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Homeowner Guide to Pill Bugs and Sow Bugs

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Introduction

PILL BUGS AND SOW BUGS are many-legged relatives of insects (Figure 1). Their outer body covering is so thin that it does not provide much protection from desiccation. This normally restricts these species to dark, moist places under landscape mulch and in compost piles. Sometimes pill bugs and sow bugs accidentally wander into homes, where they cause concern. This publication will help you to identify these species, to understand their biology and feeding habits, and to decide whether or not they are creating enough of a nuisance to require control action.

Identification and Biology

Pill bugs and sow bugs (Figure 2) are crustaceans, a group of mostly aquatic animals that also includes crayfish, lobsters, crabs, and shrimp. Although they closely resemble one another, and indeed the names *pill bug* and *sow bug* are often used informally for the same specimen, pill bug correctly refers to those species that can roll up into a tight ball (Figure 3), while sow bug describes other species that physically cannot roll into a ball.

Together, pill bugs and sow bugs are known as isopods (iso = equal, pod = foot) because each leg is nearly identical in shape and size to the others. Other names for these species are roly-polies, potato bugs, and wood lice.

Of the seven species of pill bugs and sow bugs known in Idaho, four commonly occur in Idaho home gardens. All four are native to Europe and all share certain body features and behaviors. The body is divided into a series of hardened, overlapping segments that often are blue grey on pill bugs and brown grey on sow bugs. Body shape looks rounded when viewed from above and hollow when viewed from below.



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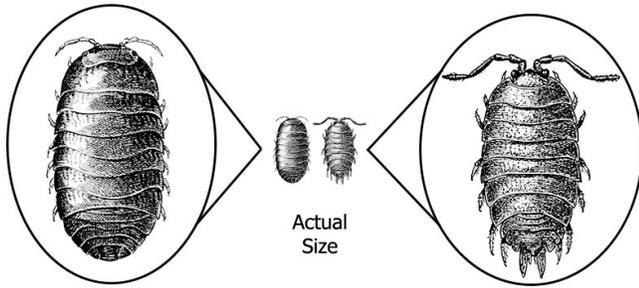


Figure 1. Typical life-size adult pill bug (left) and sow bug (right). Graphics from US Department of Agriculture.

Both have seven pairs of short, jointed walking legs and one pair of short but stout, jointed antennae at the head. They have a pair of weak jaws that are mainly used to feed on decaying vegetation, but sometimes they also feed on tender living garden seedlings. They usually feed at night and hide by day.

An external body feature that separates pill bugs from sow bugs is the length of the paired tails (technically called *uropoda*) at the end of the body. Pill bugs have tails that usually are so short they cannot be seen when looking down at a specimen, but as Figures 1 and 2 show, the paired tails of sow bugs are long enough to visibly extend from the tip of the abdomen.

The two breathe by means of gills and specialized air tubes enclosed in protective chambers under the body. Gills must be kept wet in order to extract oxygen from water, restricting these creatures to moist habitats.

Several generations develop each year. Females brood their eggs under their bodies for several weeks within a water-filled sac called the *marsupium*. Immatures initially stay inside the pouch for a few weeks after hatching but then disperse, developing through ten or more molts before reaching adulthood.



Figure 2. Pill bugs (left) and sow bugs (right) look similar to each other but comprise seven different species in Idaho.



Figure 3. Pill bugs are also known as roly-polies for their ability to roll up into a tight ball. Sow bugs cannot curl their bodies into a ball.

after two years. Adults live up to two years and continue to molt at irregular intervals throughout their lives.

Pest Status

Pill bugs and sow bugs usually are minor nuisance pests. On rare occasions, they become numerous enough to feed on the leaves of seedling plants in gardens. Their feeding damage is similar to that caused by slugs—ragged holes eaten between leaf veins.

Management

Dealing With Nuisance Problems inside the Home

Pill bugs and sow bugs can be nuisance pests inside the home. They are not dangerous or harmful to people, pets, stored foods, houseplants, furniture, or home structural timbers. Unless they can find damp areas, none survive inside the home for more than a few days. Even in high-moisture areas, unless they also find food in the form of plant debris, they cannot establish permanent, reproducing populations in the dry, light living quarters of homes.

