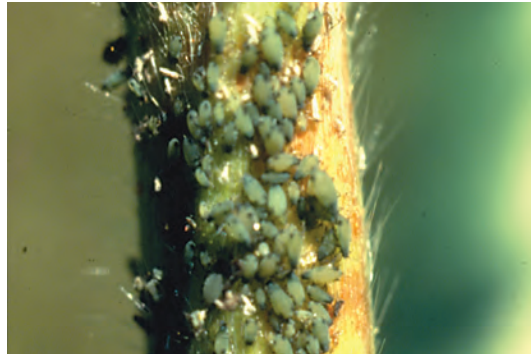




David N. Ferro, University of Massachusetts

I-1 Aphid, Cabbage, *Brevicoryne brassicae*, 1.6–2.6 mm



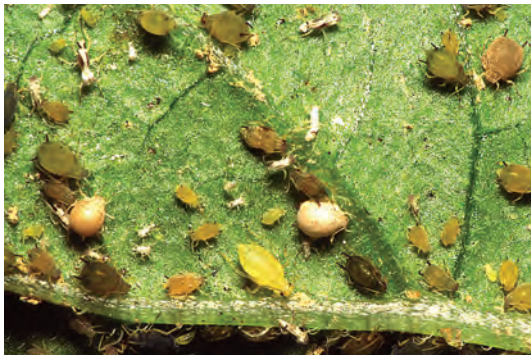
David N. Ferro, University of Massachusetts

I-2 Aphid, Corn Leaf, *Rhopalosiphum maidis*, on sweet corn tassel. 1.5–2.4 mm



David N. Ferro, University of Massachusetts

I-3 Aphid, Green Peach, *Myzus persicae*, winged adult female and nymphs on potato. 1.7–2 mm



Martin Spellman

I-4 Aphid, Melon, *Aphis gossypii*, nymphs. Note light brown cases of parasitized aphids, known as 'mummies.' 1–2 mm



Whitney Canshaw, Colorado State University

I-5 Aphid, Pea, *Acyrtosiphon pisum*, 2.3–2.7 mm



David N. Ferro, University of Massachusetts

I-6 Aphid, Potato, *Macrosiphum euphorbiae*. 2.1–3.4 mm



Mike Reding & Betsy Anderson, USDA Agricultural Research Service, Bugwood.org

I-7 Asiatic Garden Beetle, *Maladera castanea*, adult. 8–12 mm



Alan Eaton, University of New Hampshire

I-8 Asiatic Garden Beetle, *Maladera castanea*, damage on basil



Jude Boucher, University of Connecticut

I-9 Asiatic Garden Beetle, *Maladera castanea*, larva. Up to 19 mm





David N. Ferro, University of Massachusetts

I-10 Asparagus Beetle, Common, *Crioceris duodecimpunctata*, adult. 5–6 mm



David N. Ferro, University of Massachusetts

I-11 Asparagus Beetle, Common, *Crioceris duodecimpunctata*, larvae, feeding on asparagus. 1.5–8 mm



David N. Ferro, University of Massachusetts

I-12 Asparagus Beetle, Spotted, *Crioceris duodecimpunctata*, adult. 6–7.5 mm



David N. Ferro, University of Massachusetts

I-13 Asparagus Miner, *Ophiomyia simplex*, adults on asparagus stem. 3–4 mm



David N. Ferro, University of Massachusetts

I-14 Asparagus Miner, *Ophiomyia simplex*, larva and feeding damage on asparagus stem. 0.4–3.5 mm



David N. Ferro, University of Massachusetts

I-15 Asparagus Miner, *Ophiomyia simplex*, damage to roots and crown of asparagus.



Martin Spellman

I-16 Bean Leaf Beetle, *Cerotoma trifurcata*, adult. 3.5–5 mm



Thomas Kuhar, Virginia Tech

I-17 Beet Armyworm, *Spodoptera exigua*, larvae and damage on tomato. 1–22.3 mm



Martin Spellman

I-18 Beet Armyworm, *Spodoptera exigua*, caterpillars. 2.5–22.3 mm





Jude Boucher, University of Connecticut

I-19 Blister Beetle, Margined, *Epicauta funebris*, adult. 7-15mm



Jude Boucher, University of Connecticut

I-20 Cabbage Looper, *Trichoplusia ni*, caterpillar. 3-4 cm when full grown.



