rye, sorghum, wheat.

(7) **CAPTAN** (N-trichloromethyl mercapto-4-cyclohexene-1,2-dicarboximide). Tolerance is 20 p. p. m. for the following:

(a) *Fruits:* apples, apricots, cherries, citrus fruits, grapes, mangoes, nectarines, peaches, pears, pineapples, plums, prunes, quinces, strawberries.

(b) *Vegetables:* cucumbers, eggplant, melons, peppers, pumpkins, squash, tomatoes.

(8) **CHLORDANE** (1,2,4,5,6,7,8,8-octachloro-2,3,3a,4,7,7a-hexahydro-4,7-methanoindene). Tolerance is 0.3 p. p. m. for the following:

(a) *Fruits:* apples, apricots, blackberries, blueberries, cherries, citrus fruits, grapes, huckleberries, loganberries, nectarines, papayas, peaches, pears, pineapples, plums (fresh prunes), quinces, raspberries, strawberries.

(b) *Vegetables:* beans, beets (including tops), black-eyed peas, broccoli, brussels sprouts, cabbage, carrots (including tops), cauliflower, celery, collards, corn, cucumbers, eggplant, kale, kohlrabi, lettuce, melons, okra, onions, peanuts, peas, peppers, potatoes, radishes (including tops), rutabagas (including tops), squash, sweet potatoes, tomatoes, turnips (including tops).

(9) **CHLOROBENZILATE** (ethyl 4,4'-dichlorobenzilate). Tolerance is 5 p. p. m. for the following: apples, lemons, oranges, pears, cantaloups.

(10) **CHLORTETRACYCLINE.** Tolerance is 7 p. p. m. for uncooked poultry. This tolerance level shall not be exceeded in any part of the poultry.

(11) COPPER ARSENATE. Tolerance is 3.5 p. p. m. of combined  $As_2O_3$  for the following vegetables: brussels sprouts, cabbage, carrots (including tops), cauliflower, kohlrabi, tomatoes.

(12) DDT (a product consisting of a complex mixture of 1,1,1-trichloro-2,2-bis (parachlorophenyl) ethane and 1,1,1-trichloro-2-(ortho-chlorophenyl)-2-(parachlorophenyl) ethane). Tolerance is 7 p. p. m. for the following:

(a) *Fruits*: apples, apricots, avocados, blackberries, blueberries, cherries, citrus fruits, cranberries, currants, gooseberries, grapes, guavas, huckleberries, loganberries, mangoes, nectarines, papayas, peaches, pears, pineapples, plums (fresh prunes), quinces, raspberries, rhubarb, strawberries.

(b) *Vegetables*: artichokes, asparagus, beans, beets (including tops), black-eyed peas, broccoli, brussels sprouts, cabbage, carrots (including tops), cauliflower, celery, collards, corn, cucumbers, eggplant, endive (escarole), kale, kohlrabi, lettuce, melons, mushrooms, mustard greens, okra, onions, parsnips (including tops), peanuts, peas, peppers, pumpkins, radishes (including tops), rutabagas (including tops), spinach, squash, sweet potatoes (post-harvest use), Swiss chard, tomatoes, turnips (including tops).

(c) *Meats*: The fat of meat from cattle, hogs and sheep.

(13) 2,4-DICHLOROPHENOXY ACETIC ACID. Tolerance is 5 p. p. m. for the following: apples, citrus fruits, pears, quinces.

(14) DIURON (3-(3,4-dichlorophenyl)-1,1-dimethylurea). Tolerance is 1 p. p. m. for cottonseed, grapes, pineapples, potatoes and sugarcane.

(15) DICYCLOHEXYLAMINE SALT OF DINITRO-O-CYCLOHEXYLPHENOL. Tolerance is 1 p. p. m. for the following:

(a) *Fruits*: apples, apricots, blackberries, cherries, citrus fruits, grapes, loganberries, nectarines, peaches, pears, plums (fresh prunes), quinces, raspberries, strawberries.

(b) *Vegetables*: beans, black-eyed peas, celery.

(16) DIELDRIN (1,2,3,4,10,10-hexachloro-6,7-epoxy-1,4,4a,5,6,7,8,8a-octahydro-1,4,5,8-dimethanonaphthalene). The tolerances are:

(a) Zero for the following: beans, black-eyed peas, corn grain, melons, peas, popcorn, pumpkins, soybeans, squash—winter.

