



Vegetables

Department of Entomology

VEGETABLE INSECT IDENTIFICATION

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APHIDS

Many genera and species, Family Aphididae



Winged and wingless aphids



J. Obermeyer

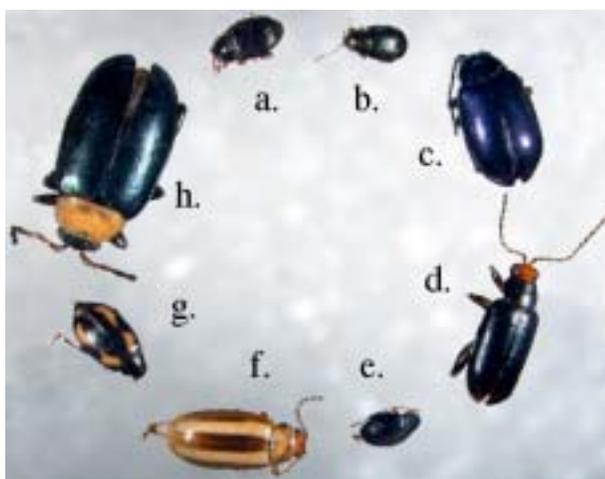
Plants attacked: Most vegetables.

Type of damage: Aphids suck plant juices, may inject toxins into the plant, secrete a sticky substance called "honeydew," or transmit certain plant viruses.

Comments: Usually found in colonies on the underside of leaves. May be winged but are usually wingless. Aphids are capable of rapidly increasing in numbers. Lady beetles and lacewings are effective predators of aphids.

FLEA BEETLES

Many genera and species, Family Chrysomelidae



J. Obermeyer

a. Potato flea beetle: *Epitrix cucumeris*; b. Corn flea beetle: *Chaetocnema pulicaria*; c. Grape flea beetle: *Altica chalybea*; d. Red-headed flea beetle: *Systema frontalis*; e. Sweetpotato flea beetle: *Chaetocnema confinis*; f. Palestriped flea beetle: *Systema blanda*; g. Striped flea beetle: *Phyllotreta striolata*

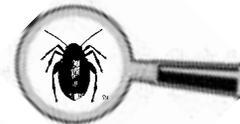
Plants attacked: Many vegetables, especially crucifers (cabbage, broccoli, etc.) and solanaceous crops (tomato, potato, eggplant, etc.).

Type of damage: Flea beetles eat small holes in leaves and can be particularly serious on small plants. The corn flea beetle can transmit a bacterium that causes Stewart's wilt on sweet corn.

Comments: Flea beetles come in various sizes and colors, but they all have enlarged hind legs that allow them to jump like a flea when disturbed. Stewart's wilt on corn may be more serious following a mild winter.



Spinach flea beetle 3/16"



Corn flea beetle 1/16"



Palestriped flea beetle 1/8"

WHITE GRUBS
Many genera and species, Family Scarabaeidae



J. Obermeyer

White grubs

Plants attacked: Most vegetables.

Type of damage: Grubs feed on the roots or other underground parts of most vegetables. Damage typically consists of surface scars and round gouges.

Comments: Grubs are mostly a problem in fields following sod. Weedy gardens are also attractive to ovipositing beetles.

Mature larva



Newly-hatched



LEAFHOPPERS
Many genera and species, Family Cicadellidae



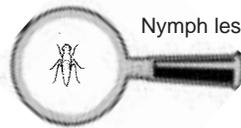
Michigan State University

Potato leafhopper adult (left) and nymph (right)

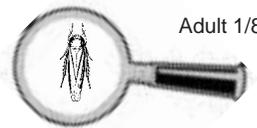
Plants attacked: Many vegetables, including bean, potato, eggplant, celery, beet, tomato.

Type of damage: Leafhoppers suck plant juices from the underside of leaves. Potato leafhoppers may cause a condition called "tipburn" or "hopperburn" on bean, potato, eggplant, and rhubarb. Beet leafhoppers transmit a disease called "curly top" to beet.

Comments: Leafhoppers can increase to extremely large numbers in a short time, but generally are very susceptible to insecticides.



Nymph less than 1/8"



Adult 1/8"

JAPANESE BEETLE
Popilia japonica, Family Scarabaeidae



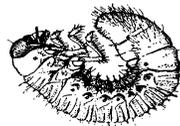
J. Obermeyer

Japanese beetle adult

Plants attacked: Many vegetables, fruits, field crops, ornamentals, turfgrass.