David N. Ferro, University of Massachusetts

I-21 Cabbage Maggot, *Delia radicum*, adult fly. 5-7 mm



David N. Ferro, University of Massachusetts

I-22 Cabbage Maggot, *Delia radicum*, eggs, laid in soil at base of stem. 1.1 mm



David N. Ferro, University of Massachusetts

I-23 Cabbage Maggot, *Delia radicum*, maggots and pupae (brown) with damaged roots and stem. 1.5-8 mm



Carol Miles, Washington State University

I-24 Carrot Rust Fly, *Psila rosae*, maggot and damage. 6-9 mm



David N. Ferro, University of Massachusetts

I-25 Carrot Weevil, *Listronotus oregonensis*, adult. 3.5-7 mm



Ruth Hazzard, University of Massachusetts

I-26 Colorado Potato Beetle, *Leptinotarsa decemlineata*, adult. 9-14 mm



Jude Boucher, University of Connecticut

I-27 Colorado Potato Beetle, *Leptinotarsa decemlineata*, larvae in the final instar. 1.5-15 mm





David N. Ferro, University of Massachusetts

I-28 Corn Earworm, *Helicoverpa zea*, adult moth. 32-45 mm



Ruth Hazzard, University of Massachusetts

I-29 Corn Earworm, *Helicoverpa zea*, caterpillar and ear damage. 1.5-24.8 mm



Alan Eaton, University of New Hampshire

I-30 Corn Earworm & Fall Armyworm, head capsules of fall armyworm (left and right) and corn earworm (center) caterpillars.



Thomas Kuhar, Virginia Tech

I-31 Cabbageworm, Cross-striped, *Evergestis rimosalis*, caterpillar. Up to 15-17 mm



Jude Boucher, University of Connecticut

I-32 Cross-striped Cabbageworm, *Evergestis rimosalis*, damage on cabbage.



David N. Ferro, University of Massachusetts

I-33 Cucumber Beetle, Spotted, *Diabrotica undecimpunctata*, adult; also known as Southern Corn Rootworm. 6-7.5 mm



David N. Ferro, University of Massachusetts

I-34 Cucumber Beetle, Striped, *Acalymma vittatum*, adult. 7 mm



Jim Dill, University of Maine

I-35 Cutworm, Black, *Agrotis ipsilon*, caterpillar. 3.5-50 mm



Alan Eaton, University of New Hampshire

I-36 Cutworm, damage, caterpillar in the soil and damage to bean seedling.





R.J. Reynolds Tobacco Company,  
www.ipmimages.org

I-37 Cutworm, Variegated, *Peridroma saucia*, caterpillar.  
2.0–46 mm



Jude Boucher, University of Connecticut

I-38 Diamondback Moth, *Plutella xylostella*, adult moth.  
6 mm



Jude Boucher, University of Connecticut

I-39 Diamondback Moth, *Plutella xylostella*, caterpillar.  
1.7–11.2 mm



Alan Eaton, University of New Hampshire

I-40 European Corn Borer, *Ostrinia nubilalis*, adult moth (female). Wingspan 20–26 mm (male), 25–34 mm (female)



Ruth Hazzard, University of Massachusetts

I-41 European Corn Borer, *Ostrinia nubilalis*, full-grown caterpillar on corn. 1.5–25.5 mm



Jude Boucher, University of Connecticut

I-42 European Corn Borer, *Ostrinia nubilalis*, caterpillar feeding inside pepper. 1.5–25.5 mm



David N. Ferro, University of Massachusetts

I-43 Fall Armyworm, *Spodoptera frugiperda*, adult. Wingspan 32–40 mm



Ruth Hazzard, University of Massachusetts

I-44 Fall Armyworm, *Spodoptera frugiperda*, caterpillar and ear damage. 1.7–34.2 mm



Jim Dill, University of Maine

I-45 Flea Beetle, Corn, *Chaetocnema pulicaria*, adult. 1.6–2.1 mm





Canyn Andersen, University of Massachusetts

I-46 Flea Beetle, Crucifer, *Phyllotreta cruciferae*, adult. 2.2 mm



Ruth Hazzard, University of Massachusetts

I-47 Flea Beetle, Crucifer, *Phyllotreta cruciferae*, damage on cabbage.