Damp, unfinished crawl spaces and basements sometimes harbor pill bugs and sow bugs. They sometimes appear in bathrooms under sink cabinets, as well as in sunrooms with lots of potted houseplants.

When the weather is warm, individuals accidentally crawl into the living quarters of homes under loose-fitting doors and basement windows. This is especially true when physical disturbance or overwatering of outdoor landscape beds next to homes causes them to temporarily abandon these hiding sites.

Single individuals also sometimes are seen in the middle of winter inside homes. These inevitably were carried into the home on firewood stacked outside.

The key to dealing with these nuisance pests is to minimize the high-moisture conditions these groups require to survive. This is true for managing pest problems inside the home as well as minimizing plant-feeding damage in the garden.

Land Lobsters?

Because pill bugs and sow bugs are crustaceans, one might wonder if the backyard types are as tasty as ocean-dwelling crustaceans like lobster, crab, and shrimp. One British expert clears this up quite dramatically: “If you accidentally get one in your mouth, it’s a most unpleasant experience. Basically it tastes of strong urine.” Another scientist is hardly more forgiving, noting they have “a somewhat pungent sweetish [but] nauseous taste” (Gadsby 1999).

Eliminate outdoor habitats immediately next to homes. Problems usually begin immediately outside the home in moist plant beds along the foundation. Do whatever you can to dry out these areas and remove ground clutter that shelters these pests. Pill bugs and sow bugs live among wet firewood with loose bark. Stack firewood on raised concrete pads off the soil surface to minimize population buildup during the summer. Shake off individuals clinging to firewood before bringing it inside during the winter.

Seal door thresholds and basement casement windows to prevent entry. Any opening in exterior walls allows pests to enter your home. Loose-fitting sliding patio doors next to flower beds, basement windows (especially those next to window wells), and foundation vents allow for easy inside access.

Ventilate basements and crawl spaces. Damp cellars with freshly stored potatoes or organic debris offer breeding sites. These species in turn provide food for centipedes as well as spiders. Clean up and dry out those spaces.

Physically remove indoor specimens. Vacuum up or capture and release outside the few individuals that crawl into your home. There is no need for immediate indoor insecticide treatment to eliminate the occasional individual specimen.

Apply pesticides as outdoor perimeter sprays on home foundations. Only apply pesticides as a stopgap measure when intolerable numbers are

entering your home from outdoors. Insecticides cannot substitute for elimination of outdoor breeding sites and exclusion of pest entry by sealing doors and windows. This is especially true for nuisance problems inside garages and sheds.

If you decide to use an insecticide, look for products that specifically say on the label that they are for outdoor perimeter barrier applications along home foundations to kill home-invading pests. Products that contain any one (or combination therefore) of the following pest-killing active ingredients should be equally effective as foundation sprays or other formulations against pill bugs and sow bugs: acephate, beta-cyfluthrin, bifenthrin, carbaryl, chlorfenapyr, cyfluthrin, cyhalothrin, cypermethrin, deltamethrin, esfenvalerate, fipronil, fluvalinate, gamma-cyhalothrin, imidacloprid, lambda-cyhalothrin, novaluron, permethrin, pyriproxyfen, and zeta-cypermethrin. These pest-killing chemicals are sold under dozens of different commercial trade names.

These chemicals are either broad-acting nerve poisons or insect growth regulators that kill (or disrupt molting) both by direct contact with the active ingredient or when pests crawl over a dry but treated surface. A single spray or application of any of these products should provide immediate control that lasts at least 10–14 days, sometimes extending to 90 days given the nature of the chemical active ingredient.

DO NOT SPRAY any yard and garden plants—especially vegetable plants, berries, and fruits for human consumption—unless the pesticide label specifically lists your plant.

DO NOT SPRAY FIREWOOD. Treated logs may produce toxic fumes when burned.

NEVER USE YARD AND GARDEN PESTICIDES INSIDE YOUR HOME unless the pesticide label states the chemical is safe for indoor use.

The US Environmental Protection Agency (EPA) classifies most of these home barrier products as slightly toxic to people by inhalation, skin contact, or ingestion. The labels include the word CAUTION, which designates the lowest (least-toxic) EPA category. A few are moderately toxic to people (indicated by the word WARNING on the label). None of the homeowner products carry the word DANGER, the label signal word that identifies products that can seriously burn skin or eyes.