Type of damage: Larvae feed on roots of turfgrass and other plants. Adults feed on leaves, flowers, and fruit of many types of plants.

Comments: Adults are not effectively controlled with scented traps.



Mature larva



Adult

CUTWORMS
Many genera and species, Family Noctuidae



J. Obermeyer

Black cutworm - various sizes

Plants attacked: Nearly all vegetables.

Type of damage: The most common damage is young plants cut off at the soil surface. May also climb the plant and feed on foliage and fruit

Comments: Damage can be reduced by keeping gardens free of weeds before and after vegetables are planted.



Curled Larva



Mature larva

TARNISHED PLANT BUG
***Lygus lineolaris*, Family Miridae**



J. Obermeyer

Tarnished plant bug, adult and nymph



J. Obermeyer



Adult



Nymph

Plants attacked: Beet, chard, celery, bean, potato, cabbage, cauliflower, turnip, salsify, cucumber.

Type of damage: Tarnished plant bugs suck plant juices and may inject toxic saliva into the plant. Leaves may become deformed, stems and petioles may be scarred and discolored, or the buds and developing fruit may be dwarfed and pitted.

Comments: Tarnished plant bugs become active very early in the season and are capable of migrating to find preferred host plants.

TWOSPOTTED SPIDER MITE
***Tetranychus urticae*, Family Tetranychidae**



J. Obermeyer

Twospotted spider mites and eggs

Plants attacked: Bean, corn, tomato, eggplant, etc.

Type of damage: Mites suck plant juices from the underside of leaves. The leaves become bronze or yellow and the foliage takes on a general wilted appearance.

Comments: Mites are not insects. The symptoms of mite damage may be caused by other factors, so be sure to look for mites with a hand lens. Mites are more of a problem in hot, dry weather. Heavy rains may help to control mites.



Mites and eggs on underside of leaf (minute in size - 1/64")

STRIPED BLISTER BEETLE
Epicauta vittata, Family Meloidae



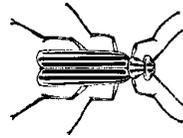
J. Obermeyer

Adult striped blister beetle

Plants attacked: Many vegetables.

Type of damage: Adults feed ravenously on foliage.

Comments: This general feeder readily moves from plant to plant. The beetles can be picked off foliage. However, they contain an oil that can blister the skin if they are accidentally crushed. The larvae of blister beetles are beneficials, feeding on grasshopper eggs in the soil.

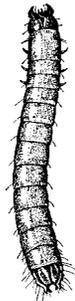


WIREWORMS
Many genera and species, Family Elateridae



J. Obermeyer

Wireworms



Mature larva

Plants attacked: Many vegetables.

Type of damage: Wireworms feed on seeds and seedlings of corn, bean, and pea causing wilting and often death of the plant. Wireworms feed on the marketable portions of potato, sweet potato, radish, carrot, rutabaga, and turnip. The roots of cabbage, cucumber, tomato, onion, watermelon, and other crops are also attacked, reducing vigor or killing the plants.

Comments: Some species are more serious in gardens that recently were sod. Wireworms can be detected with baits (grain or potato) buried underground before planting.

IMPORTED CABBAGEWORM
Pieris rapae, Family Pieridae



W. Cranshaw

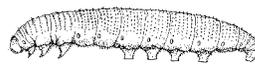


W. Cranshaw

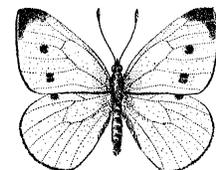
Plants attacked: Cabbage, cauliflower, broccoli, Brussels sprouts, radish, collard, mustard, kale.

Type of damage: Caterpillars eat large irregular holes in leaves and into heads, causing stunted growth, failure of heads to form, or making produce unusable.

Comments: The adult is a common white butterfly with black spots and wing tips.



Mature larva



Adult

Imported cabbage worm larva and adult

CABBAGE LOOPER
Trichoplusia ni, Family Noctuidae



S. Mahr

Cabbage looper larva

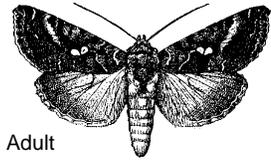
Plants attacked: Cabbage, cauliflower, broccoli, Brussels sprouts, radish, collard, mustard, kale, lettuce, celery, spinach, beet, pea, potatoe, tomato.

Type of damage: Same as imported cabbage worm.

Comments: Usually more serious in the fall. Should be controlled when they are small because large loopers are difficult to control. Crawls in a looping fashion - "inchworm."