Jude Boucher, University of Connecticut

I-48 Flea Beetle, Eggplant, *Epitrix fuscula*, adult. 2 mm



J. Ogradnick, Cornell University

I-49 Flea Beetle, Striped, *Phyllotreta striolata*, adult. 2–2.4 mm



Whitney Cranshaw, Colorado State University

I-50 Fungus Gnat, Darkwinged, *Bradysia* spp., adult. 2.5 mm



Whitney Cranshaw, Colorado State University

I-51 Fungus Gnat, Darkwinged, *Bradysia* spp., larvae stage. Up to 5.5 mm



Thomas Kuhar, Virginia Tech

I-52 Harlequin Bug, *Murgantia histrionica*, adults, mating pair. 8–11.5 mm



Thomas Kuhar, Virginia Tech

I-53 Harlequin Bug, *Murgantia histrionica*, nymphs.



Ruth Hazzard, University of Massachusetts

I-54 Hornworm, Tomato, *Manduca quinquemaculata*, caterpillar, covered with cocoon of Braconid wasp parasite. 6.7–81.3 mm





Jude Boucher, University of Connecticut

I-55 Imported Cabbageworm, *Pieris rapae*, adult butterfly. Wingspan 44 mm



Whitney Cranshaw, Colorado State University

I-56 Imported Cabbageworm, *Pieris rapae*, egg on broccoli leaf. Eggs are laid singly on top or underside of leaves. 0.5–1 mm



David N. Ferro, University of Massachusetts

I-57 Imported Cabbageworm, *Pieris rapae*, partly and full grown caterpillars on cabbage. 3.2–30.1 mm



Jim Dill, University of Maine

I-58 Japanese Beetle, *Popillia japonica*, adult. 8–11 mm



David Cappaert, www.ipmimages.org

I-59 Japanese beetle, *Popillia japonica*, grub (left, 1.5–32 mm), compared to European chafer, *Rhizotrogus majalis* (center) and Junebug, *Phyllophaga* sp. (right).



Casey Hoy, Ohio State University

I-60 Leafhopper, Aster, *Macrosteles quadralineatis*, adult and nymphs. 3.5–3.8 mm (adult)



J. Ogradnick, Cornell University

I-61 Leafhopper, Potato, *Empoasca fabae*, nymph and adult. Up to 3.5 mm



Ruth Hazzard, University of Massachusetts

I-62 Leafhopper, Potato, *Empoasca fabae*, symptoms of 'hopperburn' in potato.



Ruth Hazzard, University of Massachusetts

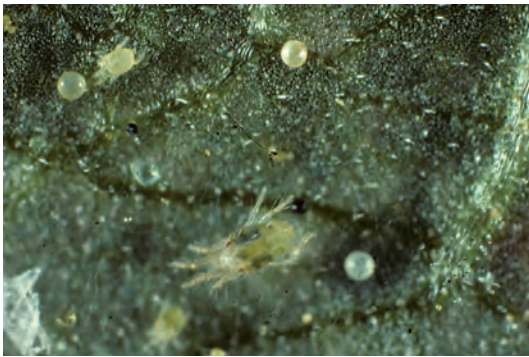
I-63 Leafhopper, Potato, *Empoasca fabae*, symptoms of 'hopperburn' in snap bean.





Ruth Hazzard, University of Massachusetts

I-64 Leafminer, Beet, *Pegomya betae*, maggot exposed in feeding tunnel, on beet leaf. Up to 5–7 mm



David N. Ferro, University of Massachusetts

I-67 Mite, Twospotted Spider, *Tetranychus urticae*, adult, egg, and nymph. 0.4–0.5 mm (adult)



David N. Ferro, University of Massachusetts

I-70 Onion Maggot, *Delia antiqua*, adult fly, pupae and larvae. 6 mm (adult), up to 10 mm (maggot)



Whitney Cranshaw, Colorado State University

I-65 Leafminer, Vegetable, *Liriomyza sativae*, damage to bean leaves.



Jude Boucher, University of Connecticut

I-68 Mite, Twospotted Spider, *Tetranychus urticae*, feeding injury on eggplant.



