

Q: I have hundreds of roly-polies in my worm bin. How do I get rid of them?

A: Sowbugs and pillbugs are found throughout the Bay area. These are insect-like creatures that are related to lobsters and other crustaceans. They are sometimes called isopods, wood-lice or roly-polies. Some species can roll up into little balls, hence the name. Their bodies are covered with little plates of armor with seven pairs of legs beneath. Sowbugs have two little projections from their abdomens, and cannot roll up. Up to twice a year the females carry between 7-200 eggs around in a brooding pouch, where their tiny white youngsters remain for up to 6 weeks after they hatch. Adults can live for up to three years on a diet of decaying organic material, although occasionally they will eat young seedlings or roots, particularly in greenhouse environments. They are scavengers, and most other damage is incidental.

These creatures like cool, moist areas with lots of old organic material, so a worm bin is an ideal habitat. They have to live in moist areas as they cannot control the loss of water from their bodies, and breathe through gills that must be kept moist. This leads to the most effective control for your worm bin, although they are probably not causing any major problems.

Don't feed the worms for several days. Dump the contents of the bin out onto a tarp outside in the sun. The worms will quickly head toward the bottom of the pile to get away from the light. Let the pile sit for 20 or 30 minutes, and then scrape off the top layer of worm castings and organic material. Repeat until you are down to the last 2-3" of material, which should be full of worms and little else. Add everything back into the bin, and move to the garage or other protected place. You may have a few sowbugs or pillbugs that have remained in the mix, but the majority will have moved on to a cooler, damper environment.

Sowbugs and Pillbugs

This publication covers the identification, life history, and control of sowbugs and pillbugs.

Arthur F. Hagen, District Extension Entomologist

Homeowners working around shrubs, in the garden, or along the foundation of the house, frequently find little grayish colored bugs. They often describe them as looking like "little armadillos." What they are finding are sowbugs or pillbugs or both. These creatures are not insects, but belong to the same class of animals as crabs and shrimp.

Description

Sowbugs and pillbugs are wingless and vary from brown to slate-gray. Both have slightly elongated or oval flattened bodies and may be 1/2 inch long, but are usually somewhat shorter. The body covering is composed of a series of armored plates, giving them the armadillo appearance. The eyes are well developed and there are 7 pairs of legs. The sowbug differs from the pillbug in that it cannot roll into a ball like the pillbug when it is disturbed. The sowbug has two prominent tail like appendages which the pillbug does not have.



Pillbugs. (Photo: J. Kalisch -- UNL)

Life History

The life histories of the sowbugs and pillbugs are very similar, and for most purposes can be considered the same. They are inactive in the winter time. With the arrival of spring, their activity increases and mating occurs. The females carry from 7 to 200 eggs in a pouch on the underside of their bodies. In 3 to 7 weeks after mating, the eggs hatch and the young remain in the pouch for about 6 weeks. When the young leave the pouch, they begin feeding and mature. They live up to 3 years.

Damage

Both sowbugs and pillbugs breathe by means of gills; therefore, they require moisture so that the gills may be kept moist. Neither cause serious damage under most conditions, since they feed primarily on decaying organic matter. However, they may injure tender shoots of young plants in the home or greenhouse. They often also occur in areas such as crawl spaces or basements and will migrate onto a sidewalk after a heavy rain. In the crawl spaces, basements and on the sidewalks, they are primarily a nuisance.

Control

Cultural control consists of drying up the moist areas where the sowbugs and pillbugs occur. They are most often found around sidewalks, house foundations and other moist outside places. Drying can be accomplished by removing organic matter such as grass clippings, leaf litter and bedding mulches from moist areas. If sowbugs and pillbugs are migrating into the home, the foundation walls should be repaired. In addition, cracks around doors, basement windows and similar openings should be sealed. Proper drying ventilation of basements and crawl spaces will aid in reducing the favorite environment and thus the bug population.

Some of the heaviest migrations of sowbugs and pillbugs come from wooded areas such as shelterbelts and orchards. These areas as well as those around and in the home can be treated with insecticides for control.

Chemical

Outside Homes: Diazinon 25% EC. Mix 8 ounces in 3 gallons of water. Spray a 5 foot barrier around house next to foundation. Dursban 5.3% EC. Mix 4 ounces in 15 gallons water. Apply to 500 square feet around foundations and infested turf. Diazinon 5% granules. Scatter 2 pounds per 1000 square feet around house and in infested turf.