Mature larva



Adult

DIAMONDBACK MOTH
Plutella xylostella



W. Cranshaw

Diamondback moth larva and adult

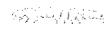


T. Quick

Plants attacked: Cabbage, cauliflower, broccoli, Brussels sprouts, radish, collard, mustard, kale.

Type of damage: Larvae eat many small holes on underside of leaves, giving plant a shot-hole appearance. Some feeding doesn't go entirely through the leaf.

Comments: *B.t.* insecticide will control all the cabbage caterpillars.



Mature larva



Adult

ASPARAGUS BEETLE
Crioceris asparagi, Family Chrysomelidae



Michigan State University

Asparagus beetle larva and adult



Michigan State University

Plants attacked: Asparagus.

Type of damage: Adults feed voraciously on tips of shoots as soon as they push through the ground in spring, causing scars and browning of tips. Adults and larvae feed on the surface of stems and on leaves of larger plants. Larvae excrete black fluid that stains plants.

Comments: Asparagus beetles are less severe in wet years. Controlling volunteer plants and regular cutting help reduce damage.



Mature larva



Adult

COLORADO POTATO BEETLE
Leptinotarsa decemlineata, Family Chrysomelidae



W. Cranshaw



W. Cranshaw

Colorado potato beetle larva and adult

Mature
larva

Adult



Plants attacked: Potato, tomato, eggplant, pepper.

Type of damage: Adults and larvae feed on leaves and terminals, causing reduced growth or death of the plant.

Comments: Damage can be reduced by fall tillage and elimination of culls and volunteer potato plants. Applying 4 to 6 inches of straw mulch just after hilling will reduce potato beetle damage. A type of *B.t.* insecticide is available that will control small potato beetle larvae.

HORNWORMS
Manduca spp., Family Sphingidae



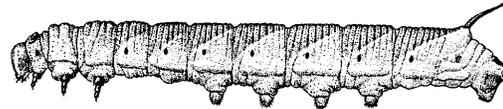
R. Foster

Tobacco hornworm on tomato plant

Plants attacked: Tomato, potato, pepper, eggplant.

Type of damage: The tomato and tobacco hornworms consume large amounts of green foliage and sometimes fruit.

Comments: Easily detected by presence of droppings resembling those produced by rabbits. Can be controlled in home gardens by hand picking. Many hornworms are killed by parasites that pupate on the hornworm's body.



Larvae get up to 4 inches in length

CORN EARWORM or TOMATO FRUITWORM
Helicoverpa zea, Family Noctuidae



R. Foster

Corn earworm

Plants attacked: Many, including corn, tomato, bean, pepper, okra, eggplant.

Type of damage: Corn earworm feed on the marketable portion of each vegetable crop it attacks, often causing them to be unusable.

Comments: Home gardeners may wish to cut the damaged tips off sweet corn ears or plant extra to compensate for losses.



Mature larva

STRIPED CUCUMBER BEETLE
Acalymma vittatum, Family Chrysomelidae



Striped cucumber beetle



Mature larva



Adult

J. Obermeyer

Plants attacked: Cucurbits (cucumber, cantaloupe, squash, gourd, pumpkin, watermelon).

Type of damage: Larvae feed on roots and underground stems. Adults may destroy newly emerged plants. On older plants, beetles feed on leaves, shoots, and stems. The beetles transmit a bacterium that causes bacterial wilt to cucumber and cantaloupe.

Comments: Only a short period of feeding is necessary to transmit the bacterium, so plants must be protected from beetle feeding. Protecting plants with row covers before bloom will prevent beetle feeding and disease transmission, but be sure to remove them when flowers appear.

SPOTTED CUCUMBER BEETLE
Diabrotica undecimpunctata howardi, Family Chrysomelidae



Spotted cucumber beetle



Mature larva



Adult

J. Obermeyer

Plants attacked: Cucurbits, bean, pea, potato, beet, asparagus, eggplant, tomato, corn, cabbage.

Type of damage: Larvae feed on roots of corn, beans, alfalfa, and many grasses. Adults feed on foliage and also transmit bacterial wilt of cucurbits to cucumber and cantaloupe.

Comments: Do not overwinter in Indiana. Usually arrive from southern states in June. Not as serious as striped cucumber beetles.

SQUASH BUG
Anasa tristis, Family Coreidae



J. Obermeyer



J. Obermeyer



Squash bug nymph and adult

G. Brust

Plants attacked: All cucurbits, but especially squash and pumpkin.