Ruth Hazzard, University of Massachusetts

I-71 Oriental Beetle, *Exomala orientalis* adult. 9–10.3 mm



Clemson University - USDA Cooperative Extension Slide Series, www.insectimages.org

I-66 Mexican Bean Beetle, *Epilachna varivestis*, adult, eggs, larva and pupa with feeding injury, on bean. 6–8 mm (adult), 6–9.5 mm (larvae)



Michael Hoffman, Cornell University

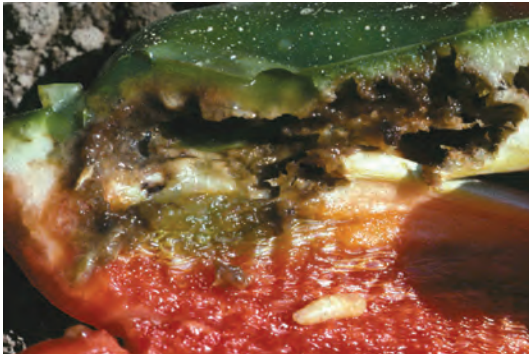
I-69 Northern Corn Rootworm, *Diabrotica barberi*, adult. 6 mm



Jude Boucher, University of Connecticut

I-72 Pepper Maggot, *Zonosemata electa*, adult fly. 6.5 mm (male), 7.5 mm (female)





Jude Boucher, University of Connecticut

I-73 **Pepper Maggot**, *Zonosemata electa*, maggot feeding inside pepper fruit. Up to 10–12 mm



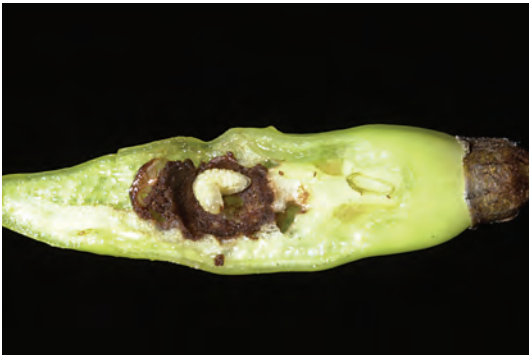
Becky Grube, University of New Hampshire

I-74 **Pepper Maggot**, *Zonosemata electa*, 'oviposition stings,' damage to fruit from egg laying by female maggot flies.



Paul McLeod, University of Arkansas

I-75 **Pepper Weevil**, *Anthonomus eugeni*, adult. 2–3.5 mm



Paul McLeod, University of Arkansas

I-76 **Pepper Weevil**, *Anthonomus eugeni*, larva. 1–5 mm



Thomas Kuhar, Virginia Tech

I-77 **Saltmarsh Caterpillar**, *Estigmene acrea*, caterpillar. 2–50 mm



Keith Weller, USDA-ARS, www.ipmimages.org

I-78 **Sap Beetle**, *Dusky*, *Carpophilus lugubris*, adult. 3.5–4.5 mm



James Kalish, University of Nebraska-Lincoln

I-79 **Sap Beetle**, **Fourspotted**, *Glischrochilus quadrisignatus*, adult. Also known as picnic beetle. 5–6 mm



James Kalish, University of Nebraska-Lincoln

I-80 **Sap Beetle**, **Fourspotted**, *Glischrochilus quadrisignatus*, larva feeding in corn kernels. Up to 5–6 mm



Martin Spellman

I-81 **Seedcorn Maggot**, *Delia platura*, maggot feeding inside seed. 5–8 mm





Jude Boucher, University of Connecticut

I-82 Slug, Grey Garden, *Deroceras reticulatum*, on cabbage.



Jude Boucher, University of Connecticut

I-83 Slug, Grey Garden, *Deroceras reticulatum*, feeding damage on cabbage.



Martin Spellman

I-84 Soybean Looper, *Pseudoplusia includens*, caterpillar. Up to 35 mm



Chery Smith, University of New Hampshire

I-85 Spotted Wing Drosophila, *Drosophila suzukii*, adults. Female, top; male, bottom. Males have a distinctive spot on each wing. 2-3 mm



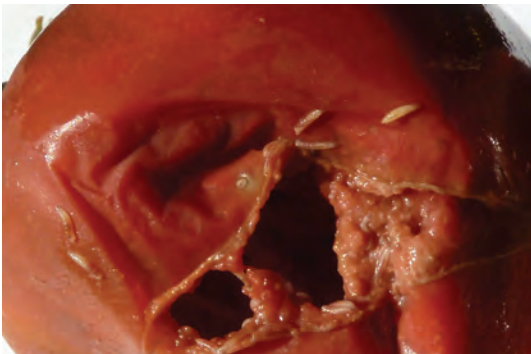
Chery Smith, University of New Hampshire

I-86 Spotted Wing Drosophila, *Drosophila suzukii*, female ovipositor. Note double serrated edge.



