




STORED-PRODUCT PEST IDENTIFICATION



MOTHS

Name	Image	Size (mm)	Life Cycle (days)	Food Preference	Chews Through Packages	Health Impact	Military Condemn Level
Angoumois Grain Moth (<i>Sitotroga cerealella</i>)		5-6	35-55	Internal feeder: whole grains	No	No	7/pound
Indian Meal Moth (<i>Plodia interpunctella</i>)		10	21-60	External feeder: processed grains, dried fruit, chocolate, dog food	Yes: older larvae	No	7/pound
Mediterranean Flour Moth (<i>Ephesia kuehniella</i>)		10-15	30-180	External feeder: flour (whole wheat), surface layers of whole grains	Yes: larvae	No	7/pound

Web Formation

Moth larvae leave a silken thread behind them wherever they crawl, thus forming webs across the surface of infested food.



Indian Meal Moth in walnuts. Photo credit: Anne Radavich



BETLES

Name	Image	Size (mm)	Life Cycle (days)	Food Preference	Chews through packages	Health Impact	Military Condemn Level
Bean Weevil (<i>Acanthoscelides obtectus</i>)		3-4	21-80	Internal feeder: whole legumes (peas, beans)	No (occasional adults), usually infest at harvest	No	7/pound
Cigarette Beetle (<i>Lasioderma serricorne</i>)		2-3	26-90	External feeder: processed grains, spices, dried meat, dog food	Yes: adults	No	7/pound
Confused Flour Beetle (<i>Tribolium confusum</i>)		3.5	28-52	External feeder: flour, cornmeal, broken grains, breakfast cereals	No	Yes	3/pound
Cowpea Weevil (<i>Callosobruchus maculatus</i>)		4-5	22-66	Internal feeder: whole legumes (peas, beans)	No (occasional adults), usually infest at harvest	No	7/pound
Drugstore Beetle (<i>Stegobium paniceum</i>)		2.5	40-210	External feeder: plant and animal-based products	Yes: adults	No	7/pound
Granary Weevil (<i>Sitophilus granarius</i>)		3-5	28-43	Internal feeder: whole grains	Yes: adults	No	7/pound
Larger Grain Borer (<i>Prostephanus truncatus</i>)		4	27-40	Internal feeder: whole grains	Yes: adults	No	7/pound
Lesser Grain Borer (<i>Rhyzopertha dominica</i>)		3	30-58	Internal feeder: whole grains	Yes: adults	No	7/pound
Maize Weevil (<i>Sitophilus zeamais</i>)		2.5-4	24-96	Internal feeder: whole grains	Yes: adults	No	7/pound
Merchant Grain Beetle (<i>Oryzaephilus mercator</i>)		2.5-3.5	30-40	External feeder: damaged and broken grain	No (occasional adults)	No	7/pound
Red Flour Beetle (<i>Tribolium castaneum</i>)		3.5	20-30	External feeder: flour, cornmeal, broken grains, breakfast cereals	No	Yes	3/pound
Rice Weevil (<i>Sitophilus oryzae</i>)		2-3	24-96	Internal feeder: whole grains	Yes: adults	No	7/pound
Rusty Grain Beetle (<i>Cryptolestes ferrugineus</i>)		1.5-2	21-42	External feeder: damaged and broken grain	No	No	7/pound
Sawtoothed Grain Beetle (<i>Oryzaephilus surinamensis</i>)		2.5-3.5	27-52	External feeder: damaged and broken grain	No (occasional adults)	No	7/pound
Shiny Spider Beetle (<i>Mezium affine</i>)		1.5-3.5	180-365	External feeder: prefers old, spoiled food and bird/rodent nests	Yes: adults and larvae	No	7/pound
Warehouse Beetle (<i>Trogoderma variabile</i>)		3-5	30-50	External feeder: animal and plant-based products, dry pet food	Yes: adults	No	1/lot

External Feeders

They feed on the external parts of food, whether processed foods or grains. Over time, they may chew through the outer seed coat to get to the inside, but don't develop inside grains and beans.



Merchant Grain Beetles in oats. Photo credit: Anne Radavich



Confused Flour Beetle in flour. Photo credit: Jerold Spohn

Internal Feeders

These larvae feed entirely within the kernels of whole grains and beans. They can remain undetected until adults emerge from the kernels.

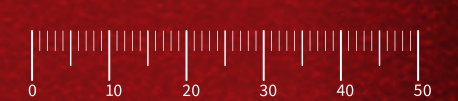


Bean Weevil infesting Great Northern beans. Photo credit: Anne Radavich



Maize Weevil infesting corn. Photo credit: Anne Radavich

Scale Key



Measurement in millimeters