(b) 0.1 p. p. m. for the following:

1. *Fruits*: apricots, cranberries, grapes, mangoes, nectarines, peaches, plums, prunes, strawberries.

2. *Vegetables*: asparagus, carrots, eggplant, horseradish, onions, parsnips, peppers, pimentos, potatoes, radishes (including tops), salsify roots, sweet potatoes, tomatoes.

3. *Grains*: barley, oats, rice, rye, wheat.

(c) 0.25 p. p. m. for the following:

1. *Fruits*: apples, cherries, citrus fruits, pears, pineapples, quinces.

2. *Vegetables*: beets—garden (including tops), broccoli, brussels sprouts, cabbage, cauliflower, celery, collards, cucumbers, endive (escarole), kale, kohlrabi, lettuce, mustard greens, rutabagas, salsify tops, spinach, squash—summer, Swiss chard, turnips (including tops).

(17) DINITRO-O-CYCLOHEXYLPHENOL. Tolerance is 1 p. p. m. for citrus fruits.

(18) ENDRIN. Tolerance is zero for the following: beets—sugar (including tops), cabbage, cottonseed, cucumbers, eggplant, peppers, potatoes, squash—summer, tomatoes.

(19) EPN (o-ethyl-o-p-nitrophenyl benzene thiophosphonate). The tolerances are:

(a) 0.5 p. p. m. for the following: almonds, cottonseed, pecans, walnuts.

(b) 3 p. p. m. for the following:

1. Fruits: apples, apricots, blackberries, cherries, citrus fruits, grapes, loganberries, nectarines, olives, peaches, pears, pineapples, plums (fresh prunes), quinces, raspberries, strawberries.

2. Vegetables: beans, beets (including tops), beets—sugar (but not tops), black-eyed peas, corn, lettuce, rutabagas (including tops), spinach, tomatoes, turnips (including tops).

(20) ETHYLENE DIBROMIDE. (a) The tolerances for residues of inorganic bromides (calculated as Br) resulting from soil treatment with ethylene dibromide are:

1. 5 p. p. m. for lima beans and strawberries.

2. 10 p. p. m. for asparagus and cauliflower.

3. 25 p. p. m. for cottonseed.

4. 50 p. p. m. for sweet potatoes.

5. 75 p. p. m. for carrots (including tops) and parsnips.

(b) The tolerance for residues of inorganic bromides (calculated as Br) resulting from fumigation with ethylene dibromide is 50 p. p. m. for the following grains: barley, corn, oats, popcorn, rice, rye, sorghum (milo), wheat.

(c) The tolerance for residues of inorganic bromides is 10 p. p. m. for the following commodities that have been fumigated with ethylene dibromide in accordance with the Mediterranean Fruit Fly Control Program or the Quarantine Program of the U. S. Department of Agriculture: beans (string), bitter melon (*Mormodica charantia*), Cavendish bananas, citrus fruits, cucumbers, guavas, mangoes, papayas, peppers (bell), pineapples, Zucchini squash.

(21) FERBAM (FERRIC DIMETHYLDITHIOCARBAMATE), CALCULATED AS ZINC ETHYLENEBISDITHIOCARBAMATE. The tolerances are:

(a) 0.1 p. p. m. for almonds.

(b) 7 p. p. m. for the following:

1. Fruits: apples, apricots, blackberries, blueberries, cherries, cranberries, currants, dates, gooseberries, grapes, guavas, huckleberries, loganberries, mangoes, nectarines, papayas, peaches, pears, plums (fresh prunes), quinces, raspberries, strawberries.

2. Vegetables: asparagus, beans, beets (including tops), black-eyed peas, broccoli, brussels sprouts, cabbage, carrots (including tops), cauliflower, celery, collards, corn, cucumbers, eggplant, kale, kohlrabi, lettuce, melons, mustard greens, onions, peanuts, peas, peppers, pumpkins, radishes (including tops), rutabagas (including tops), spinach, squash, tomatoes, turnips (including tops).

(22) FLUORINE COMPOUNDS (cryolite, synthetic cryolite (sodium aluminum fluoride)). Tolerance is 7 p. p. m. of combined fluorine for the following:

(a) *Fruits*: apples, apricots, blackberries, blueberries, citrus fruits, cranberries, grapes, huckleberries, loganberries, nectarines, peaches, pears, plums (fresh prunes), quinces, raspberries, strawberries.