In Vegetable Gardens: Carbaryl (Sevin) 5% bait. Apply 3/4 pound per 1000 square feet to surface of garden.

Inside Homes: Baygon 1%: Use undiluted. Apply as a coarse spray to infested surfaces and sowbugs. Do not apply to rugs, draperies, wallpaper, or similar materials that may be stained. Do not apply to plastic, rubber and asphalt surfaces. Sowbugs and pillbugs do not cause damage inside homes. It is best to sweep them up with a broom or vacuum sweeper and dispose of them, rather than using chemical spray.

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Sowbugs and Pillbugs

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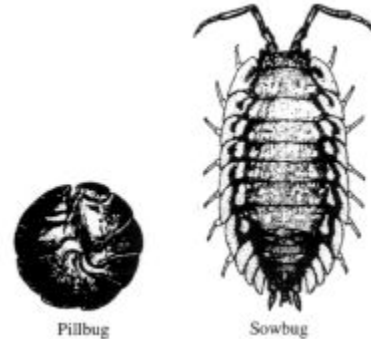
William F. Lyon

Common Name	Scientific Name
Dooryard Sowbug	<i>Porcellio laevis</i> Koch
	<i>Porcellio scaber</i> (Latreille)

Pillbug or Roly-poly	<i>Armadillidium vulgare</i> (Latreille)

Sowbugs and pillbugs, sometimes called "woodlice," live outdoors, but they may occasionally enter homes in damp areas such as basements, first floor levels and garages. These creatures are a nuisance by their presence; they do not bite humans nor damage structures or household possessions. However, if present in large numbers, they can feed on young plants in greenhouses. Some may crawl into swimming pools and drown,

causing complaints. Those that wander into homes usually die in a few days unless they find a moist place near a leaky pipe or in a damp basement, bathroom or laundry room.



Identification

Sowbugs are oval or slightly elongate with a flattened body and up to 3/4 inch long. They are wingless, brownish or slate gray, and possess well-developed eyes, seven pairs of legs and overlapping "armored" plates that make them look like little armadillos. Sowbugs have two tail-like structures on the rear end. Pillbugs are similar, except they lack the tail-like appendages and can roll up into a tight ball. Both are slow-moving crustaceans closely related to crayfish, shrimps and lobsters but not insects. The young resemble the adults, except they are smaller and lighter in color.

Life Cycle and Habits

Both sowbugs and pillbugs mate throughout the year, with most activity in the spring. The female carries the eggs, numbering from 7 to 200, in a brood pouch on the underside of her body. Eggs hatch in three to seven weeks and the young are white-colored. They remain in the brood pouch for six to eight weeks until they are able to take care of themselves. There may be one to two generations per year, with individuals living up to three years depending on weather conditions.

These creatures live outdoors, feeding on decaying organic matter and occasionally young plants and their roots. They may become pests in and around homes where flower bed mulches, grass clippings, leaf litter, rotting boards, trash, rocks and pet droppings are present. Adequate moisture is essential for their survival, and they group in masses to reduce water loss. On a hot day, they remain under objects on the damp ground and are active only at night due to lower temperatures and more humid conditions. They become inactive during the winter months except in heated buildings such as greenhouses.

Control Measures

Since sowbugs and pillbugs require moisture to survive, it is important to keep the house and outside as dry as possible.

Prevention

Remove hiding places such as piles of leaves, grass clippings, mulch in flower beds, fallen fruit, pet droppings, boxes, boards, stones and other debris from the foundation walls, doors, basement windows and other points of entry. Properly ventilate basements and subfloor crawl spaces to eliminate excess moisture. Repair and seal cracks and openings in the foundation wall, around doors, and around basement windows with caulking compound and weather stripping. Drain standing water and moist areas near potential points of entry.

Indoors, the use of fans and dehumidifiers will help dry out the basement and other damp rooms. These creatures can be collected with a broom and dustpan, vacuum cleaner or other mechanical means and discarded. Insecticide sprays usually are not needed indoors since sowbugs and pillbugs dry out quickly and die. However, household contact or residual sprays are sometimes used.