Type of attack: Nymphs and adults suck plant juices causing leaves to wilt and die. Both also will feed on developing fruit. May also transmit a disease organism that causes yellow vine.

Comments: Usually found in colonies. Destroying crop refuse may reduce the number of squash bugs that overwinter and lessen problems the following year.



Egg cluster on underside of leaf



Nymph



Adult

SQUASH VINE BORER
Melittia cucurbitae, Family Sesiidae



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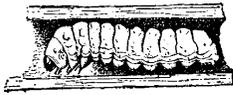
C. Welty

Squash vine borer nymph and adult

Plants attacked: Squash, pumpkin, gourd, cucumber.

Type of damage: Larvae bore into the vine, causing a sudden wilting of a vine or an entire plant.

Comments: Plants need to be protected with insecticides or screens when vines begin to run. Once inside the vine, the borers are impervious to insecticides.



Mature larva



Adult

BEAN LEAF BEETLE
Cerotoma trifurcata, Family Chrysomelidae



J. Obermeyer



Plants attacked: Bean, pea, soybean.

Type of damage: Larvae feed on roots, nodules, and underground portions of the stem. Adults feed on stems of seedlings and chew round holes in leaves and pods.

Comments: Plants can usually tolerate a considerable amount of leaf feeding, so use insecticides to protect very young plants and pods.



Mature larva



Spotted adult



Spotless form



J. Obermeyer

Color and pattern variation in bean leaf beetle adults

MEXICAN BEAN BEETLE
Epilachna varivestis, Family Coccinellidae



L. Bledsoe

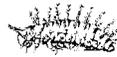
L. Bledsoe

Mexican bean beetle larvae and adult

Plants attacked: Bean, cowpea, soybean.

Type of damage: Larvae and adults feed on the undersurface of the leaves, giving them a lacy appearance. May also attack pods when abundant.

Comments: Heavy rains help by knocking adults and larvae from the plants.



Mature larva

Adult

Slugs
Several Species



B. Christine

Slug on corn

Plants attacked: Many vegetables.

Type of damage: Slugs skeletonize or shred leaves or may defoliate the entire plant.

Comments: Slugs are not insects. Slugs are more of a problem in cool, wet weather. Several days of warm, sunny weather usually will reduce the problem.



Mature slug 1.5 inches

EUROPEAN CORN BORER
Ostrinia nubilalis, Family Pyralidae



B. Christine



J. Obermeyer

European corn borer egg mass and larva tunneling

Plants attacked: Corn, pepper, bean, tomato.

Type of damage: Larvae feed on foliage and ears of corn, bore inside pepper and tomato fruit, and feed on or bore into bean pods.

Comments: Damage to corn may be serious enough to require insecticide treatments, especially late in the summer. Damage to pepper, tomato, and bean can usually be tolerated by home gardeners.



Egg mass ("fish scales")

Mature larva

COMMON LACEWING
Chrysopa spp., Family Chrysopidae



J. Obermeyer



B. Christine

NOT A PEST! Both the adult and larval stages of the green lacewing are voracious predators of aphids, scale insects, thrips, and insect eggs. The larvae are commonly known as aphid lions.



Mature larva



Adult

Common lacewing larva and adult

LADY BEETLES
Many genera and species, Family Coccinellidae



B. Christine



J. Obermeyer

NOT A PEST! Both the larval and adult stages of the lady beetle are voracious predators of aphids, scale insects, and other soft-bodied insects, and their eggs. Using pesticides that kill lady beetles and other predators or parasites can cause an outbreak of a pest previously controlled by the beneficial species. Even Asian lady beetles, which invade homes in autumn, are beneficial insects when they are outside.



Mature larva



Adult

Lady beetle larva and adult

FOR MORE INFORMATION SEE:

<http://www.entm.purdue.edu/entomology/ext/targets/e-series/e-list.htm>

- E-17-W European Corn Borer
- E-21-W Managing Insects in the Home Vegetable Garden
- E-30-W Cucurbit Insect Management
- E-31-W Corn Earworm
- E-74-W Flea Beetles
- E-75-W Japanese Beetle
- E-88 Common Vegetable Insects
- E-92 Common Natural Enemies
- E-95 Managing Striped Cucumber Beetle Populations on Cantaloupe and Watermelon
- E-96 Managing Insect Pests of Potato
- E-97 Management of Insect Pests on Fresh Market Tomatoes

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