(b) *Vegetables*: beans, beets (including tops), black-eyed peas, broccoli, brussels sprouts, cabbage, carrots (including tops), cauliflower, collards, corn, cucumbers, eggplant, kale, kohlrabi, lettuce, melons, mustard greens, okra, peanuts, peas, peppers, pumpkins, radishes (including tops), rutabagas (including tops), squash, tomatoes, turnips (including tops).

(23) GLYODIN (2-heptadecyl glyoxalidine). Tolerance is 5 p. p. m. for the following fruits: apples, blackberries, cherries, loganberries, peaches, pears, quinces, raspberries.

(24) HEPTACHLOR (1,4,5,6,7,8,8-heptachloro-3a,4,7,7a-tetrahydro-4,7-methanoindene). Tolerance is 0.1 p. p. m. for the following vegetables: beets (including sugar beets), brussels sprouts, cabbage, carrots, cauliflower, corn, kohlrabi, onions, peanuts, potatoes, radishes, rutabagas (without tops), sugarcane, sweet potatoes, turnips (including tops).

(25) HYDROGEN CYANIDE. The tolerances for residues from post-harvest fumigation are:

(a) 25 p. p. m. for the following:

1. Vegetables: beans (dried), cocoa beans, peanuts, peas (dried), sesame.

2. Grains: barley, buckwheat, corn, oats, popcorn, rice, rye, sorghum, wheat.

3. Nuts: almonds, cashews, pecans, walnuts.

(b) 250 p. p. m. for the following spices: allspice, anise, basil, bay, black pepper, caraway, cassia, celery seed, chili, cinnamon, cloves, coriander, cumin, dill, ginger, mace, marjoram, nutmeg, oregano, paprika, poppy, red pepper, rosemary, sage, savory, thyme, turmeric, white pepper.

(26) LEAD ARSENATE. The tolerances are:

(a) 1 p. p. m. of combined lead for citrus fruits.

(b) 7 p. p. m. of combined lead for the following:

1. Fruits: apples, apricots, avocados, blackberries, blueberries, cherries, citrus fruits, cranberries, currants, gooseberries, grapes, huckleberries, loganberries, mangoes, nectarines, peaches, pears, plums (fresh prunes), quinces, raspberries, strawberries.

2. Vegetables: asparagus, celery, eggplant, peppers, tomatoes.

(27) LINDANE (the gamma isomer of benzene hexachloride). Tolerance is 10 p. p. m. for mushrooms. Other commodities are listed in subsection (4) under benzene hexachloride.

(28) MAGNESIUM ARSENATE. Tolerance is 3.5 p. p. m. of combined  $As_2O_3$  for beans and black-eyed peas.

(29) MALATHION (0,0-dimethyl dithiophosphate of diethyl mercaptosuccinate). Tolerance is 8 p. p. m. for the following:



(a) *Fruits*: apples, apricots, avocados, blueberries, cherries, citrus fruits, cranberries, dates, grapes, mangoes, passion fruit, peaches, pears, pineapples, plums, prunes, strawberries.

(b) *Vegetables*: beans, beets (including tops), broccoli, brussels sprouts, cabbage, cauliflower, celery, cucumbers, eggplant, kale, lettuce, melons, mustard greens, onions, peas, peppers, potatoes, rutabagas, spinach, squash, tomatoes, turnips (including tops).

(30) MANEB (manganese ethylenedithiocarbamate). The tolerances are:

(a) 0.1 p. p. m. for almonds and potatoes.

(b) 7 p. p. m. for the following:

1. Fruits: apples, apricots, cranberries, figs, grapes, peaches.

2. Vegetables: beans, carrots (including tops), celery, cucumbers, eggplant, melons, onions, peppers, spinach, squash, tomatoes.

(31) METHOXYCHLOR (2,2-bis-(p-methoxyphenyl)-1,1,1-trichloroethane). The tolerances are:

(a) 2 p. p. m. for the following grains: barley, corn, oats, rice, rye, sorghum, wheat.

(b) 3 p. p. m. for fat of meat from cattle, sheep and hogs.