Chemical Control

Outdoors, apply a residual treatment (protective barrier) to the soil in a three to six foot band around the foundation walls, especially damp areas, surrounding the house and even underneath crawl spaces, at doorways, window wells and other potential entry sites. It is helpful to rake mulch, leaves, etc. away from the house foundation before treatment. Sprays or dusts of bendiocarb (Ficam), chlorpyrifos (Duration, Dursban, Empire, Engage), diazinon, propoxur (Baygon), carbaryl (Sevin), pyrethrins (Exciter, Kicker, Microcare, Pyrethrum, Safer) or resmethrin (Vectrin) are effective. Other labelled pesticides include acephate (Orthene), amorphous silica gel (Drione, Tri-Die), boric acid (Perma-Dust) and esfenvalerate (Conquer). Treatment of peat moss, leaves and bark used as plant mulches is important. Subsequent sprinkling with water will carry the pesticide down into the soil where these crustaceans hide. Materials such as fluvalinate (Mavrik, Yardex) are used outdoors.

Only the licensed pest control operator or applicator can apply bendiocarb + pyrethrins (Ficam Plus), cyfluthrin (Optem, Tempo), cypermethrin (Cyper-Active, Cynoff, Demon, Vikor), deltamethrin (Suspend), lambda-cyhalothrin (Commodore), permethrin (Dagnet, Flee, Torpedo), propetamphos (Safrotin), and tralomethrin (Saga). Before application, always read and follow the pesticide label directions and safety precautions.

This publication contains pesticide recommendations that are subject to change at any time. These recommendations are provided only as a guide. It is always the pesticide applicator's responsibility, by law, to read and follow all current label directions for the specific pesticide being used. Due to constantly changing labels and product registration,

some of the recommendations given in this writing may no longer be legal by the time you read them. If any information in these recommendations disagrees with the label, the recommendation must be disregarded. No endorsement is intended for products mentioned, nor is criticism meant for products not mentioned. The author, The Ohio State University and Ohio State University Extension assume no liability resulting from the use of these recommendations.

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University of Kentucky Entomology



SOWBUGS AND PILLBUGS

By Michael F. Potter, Extension Entomologist

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Sowbugs and pillbugs are similar-looking pests which are more closely akin to shrimp and crayfish than to insects. They are the only crustaceans that have adapted to living their entire life on land. Sowbugs and pillbugs live in moist environments outdoors but occasionally end up in buildings. Although they sometimes enter in large numbers, they do not bite, sting, or transmit diseases, nor do they infest food, clothing or wood. They are simply a nuisance by their presence. Recognition



Sowbugs and pillbugs range in size from 1/4 to 1/2 inch long and are dark to slate gray. Their oval, segmented bodies are convex above but flat or concave underneath. They possess seven pairs of legs and two pairs of antennae (only one pair of antennae is readily visible). Sowbugs also have two tail-like appendages which project out from the rear end of the body. Pillbugs have no posterior appendages and can roll up into a tight ball when disturbed, for which they are sometimes called "roly-polies".

Biology and Habits

Sowbugs and pillbugs are scavengers and feed mainly on decaying organic matter. They occasionally feed on young plants but the damage inflicted is seldom significant. Sowbugs and pillbugs thrive only in areas of high moisture, and tend to remain hidden under objects during the day. Around buildings they are common under mulch, compost, boards, stones, flower pots, and other items resting on damp ground. Another frequent hiding place is behind the grass edge adjoining sidewalks and foundations.

Sowbugs and pillbugs may leave their natural habitats at night, and crawl about over sidewalks, patios, and foundations. They often invade crawl spaces, damp basements and first floors of houses at ground level. Common points of entry into buildings include door thresholds (especially at the base of sliding glass doors), expansion joints, and through the voids of concrete block walls. Frequent sightings of these pests indoors usually means that there are large numbers breeding on the outside, close to the foundation. Since sowbugs and pillbugs require moisture, they do not survive indoors for more than a few days unless there are very moist or damp conditions.

Control

Minimize Moisture, Remove Debris

The most effective, long-term measure for reducing indoor entry of these pests is to minimize moisture and hiding places near the foundation. Leaves, grass clippings, heavy accumulations of mulch, boards, stones, boxes, and similar

items laying on the ground beside the foundation should be removed, since these often attract and harbor sowbugs and pillbugs. Items that cannot be removed should be elevated off the ground.

