



## Fruit Crop

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## Japanese Beetles

Japanese beetles are found in the northern United States and southern Canada. They feed on many different types of fruit trees, including apples, cherries, peaches, plums, nectarines, apricots, and pears. They also damage non-fruiting trees like maples, oaks, and birches. Japanese beetles can cause significant damage to fruit crops, especially if they are present in large numbers.

Japanese beetles are controlled by spraying with carbaryl (Sevin) or malathion (Malathion). These chemicals are effective against Japanese beetles but may also harm beneficial insects like bees and butterflies.

## Small Fruit Insect Control

Recommended dose: refer to pounds of CARBARYL 50 W per acre. Use sufficient spray gallonage to obtain full coverage. Keep spray moist. Well-saturated. Apply when insects or their damage appears. Repeat at 7 to 10 day intervals or as necessary. CARBARYL 50 W injures Boston ivy.

## Affalfa (alfalfa, lucerne, etc.)

Use 1 to 2 pounds for alfalfa borer, 1 pound for Mexican bean beetle. Use 2 pounds for alfalfa leaf folder, 1 pound for alfalfa beetles, 1 pound for fall armyworm, Japanese beetle, leaf miner, tobacco hornworm, alfalfa hopper, thrip, and velvetbean caterpillar.

Use 2 to 4 pounds for Colorado potato beetle, flea bugs and webworms.

Use 2 to 4 pounds for Western United States, and 3 pounds Eastern United States for control of fall armyworm. If treatment damage is extensive, cut the alfalfa and take it to market at the stages:

alfalfa and leaves - 2 pounds for cutworm control.

Clover - 1 to 2 pounds for fall armyworm. Apply 4 weeks after seedling emergence. Reapply 4 weeks later.

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## Adult Mosquitoes

On pasture, rangeland, and agricultural lands such as yards, parks, recreation areas, logging camps, etc., fly past and adjacent forested lands or wastelands.

Use 1 to 2 pounds per acre in mist blowers. 1 pound per acre in suitable low pressure ground equipment. Apply in sufficient spray gallonage to effectively cover area to be treated. For optimum control apply in early morning or evening when air is calm and adult mosquitoes are active.

Use 2 pounds per 100 gallons in hydraulic sprayers or 2 tablespoonsfuls per gallon in hand sprayers for treating backyards or other limited areas. Thoroughly cover lower shade tree foliage, shrubbery, flower beds, grass and shaded areas around buildings where adult mosquitoes congregate. Repeat at 7 to 10 day intervals or as necessary. CARBARYL 50 W injures Boston ivy.

Caution: May kill shrimp and crabs. Do not use in areas where shrimp and crabs are important resources.

## SMALL FRUIT INSECT CONTROL

Recommended dose: refer to pounds of CARBARYL 50 W per acre. Use sufficient spray gallonage to obtain full coverage. Keep spray moist. Well-saturated. Apply when insects or their damage appears. Repeat at 7 to 10 day intervals or as necessary.

## Grape

Use 2 to 4 pounds for European fruit lecanium, grape leaf folder, grape leafhopper and grape leaf skeletonizer. Apply just before first brood leaf folder larvae emerge from rolls and as needed for leafhoppers. Use 4 pounds for grape berry moth, Japanese beetle, June beetles and red banded leaf roller. A dilute spray of 200 gallons per acre is suggested.

## Strawberries

Use 2 to 4 pounds for meadow spittlebug, strawberry leaf roller and strawberry weevil. A dilute spray of 100 to 200 gallons per acre is suggested.

Do not apply within 1 day of harvest.

## Blueberry

Use up to 4 pounds for blueberry maggot, cherry and cranberry maggot, European fruit fly, and Japanese beetle. Apply 4 weeks before harvest. Repeat at 7 to 10 day intervals. A dilute spray of 120 to 150 gallons per acre is suggested.

## Cranberry

Use 1 to 2 pounds for fall armyworm, fruitworms, Japanese beetle and leafhoppers. Apply in sufficient spray gallonage to 7 to 10 day intervals. Use 1 to 2 pounds of 300 gallons per acre.

## Tomato, Eggplant and Pepper

Use 1 to 2 pounds for Colorado potato beetle, flea beetles and leafhoppers. Use 2 to 4 pounds for European corn borer, fall armyworm, lace bugs, tomato fruitworm, tomato hornworm, tarnished plant bugs and stink bugs. On potato, tomato and eggplant, use 4 pounds for cutworm control.

## Olive

Use 2 to 4 pounds for corn earworm and flea hop. Repeat at 5 to 7 day intervals or as necessary.

## Cabbage, Broccoli, Brussels Sprouts, Cauliflower and Kohlrabi

Use 1 to 2 pounds for flea beetles and harlequin bug.

Use 2 to 4 pounds for armyworms, imported cabbage worm, diamond-back moth larvae, red cabbage worm and corn earworm. Where cabbage worm is the principal problem, an alternative pesticide that is specifically recommended for control of small cabbage worm affected by pest, to begin to form is CARBARYL 50 W in 5 to 7 day schedule.

Do not apply within 2 days of harvest of these crops.

