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STRAWBERRY ROOT WEEVILS
and CRICKETS

As Household Pests

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EAST LANSING

Strawberry Root Weevils and Crickets as Household Pests

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Strawberry root weevils and crickets, by invading houses during the latter part of the summer, occasion many inquiries to the Entomology Department each year. Strawberry root weevils are only an annoyance, crickets may destroy property.

STRAWBERRY ROOT WEEVILS

Adults of the strawberry root weevil, *Brachyrhinus ovatus*, frequently appear in houses during late summer or early fall. They are not household pests in the true sense of the word, inasmuch as they do not harm people, nor do they injure fabric, furniture, or food. They are, however, often present in unwelcome numbers and always appear in conspicuous places; such as in sinks, bath tubs, wash bowls, or on the walls. They usually collect in rooms where moisture is available.

The adults are small, dark beetles measuring a quarter of an inch or less in length. The wings do not function and the beetles depend on walking to get from one place to another. They hibernate as adults. There is one annual generation. The first adults appear early in June. Egg-laying extends over a protracted period, after which they seek hibernating quarters, and it is at this time they enter houses.

Control—The grubs can be prevented from development by soil treatment with lead arsenate. The adults are attracted to baits seasoned with oil of apple. The poison bran baits recommended for the control of grasshoppers or cutworms, with certain modifications, are found to be satisfactory. The white arsenic or paris green formula is given because it is less involved than the sodium arsenite, but the sodium arsenite bait gives the best kill because the poison is more evenly distributed.

Lead Arsenate—Where the soil is treated with lead arsenate at the rate of 10 pounds per 1,000 square feet, grubs will fail to mature. When building a new lawn, under Michigan conditions, it is safe to apply the full amount of lead arsenate at one time. The application should be made after the ground is prepared for the seed—it may be desirable to work the poison down into the top inch of the soil before sowing the grass seed. Usually the grass is somewhat retarded but as the season progresses this becomes less apparent. On an old lawn or on an established planting the dosage should be worked in gradually. At least three applications are suggested at from two- to six-month intervals, depending on the season.

Get the correct amount of lead arsenate for 1,000 square feet and combine with a bushel of damp (not wet) sand or top soil. Apply the same as fertilizer, getting as even a distribution as possible, and water.

Poison Bran Bait—Bait remains attractive to the beetles only so long as it is moist. Where it is applied in shallow trenches, protected by cloth or boards, the best results have been attained. Where trenches

are not practical, the bait may be placed on the ground around the foundation and covered with wet sacks or boards. The beetles are active at night and collect by day in darkened retreats and when such retreats are stocked with poison bran bait satisfactory "kills" are obtained. The protection also serves to keep the bait moist for a longer period of time and also to make it less accessible to children and pets.

White Arsenic or Paris Green Bait—The white arsenic or paris green formula is very satisfactory provided it is carefully mixed. Mixing may be done by hand or with machinery. Hand mixing can be done safely and effectively with either a hoe or a shovel on a cement floor or in a mixing box.

	SMALL QUANTITIES	LARGE QUANTITIES
Bran	5 lb.	100 lb.
White arsenic or paris green*	4 oz.	5 lb.
Molasses	1 pint	2 gal.
Water	1 quart	10 gal.
Oil of apple (Amyl valerate)	½ teaspoon	3 oz.

*Warning:—Do not substitute lead arsenate for the paris green or white arsenic.

The amount of water varies in accordance with the water-holding capacity of the bran.

Mix the arsenic and molasses with the water and stir into the bran; have enough water for the bran to hold its form when squeezed, but not enough to drip. After the bait has been thoroughly stirred, add the amyl valerate.

Sodium Arsenite Bait—The stock solution is made as follows:

Water	1 gallon
Caustic soda (lye)	4 pounds
White arsenic	12½ pounds

Use a container having a capacity of at least two to five gallons. Measure 1 gallon of warm water into the container and slowly add 4 pounds of caustic soda or lye. As the lye dissolves it causes the water to heat. After the lye has dissolved, add the powdered white arsenic a little at a time as fast as it dissolves. This will make a thick syrupy liquid that can be stored in tin containers. The mixture keeps indefinitely. **It is important that the solution be stirred constantly as the arsenic is being added.**

The bait proper is prepared as follows:

Arsenite of soda (stock solution)	½ pint*
Bran	12 pounds
Molasses	1 pint
Oil of apple (Amyl valerate)	½ teaspoonful
Water	About 1 gallon

*Sodium arsenite—commonly employed as weed killer.

Stir the poison and the molasses into the water and combine with bran. Add the amyl valerate after the bait is made.

Precautions—Bran bait is poisonous.

Take precautions to prevent children and pets from gaining access to the bait because it is applied in a more concentrated form than usually recommended.

Clean all implements used in mixing the bait. Burn all sacks and bury the ashes. Wash the hands thoroughly after mixing or applying the bait.

After the strength of the bait is gone, the remaining material should be either worked into the ground and watered down thoroughly, or gathered up and burned or buried.

CRICKETS

Crickets occasionally become household problems. All crickets breed out-of-doors and many of our common species hibernate as adults. They sometimes enter houses during late summer or early fall, seeking winter quarters. They feed freely on anything containing wool, eating large, irregular holes in rugs or clothing.

Field crickets, though they enter houses and are capable of doing a great deal of damage, are apparently not able to adapt themselves to conditions in the house and eventually die off by early winter.

The house cricket, *Gryllus domesticus*, however, has adapted itself to conditions as they exist in the ordinary home, hospital, factory, or bakery. It prefers the basement, but may appear on the ground floor as well as in elevator shafts, cupboards, or about warm chimneys. The house cricket can be distinguished from the common field crickets readily, since it is a light tan or straw-colored in place of black.

Control—After crickets become established in houses they can be killed with any of the powders commonly recommended for the control of cockroaches, such as sodium fluoride, powdered borax, pyrethrum or rotenone. Of these, sodium fluoride is also poisonous to higher animals and precautions must be taken to prevent accident.*

Where ordinary precautions are taken to spread the sodium fluoride under trunks, boxes, and in protected places there is very little danger from the use of this powder.

Poison Bait—Poison bait applied in covered trenches or on the ground covered over as suggested for control of the strawberry root weevil will attract and kill crickets before they enter the house. For best results, the bait should be modified in that crickets seem to like salt and for the small batch of bait $\frac{3}{4}$ pound salt is sufficient, while for the larger batch 5 pounds will be needed. Also, banana oil (amyl acetate) seems to be a more satisfactory attractant for crickets. It should be used in the same proportion as the oil of apple.

*Any sodium fluoride left over after the application should be properly labeled, marked "POISON," and placed in a container where it will never be used in cooking.