Don't allow water to accumulate near the foundation or in the crawl space. Water should be diverted away from the foundation wall with properly functioning gutters, down spouts and splash blocks. Leaking faucets, water pipes and air conditioning units should be repaired, and lawn sprinklers should be adjusted to minimize puddling near the foundation. Homes with poor drainage may need to have tiles or drains installed, or the ground sloped so that surface water drains away from the building. Humidity in crawl spaces and basements should be reduced by providing adequate ventilation, sump pumps, polyethylene soil covers, etc.

Seal Pest Entry Points

Seal cracks and openings in the outside foundation wall, and around the bottoms of doors and basement windows. Install tight-fitting door sweeps or thresholds at the base of all exterior entry doors, and apply caulk along the bottom outside edge and sides of door thresholds. Seal expansion joints where outdoor patios, sunrooms and sidewalks abut the foundation. Expansion joints and gaps should also be sealed along the bottom of basement walls on the interior, to reduce entry of pests and moisture from outdoors.

Insecticides

Application of insecticides along baseboards and other interior living areas of the home are of little use in controlling these pests. Sowbugs and pillbugs which end up in kitchens, living rooms, etc. soon die from a lack of moisture. Removal with a broom or vacuum is all that is needed. For large infestations, insecticides may help reduce inward migration of these and other pests when applied outdoors, along the bottom of exterior doors, around crawl space entrances, foundation vents and utility openings, and up underneath siding. It may also be useful to treat along the ground beside the foundation in mulch beds, ornamental plantings, etc., and a few feet up the base of the foundation wall. (Heavy accumulations of mulch and leaf litter should first be raked back to expose pests for treatment.) Insecticide treatment may also be warranted along foundation walls in damp crawl spaces and unfinished basements.

Various insecticides sold in hardware/lawn and garden shops are effective, including Sevin, Dursban, diazinon, and permethrin (Spectracide Bug Stop). Treatment can be accomplished with a compressed air (pump up) or hose end sprayer.

CAUTION! Pesticide recommendations in this publication are registered for use in Kentucky, USA **ONLY!** The use of some products may not be legal in your state or country. Please check with your local county agent or regulatory official before using any pesticide mentioned in this publication.

Of course, **ALWAYS READ AND FOLLOW LABEL DIRECTIONS FOR SAFE USE OF ANY PESTICIDE!**

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Sowbugs and Pillbugs

Sowbugs (Figure 1), and pillbugs (Figure 2), are common crustacea, belonging to a group of animals called isopods and are found throughout Florida. They are wingless, oval or slightly elongated arthropods about half an inch in length and slate-gray in color with body segments resembling armored plates.



Figure 1 .



Figure 2 .

Both pillbugs and sowbugs feed primarily on decaying organic matter although occasionally they may damage the roots of green plants. Their normal habitat is outdoors, but they occasionally wander inside where they do no damage.

Sowbugs are often called woodlice and possess two tail-like appendages, seven pairs of legs, and well-developed eyes. They are incapable of rolling into a tight ball.

Pillbugs or "rolly-pollies" lack the tail-like appendages and can roll into a tight ball.

Habits and Biology

The habits, biology and control of sowbugs and pillbugs are similar. Both animals are slow-moving, crawling arthropods. They require high moisture and are most active at night. When resting during the day, they may be found under trash, rocks, boards, under decaying vegetation, or just beneath the soil surface. A heavy infestation indoors usually indicates a large population outdoors. Mulches, grass clippings and leaf litter often provide the decaying organic matter they need to survive.

Breeding can occur throughout the year in Florida. The female carries the eggs in a brood pouch on the underside of her body. Often there are 7 to 200 eggs per brood. The eggs hatch in 3 to 7 weeks and the young remain in the pouch another 6 to 7 weeks. Once the young leave the pouch, they never return. Some species produce only one brood per year, but others may produce 2 or more. Individuals may live up to 3 years.

Control

Sowbugs and pillbugs cause no damage inside the home. Simple mechanical control such as a broom and dustpan or a fly swatter may be adequate. If they become a serious nuisance, elimination of hiding places, food material and moisture sources will reduce the infestation. Source reduction outdoors will help considerably. Piles of leaves, grass clippings and fallen fruit should be removed. Boxes or boards and other debris should be stored off the ground to eliminate a moist shelter.