Unless otherwise directed by the label, spray a 1- or 2-foot-wide continuous band of insecticides on the soil outside around the building foundation, spraying upwards on the exterior foundation another 2 feet. Spray around doors, windows, utility line entrances, vents, and other exterior-wall openings.

It is neither necessary nor desirable to spray entire landscape beds. Broad-scale sprays kill pest and beneficial species alike, including earthworms, lady beetles, and pollinators. Indeed, when pill bugs and sow bugs remain outside the home, they too are best considered beneficial species.

“Least-toxic” alternatives to broad-acting pesticides include diatomaceous earth and plant-derived botanical insecticides. These products pose reduced risks to people, pets, and wildlife, but are not necessarily less toxic to beneficial insects and earthworms.

All of these products have limited usefulness as outdoor barrier treatments for home-invading pests. Only three diatomaceous earth products are available to homeowners for outdoor use: Safer Ant and Crawling Insect Killer, Natural Guard Effective Crawling Insect Control, and Concern Diatomaceous Earth Crawling Insect Killer. These should be applied as a light, dry dust to patios, window wells, and around door thresholds.

Plant extracts include pyrethrin (which is sold under many different commercial trade names) and the Green Light Biogonic product line of clove, thyme, and sesame oil sprays. Botanicals can kill when pill bugs and sow bugs come into direct contact with wet spray, but these natural pesticides quickly evaporate, break down, and disappear.

For all but exceptional cases of massive numbers of invading pests, we recommend against indoor pesticide use for pill bugs and sow bugs. It is more cost effective and less hazardous to you, your family, and your pets to limit your pesticide use to exterior perimeter sprays.

Dealing With Plant-Feeding Pill Bugs and Sow Bugs in Gardens and Fruit Beds

Sow bugs and pill bugs usually only feed on dead, decaying plant debris, but are known to occasionally feed on the lower leaves of tender garden seedlings and on overripe berries or vegetables that directly rest on damp soils. Feeding damage normally is inconsequential. Populations sometimes build up in backyard and commercial greenhouses, where their plant feeding can be more significant.

Minimize breeding sites. Water plants early in the day so that the soil surface dries by night, when the bugs are most active. Avoid heavy organic mulches that shelter pests early in the season, when small, succulent plants are most susceptible to feeding injury.

Ripe strawberry fruits on straw beds and maturing vegetables, like cucumbers, that rest on the soil can be susceptible. Whatever you can do to raise produce off the ground will reduce feeding.

Use dry pesticide baits if feeding damage is severe. Pill bugs and sow bugs are best considered beneficial decomposers and recyclers of plant nutrients. Only use pesticides if they are causing severe feeding damage to young seedlings or ripening fruits.

If you decide that pesticides are needed, we recommend using insecticide baits rather than plant-applied sprays. Baits consist of flakes or pellets of food materials impregnated with insecticide. These are scattered on the soil next to (but not touching) plants, where they only kill pests that eat the bait. Because they must be eaten to be effective, baits are less ecologically disruptive to beneficials than sprays

that kill by contact. Look for baits that specifically say on the label that they can be applied around garden vegetables and berries for pill bug or sow bug control.

ONLY USE BAITS TO PROTECT PLANTS SPECIFICALLY NAMED ON THE LABEL. If your plant is not listed, you have the wrong product. DO NOT USE IT.

NEVER ALLOW BAITS TO CONTACT ANY PORTION OF THE PLANT. Toxic residues otherwise might transfer to edible produce.

Further Reading

Gadsby, Patricia. 1999. "How Now, Sow Bug?" *Discover* 20(8): 64–67.

ALWAYS read and follow the instructions printed on the pesticide label. The pesticide recommendations in this UI publication do not substitute for instructions on the label. Pesticide laws and labels change frequently and may have changed since this publication was written. Some pesticides may have been withdrawn or had certain uses prohibited. Use pesticides with care. Do not use a pesticide unless the specific plant, animal, or other application site is specifically listed on the label. Store pesticides in their original containers and keep them out of the reach of children, pets, and livestock.

Trade Names—To simplify information, trade names may have been used. No endorsement of named products is intended nor is criticism implied of similar products not mentioned.

Groundwater—To protect groundwater, when there is a choice of pesticides, the applicator should use the product least likely to leach.

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