(c) 14 p. p. m. for the following:

1. Fruits: apples, apricots, blackberries, blueberries, cherries, cranberries, currants, gooseberries, grapes, huckleberries, loganberries, nectarines, peaches, pears, pineapples, plums (fresh prunes), quinces, raspberries, strawberries.

2. Vegetables: asparagus, beans, beets (including tops), black-eyed peas, broccoli, brussels sprouts, cabbage, carrots (including tops), cauliflower, collards, corn, cucumbers, eggplant, kale, kohlrabi, lettuce, melons, mushrooms, peas, peanuts, peppers, pumpkins, radishes (including tops), rutabagas (including tops), spinach, squash, tomatoes, turnips (including tops).

(32) METHYL BROMIDE. The tolerances for residues of inorganic bromides (calculated as Br) resulting from fumigation with methyl bromide are:

(a) 5 p. p. m. for the following fruits: apples, pears, quinces.

(b) 20 p. p. m. for the following vegetables: eggplant, onions, tomatoes.

(c) 30 p. p. m. for the following vegetables: beets, rutabagas, turnips.

(d) 50 p. p. m. for the following vegetables and grains: barley, beans, black-eyed peas, cocoa beans, corn, grain sorghum (milo), oats, rice, rye, wheat.

(e) 75 p. p. m. for potatoes and sweet potatoes.

(f) 200 p. p. m. for cottonseed.

(33) NAPHTHALENE ACETIC ACID. Tolerance is 1 p. p. m. for the following fruits: apples, pears, quinces.

(34) NICOTINE-CONTAINING COMPOUNDS (nicotine sulfate and other salts of nicotine; nicotine as the alkaloid). Tolerance is 2 p. p. m. for the following:

(a) *Fruits*: apples, apricots, avocados, blackberries, cherries, citrus fruits, cranberries, currants, gooseberries, grapes, loganberries, nectarines, peaches, pears, plums (fresh prunes), quinces, raspberries, strawberries.

(b) *Vegetables*: artichokes, asparagus, beans, beets (including tops), black-eyed peas, broccoli, brussels sprouts, cabbage, cauliflower, celery, collards, corn, cucumbers, eggplant, kale, kohlrabi, lettuce, melons, mushrooms, mustard greens, okra, onions, parsley, parsnips (including tops), peas, peppers, pumpkins, radishes (including tops), rutabagas (including tops), spinach, squash, Swiss chard, tomatoes, turnips (including tops).

(35) OVEX (p-chlorophenyl-p-chlorobenzenesulfonate). The tolerances are:

(a) 3 p. p. m. for the following fruits: apples, peaches, pears, plums (prunes).

(b) 5 p. p. m. for citrus fruits.

(36) PARATHION (0,0-diethyl 0-p-nitrophenyl thiophosphate). (a) Tolerance is 1 p. p. m. for the following:

1. *Fruits*: apples, apricots, avocados, blackberries, blueberries, cherries, citrus fruits, cranberries, currants, dates, figs, gooseberries, grapes, guavas, huckleberries, loganberries, mangoes, nectarines, olives, peaches, pears, pineapples, plums (fresh prunes), quinces, raspberries, strawberries.

2. *Vegetables*: artichokes, beans, beets (including tops), black-eyed peas, broccoli, brussels sprouts, cabbage, carrots (including tops), cauliflower, celery, collards, corn, cucumbers, eggplant, endive (escarole), hops, kale, kohlrabi, lettuce, melons, mustard greens, oats, okra, onions, parsnips (including tops), peanuts, peas, peppers, pumpkins, radishes (including tops), rutabagas (including tops), spinach, squash, Swiss chard, tomatoes, turnips (including tops).

3. *Grains*: barley, wheat.

(b) The methyl homologue of parathion may replace all or part of the parathion permitted by this tolerance.

(37) MONURON (3-(p-chlorophenyl)-1,1-dimethylurea). The tolerances are:

(a) 1 p. p. m. for citrus fruits, cottonseed, grapes, onions (dry bulbs), pineapples, spinach, sugarcane.

(b) 7 p. p. m. for asparagus.

(38) PHENOTHIAZINE. Tolerance is 7 p. p. m. for the following fruits: apples, pears, quinces.

(39) PHYGON (dichlorone or 2,3-dichloro-1,4-naphthoquinone). Tolerance is 3 p. p. m. for celery and tomatoes.