Eric Sideaman, Maine Organic Farmers and Gardeners Assoc.

I-87 Spotted Wing Drosophila, *Drosophila suzukii*, adults on crack in tomato fruit.



Ruth Hazzard, University of Massachusetts

I-88 Spotted Wing Drosophila, *Drosophila suzukii*, larvae in tomato fruit.



Ruth Hazzard, University of Massachusetts

I-89 Squash Bug, *Anasa tristis*, adult. 16 mm



Ruth Hazzard, University of Massachusetts

I-90 Squash Bug, *Anasa tristis*, egg mass on pumpkin leaf. 1.1-1.5 mm





Ruth Hazzard, University of Massachusetts

I-91 Squash Bug, *Anasa tristis*, nymphs. 2.5–10 mm



Martin Spellman

I-94 Stalk Borer, Common, *Papaipema nebris*, caterpillar. Up to 27 mm



Martin Spellman

I-97 Stink Bug, Green, *Acrosternum hilare*, adult. 15 mm



Alan Eaton, University of New Hampshire

I-92 Squash Vine Borer, *Melittia cucurbitae*, adult moth. Wingspan 25–37 mm



Ruth Hazzard, University of Massachusetts

I-95 Stink Bug, *Euschistus* spp., feeding injury on tomato fruit.



Alan Eaton, University of New Hampshire

I-98 Stink Bug, Brown Marmorated, *Halyomorpha halys*, adult. The next to last (4th) antennal segment has a white band; abdominal segments alternate white and dark edge. 17mm



Jude Boucher, University of Connecticut

I-93 Squash Vine Borer, *Melittia cucurbitae*, caterpillar and damage inside squash stem. Up to 25 mm



Kathy Kamminga, Virginia Tech

I-96 Stink Bug, Brown, *Euschistus servus*, adult. 10–15 mm



Julie Kikkert, Cornell University

I-99 Swede Midge, *Contarinia nasturtii*, damage.





Rebecca Hallett, University of Guelph, CAN

I-100 Swede Midge, *Contarinia nasturtii*, larvae and damage. 0.3–3.4 mm



Louis Tedders, USDA-ARS, www.ipmimages.org

I-101 Tarnished Plant Bug, *Lygus* spp., adult. 4.9–5.95 mm



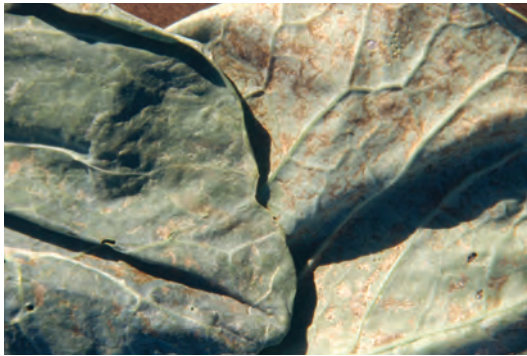
Scott Bauer, USDA-ARS

I-102 Tarnished Plant Bug, *Lygus* spp., nymph. 1– 4.5 mm



J. Ogradnick, Cornell University

I-103 Thrips, Onion, *Thrips tabaci*, adult. 1–1.2 mm



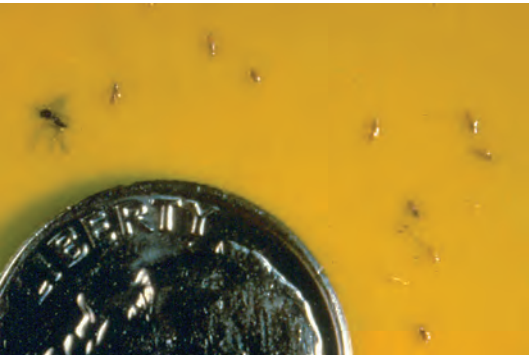
Ruth Hazzard, University of Massachusetts

I-104 Thrips, Onion, *Thrips tabaci*, damage on collard leaf



Ruth Hazzard, University of Massachusetts

I-105 Thrips, Onion, *Thrips tabaci*, damage on onion.