## Carrot, Chinese Cabbage, Collards, Dandelion, Endive, Escarole, Garden Beets, Horse Radish, Kales, Lettuce, Mustard, Green, Parsley, Purslane, Radishes, Salsify, Spinach, Swiss Chard and Turnip

Use 1 to 2 pounds for flea beetles, harlequin bug and leafhoppers. To control six spotted leafhopper after young plants appear, to 3 pounds in 5 to 7 day schedule.

Use 1 to 2 pounds for armyworm, cabbage worm and the fall armyworm, tarnished plant bug and lace bugs. For optimum control, do not spray after lettuce heads begin to form. Use 1 to 2 pounds of 300 gallons per acre.

## Other Cabbage Insects

Other cabbage insects - the following are an alternative pesticide that is specifically recommended. For control of small cabbage insects after edible portions become firm, use 1 to 2 pounds of 300 gallons per acre.

The use of possible injury on foliage is to metolachlor when foliage is wet or when rain or excessive humidity is present during the harvest days.

Do not spray within 14 days of harvest of Chinese cabbage, radish, dandelion, endive, escarole, radish, kales, kale and other mustard green, parsley, radish, turnips, radish, turnip, swiss chard and turnips, etc.

Native vegetation - 1 to 2 pounds of 300 gallons per acre.

Use 1 to 2 pounds for armyworms, cutworms, wireworms, tick bugs and tarnished plant bugs.

In Corn Fields

For tobacco flea beetle use 1 pound per 1000 square feet. Mix 10 ounces of CARBARYL 50 W to 100 gallons of water and apply 1/2 gallon per 1000 square feet.

For green June beetle grubs use 1 pound per 1000 square feet. Mix 10 ounces of CARBARYL 50 W to 100 gallons of water and apply 1/2 to 100 gallons per 1000 square feet. May 5 to apply.

Avoid excessive application; plant injury may result.

In Fields

For budworms, flea beetles, Japanese beetle, June beetles, 1 to 2 pounds in 50 to 100 gallons of water per acre. For cutworms, 1 to 2 pounds in 50 to 100 gallons of water per acre. Lower rate on young plants up to knee high. Higher rate of treatments when worms are small. Avoid excessive application in plants.

Treated fields may be entered immediately after treatment. If necessary, treat immediately after pruning or cutting.

## Cucumber, Melons, Pumpkin and Squash

Use 1 to 2 pounds for pickleworm and melonworm. 2 pounds for cucumber beetles, flea beetles, leafhoppers and squash bugs. Avoid excessive applications. To avoid possible injury on tender foliage do not apply when foliage is wet or when rain or excessive humidity is expected during the next 2 days. CARBARYL 50 W injures watermelons in Florida.

## Garden Peas

Use 2 pounds for leafhoppers. Colorado potato beetle. For Colorado potato beetle control apply to weeds in fields of garden peas to help prevent insect contamination in processed peas. Use 2 to 3 pounds for armyworms and grasshoppers.

Use 5 pounds for alfalfa looper in the state of Washington only. Repeat as necessary.

## Potato, Tomato, Eggplant and Pepper

Use 1 to 2 pounds for Colorado potato beetle, flea beetles and leafhoppers. Use 2 to 4 pounds for European corn borer, fall armyworm, lace bugs, tomato fruitworm, tomato hornworm, tarnished plant bugs and stink bugs. On potato, tomato and eggplant, use 4 pounds for cutworm control.

## Oven

Use 2 to 4 pounds for corn earworm and flea hop. Repeat at 5 to 7 day intervals or as necessary.

## Cabbage, Broccoli, Brussels Sprouts, Cauliflower and Kohlrabi

Use 1 to 2 pounds for flea beetles and harlequin bug.

Use 2 to 4 pounds for armyworms, imported cabbage worm, diamond-back moth larvae, red cabbage worm and corn earworm. Where cabbage worm is the principal problem, an alternative pesticide that is specifically recommended for control of small cabbage worm affected by pest, to begin to form is CARBARYL 50 W in 5 to 7 day schedule.

Do not apply within 2 days of harvest of these crops.

## DIMINANTAL INSECT CONTROL

Use 2 pounds per 100 gallons of water. 2 tablespoonsfuls per acre when damage appears. Repeat weekly, if needed. CARBARYL 50 W.

Use in herbaceous ornamental plant, ornamental grass, etc. for insect control.

Flower beetle - 1 to 2 pounds per 100 gallons of water.

Leaf beetle - 1 to 2 pounds per 100 gallons of water.

Bird cherry - 1 to 2 pounds per 100 gallons of water.

Boxelder bug - 1 to 2 pounds per 100 gallons of water.

Boxwood leaf miner - 1 to 2 pounds per 100 gallons of water.

Corn root aphid - 1 to 2 pounds per 100 gallons of water.

Eastern tent caterpillar - 1 to 2 pounds per 100 gallons of water.

Japanese beetle - 1 to 2 pounds per 100 gallons of water.

Japanese beetle grub - 1 to 2 pounds per 100 gallons of water.

Japanese beetle larva - 1 to 2 pounds per 100 gallons of water.

Japanese beetle pupa - 1 to 2 pounds per 100 gallons of water.

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