(40) PIPERONYL BUTOXIDE ((butyl carbityl) (6-propyl piperonyl) ether). The tolerances for residues from post-harvest application are:

(a) 20 p. p. m. for the following grains: barley, buckwheat, corn, rice, rye, wheat.

(b) 8 p. p. m. for the following:

1. Fruits: apples, blackberries, blueberries, boysenberries, cherries, copra, crabapples, currants, dewberries, figs, gooseberries, grapes, guavas, huckleberries, loganberries, mangoes, oranges, peaches, pears, pineapples, plums (fresh prunes), raspberries.

2. Vegetables: beans, cocoa beans, cottonseed, flaxseed, muskmelons, peanuts, peas, tomatoes.

3. Grains: grain sorghum, oats.

4. Nuts: almonds, walnuts.

(41) PYRETHRINS (insecticidally active principles of *Chrysanthemum cinerariaefolium*). The tolerances for residues from post-harvest application are:

(a) 3 p. p. m. for the following grains: barley, buckwheat, corn, rice, rye, wheat.

(b) 1 p. p. m. for the following:

1. Fruits: apples, blackberries, blueberries, boysenberries, cherries, copra, crabapples, currants, dewberries, figs, gooseberries, grapes, guavas, huckleberries, loganberries, mangoes, oranges, peaches, pears, pineapples, plums (fresh prunes), raspberries.

2. Vegetables: beans, cocoa beans, cottonseed, flaxseed, muskmelons, peanuts, peas, tomatoes.

3. Grains: grain sorghum, oats.

4. Nuts: almonds, walnuts.

(42) SES (sodium 2,4-dichlorophenoxyethyl sulfate). The tolerances are:

(a) 2 p. p. m. for asparagus and strawberries.

(b) 6 p. p. m. for peanuts and potatoes.

(43) SODIUM ARSENATE. Tolerance is 3.5 p. p. m. of combined  $As_2O_3$  for grapes.

(44) SODIUM O-PHENYLPHENATE, calculated as o-phenylphenol. The tolerances are:

(a) 5 p. p. m. for apples and pears.

(b) 10 p. p. m. for citrus fruits.

(45) SULPHENONE (p-chlorophenyl phenyl sulfone). Tolerance is 8 p. p. m. for the following fruits: apples, peaches, pears.

(46) SYSTOX (0,0-diethyl-(2-ethylmercaptoethyl) thiophosphate, a mixture of thiono and thiol isomers) and derived anticholinesterase products as determined by in vitro cholinesterase inhibition of pooled human plasma, using technical Systox as a standard (this standard effects 50% inhibition of pooled human plasma cholinesterase at a concentration of  $0.3 \pm 0.025$  part per million in water as a medium). The tolerances are:

(a) 0.3 p. p. m. for beans.

(b) 0.75 p. p. m. for the following:

1. Fruits: apples, grapefruit, oranges, lemons, pears, strawberries.

2. Vegetables: broccoli, brussels sprouts, cabbage, cauliflower, lettuce, muskmelons, potatoes.

3. Nuts: almonds, pecans, walnuts.

(c) 1.25 p. p. m. for grapes.

(d) 5 p. p. m. for almond hulls.

(47) TARTAR EMETIC. Tolerance is 3.5 p. p. m. of combined anti-mony trioxide for the following: citrus fruits, grapes, onions.

(48) TDE (1,1-dichloro-2,2 bis (parachlorophenyl) ethane). Tolerance is 7 p. p. m. for the following:

(a) *Fruits*: apples, apricots, blackberries, blueberries, cherries, citrus fruits, grapes, huckleberries, loganberries, nectarines, peaches, pears, plums (fresh prunes), quinces, raspberries, strawberries.

(b) *Vegetables*: beans, black-eyed peas, broccoli, brussels sprouts, cabbage, carrots (including tops), cauliflower, corn, cucumbers, eggplant, kohlrabi, lettuce, melons, peas, peppers, pumpkins, radishes (including tops), rutabagas (including tops), spinach, squash, Swiss chard, tomatoes, turnips (including tops).

(49) THIRAM (tetramethyl thiuram disulfide). Tolerance is 3 p. p. m. for apples.