John Sanderson, Cornell University

I-106 Thrips, Western Flower, *Frankliniella occidentalis*, on yellow sticky card with fungus gnat. 1.2–1.9 mm (adult)



John Sanderson, Cornell University

I-107 Thrips, Western Flower, *Frankliniella occidentalis*, close-up of thrips larvae. <1 mm



Thomas Kuhar, Virginia Tech

I-108 Tomato Fruitworm, *Helicoverpa zea*, caterpillar and damage on tomato. Same species as Corn Earworm. 1.5–24.8 mm





Cory Whaley, University of Delaware.

I-109 **Tomato Pinworm**, *Keiferia lycopersicella*, caterpillar. 0.7–8 mm



Jude Boucher, University of Connecticut

I-110 **Tortoise beetle, Clavate**, *Plagiometriona clavata*, adult. 5-7 mm



Jude Boucher, University of Connecticut

I-111 **Tortoise beetle, Clavate**, *Plagiometriona clavata*, larva.



Martin Spellman

I-112 **True Armyworm**, *Pseudaletia unipunctata*, caterpillars. Also called Common Armyworm or simply, Armyworm. Up to 35 mm



Martin Spellman

I-113 **Webworm, Garden**, *Achyra rantalis*, caterpillar. 2.1–20 mm



Martin Spellman

I-114 **Webworm, Hawaiian Beet**, *Spoladea recurvalis*, caterpillar (left), along with Garden Webworm (right). Up to 25 mm



Martin Spellman

I-115 **Western Corn Rootworm**, *Diabrotica vergifera*, adult. 6 mm



David N. Ferro, University of Massachusetts

I-116 **Whitefly, Greenhouse**, *Trialeurodes vaporariorum*, adult and nymphs. 1–2 mm (adult), 0.3–0.75 mm (nymphs)



David N. Ferro, University of Massachusetts

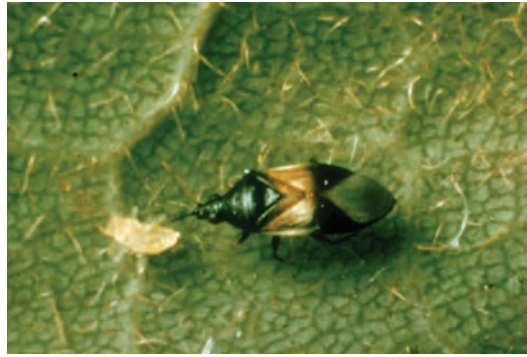
I-117 **Wireworm**, *Melanotus* spp, adult, also known as 'click beetle.' 7–11 mm





Martin Spellman

I-118 Wireworm, *Melanotus* spp., larva. 1.5–19 mm



ipmimages.org

I-119 Insidious Flower Bug (beneficial insect), *Orius insidiosus*, feeding on aphid. Common in corn. 3 mm



ipmimages.org

I-120 Ladybug (beneficial insect), Family: *Coccinellidae*, larva feeding on aphids. Up to 5–6 mm



ipmimages.org

I-121 Ladybug, Multicolored Asian (beneficial insect), *Harmonia axyridis*, adult beetles showing a range marking color. 6 mm



Martin Spellman

I-122 Ladybug, Twelve Spotted (beneficial insect), *Coleomegilla maculata*, adult. Preys on insect eggs and small larvae, including Colorado potato beetle and aphids. 5.5 mm



Martin Spellman

I-123 Spined Soldier Bug (beneficial insect), *Podisus maculiventris*, adult. Preys on insect eggs and larvae. 8.5–13 mm



Martin Spellman

I-124 Syrphid Fly larva (beneficial insect). Aphid predator; immature of Hover fly 1–13 mm



Alan Eaton, University of New Hampshire

I-125 Predatory Midge (beneficial insect), *Aphidoletes aphidimyza*, larva. Aphid predator. 2-3mm



Roy Van Driesche, University of Massachusetts

I-126 Parasite of imported cabbageworm (beneficial insect), *Cotesia rubecula*, ICW caterpillars with cocoon of *C. rubecula*. 3-4mm