Intruder HPX is an advanced generation pyrethroid ([Cyfluthrin](#)) insecticide that contains no [organophosphates](#) or carbamates. It is effective against [cockroaches](#), [ants](#), [spiders](#), crickets, [silverfish](#), sowbugs, pillbugs, millipedes, centipedes, firebrats, earwigs, [bedbugs](#); [wasps](#), [bees](#), [flies](#), [yellowjackets](#), [hornets](#), gnats, mosquitoes, [moths](#). Several types of beetles including; [carpet](#), [Confused](#), [red Flour](#), [drugstore](#), [cigarette](#), [sawtoothed and merchant Grain and Lesser Grain Borers](#). It is

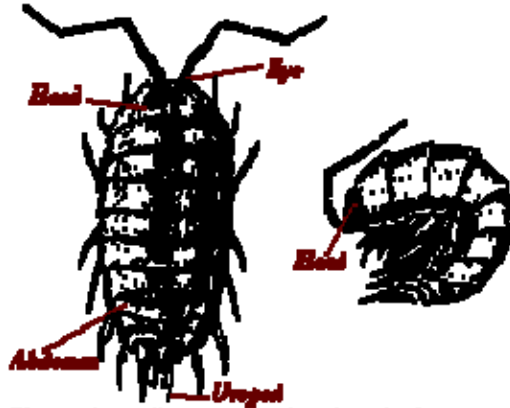
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Isopod, Pillbug, Sow Bug Information

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Phylum, Arthropoda; **Class**, Malacostraca; **Order**, Isopoda

Identifying Features



This sow bug rolls up as pictured on the right. In contrast, pill bugs roll up into tight balls where the legs and head are not visible and look like a solid ball (with small ridges).

Appearance (Morphology)

- Three body parts: head, thorax, abdomen
- One prominent pair of antennae (one inconspicuous pair)
- Simple eyes
- Seven pairs of legs
- Seven separate segments on thorax

- Paired appendages at end of abdomen called uropods
- Color varies from dark gray to white with or without pattern

Adult Males and Females

On the underside, females have leaf-like growths at base of some legs. These brood pouches hold developing eggs and embryos. The first two appendages on the male abdomen are modified as elongated copulatory organs.

Immatures (different stages)

The immature isopod molts four or five times. They look like adults except for size, proportion, color and sexual development.

Natural History

Food

Isopods are omnivores or scavengers feeding on dead or decaying plants or animals. Some may eat live plants.

Habitat

Isopods breathe with gills, so they are restricted to areas with high humidity, under rocks or logs, in leaf litter or in crevices. Some species are nocturnal.

Predators

Vertebrates and invertebrates.

Interesting Behaviors

Some species roll up into a ball when disturbed. Eggs (up to 100) are held in broad pouch on female. Juveniles look like adults and are soon liberated from pouch. Molting is in two stages. First the back half molts, then two to three days later, the front half molts. Coloration of both halves may be different at this time. Many species are fast walkers, but can be easily observed when held in the palm of the hand.

Impact on the Ecosystem

Positive

In their immediate vicinity, isopods do minimal soil improvement. Isopods are also a food source for other animals.

Negative

In greenhouses and southern states, large populations can eat and damage plants.

Collecting Live Insects

Where to find

Look under logs, moist leaf litter, flower pots (a day after they have been watered), outdoor pet dishes, and under paving bricks or stones. Isopods live where it is moist and usually in a shaded area. To attract them, water soil or leaf litter in the shade and cover with plastic, piece of plywood or cardboard. Keep the area moist and check under the covering in a couple days. If you are unable to find isopods they can be purchased from: Carolina Biological Supply Company.

How to collect

Before looking for isopods, prepare a container and tools to gather the isopods. If you are going to set them up in a container with soil in a day, you do not need to separate them from the soil (see rearing information). To collect them, use a spoon or shovel and a container. Look under a rock or log and be prepared to collect the isopods quickly before they scurry away from the light. Gently scoop up soil with the isopods and place them in the container. Look on the underside of the log or stone for others. They can be gently picked or brushed off with a finger into the container. Pill bugs often curl up and can be picked up individually or scooped up with the spoon. If you are going to keep the isopods a couple days before placing them in the classroom, use a plastic margarine or cottage cheese container with small holes poked in the lid and a moistened piece of paper towel lightly crumple inside. Use an old pie tin to sort the isopods from the soil before placing them in

the container. The paper towel must be kept moist or they will die. When you are looking under rocks and logs be careful to avoid scorpions, centipedes and other animals that live there. Return the rock or log to the way it was when you found it.

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