(50) TOXAPHENE (chlorinated camphene). Tolerance is 7 p. p. m. for the following:

(a) *Fruits*: apples, apricots, blackberries, citrus fruits, cranberries, loganberries, nectarines, peaches, pears, quinces, raspberries, strawberries.

(b) *Vegetables*: beans, black-eyed peas, broccoli, brussels sprouts, cabbage, carrots (including tops), cauliflower, celery, corn, cucumbers, eggplant, horseradish, kohlrabi, lettuce, okra, onions, parsnips, peanuts, peas, peppers, pimentos, radishes (including tops), rutabagas, tomatoes.

(c) Nuts: hazelnuts, hickory nuts, pecans, walnuts.

(51) ZINEB (zinc ethylenedisithiocarbamate). The tolerances are:

(a) 1 p. p. m. for wheat.

(b) 7 p. p. m. for the following:

1. *Fruits*: apples, apricots, blackberries, cherries, citrus fruits, cranberries, currants, gooseberries, grapes, guavas, loganberries, nectarines, peaches, pears, plums (fresh prunes), quinces, raspberries, strawberries.

2. *Vegetables*: beans, beets (including tops), black-eyed peas, broccoli, brussels sprouts, cabbage, carrots (including tops), cauliflower, celery, collards, corn, cucumbers, eggplant, endive (escarole), kale, kohlrabi, lettuce, melons, mushrooms, mustard greens, onions, parsley, peanuts, peas, peppers, pumpkins, radishes (including tops), rutabagas (including tops), salsify, spinach, squash, Swiss chard, tomatoes, turnips (including tops).

(c) 60 p. p. m. for hops.

(52) ZIRAM (zinc dimethyldithiocarbamate), calculated as zinc ethylenedisithiocarbamate. The tolerances are:

(a) 0.1 p. p. m. for almonds and pecans.

(b) 7 p. p. m. for the following:

1. Fruits: apples, apricots, blackberries, blueberries, cherries, cranberries, gooseberries, grapes, huckleberries, loganberries, nectarines, peaches, pears, quinces, raspberries, strawberries.

2. Vegetables: beans, beets (including tops), black-eyed peas, broccoli, brussels sprouts, cabbage, carrots (including tops), cauliflower, celery, collards, cucumbers, eggplant, kale, kohlrabi, lettuce, melons, onions, peanuts, peas, peppers, pumpkins, radishes (including tops), rutabagas (including tops), spinach, squash, tomatoes, turnips (including tops).

(53) ALLETHRIN (allyl homolog of cinerin I). Tolerance is 4 p. p. m. for residues from post-harvest use for the following:

(a) Fruits: apples, blackberries, blueberries, boysenberries, cherries, crabapples, currants, dewberries, figs, gooseberries, grapes, guavas, huckleberries, loganberries, mangoes, oranges, peaches, pears, pineapples, plums (fresh prunes), raspberries.

(b) Vegetables: muskmelons, tomatoes.

(54) 1,1-DICHLORO-2,2-BIS (P-ETHYLPHENYL) ETHANE. Tolerance is 15 p. p. m. for the following:

(a) Fruits: cherries.

(b) Vegetables: broccoli, brussels sprouts, cabbage, cauliflower, kohlrabi, lettuce, spinach.

(55) DIPHENYL (BIPHENYL). Tolerance is 110 p. p. m. for grapefruit, lemons, oranges.

(56) OXYTETRACYCLINE. Tolerance is 7 p. p. m. for uncooked poultry. This tolerance level shall not be exceeded in any part of the poultry.

(57) SODIUM 2,2-DICHLOROPROPIONATE. The tolerances for residues of sodium 2,2-dichloropropionate as 2,2-dichloropropionic acid are:

(a) 5 p. p. m. for sugar beets and sugar beet tops.

(b) 35 p. p. m. for cottonseed.

(58) ETHYLENE OXIDE. Tolerance is 50 p. p. m. for whole spices and copra.

**History:** Cr. Register, March, 1957, No. 15, eff. 4-1-57; (12) (b) am.; (12) (c) cr.; (14) am.; (20) (b) cr.; (20) (c) cr.; (25) am.; (30) (b) am.; (37) am.; (40) (b) cr.; (41) (o) cr.; (50) am.; (53), (54), (55), (56), (57) and (58) cr.; Register, June, 1957, No. 18, eff. 7-1-57.