Extension Bulletin 166 (Second Printing) June, 1942

ANT CONTROL IN HOUSES AND ON LAWNS

E. I. McDANIEL

MICHIGAN STATE COLLEGE
EXTENSION DIVISION
EAST LANSING

R. J. BALDWIN, Director

Michigan State College of Agriculture and Applied Science and U. S. Dept. of Agriculture co-operating, R. J. BALDWIN, DIRECTOR EXTENSION DIVISION, Michigan State College, East Lansing. Printed and distributed under acts of Congress, May 8 and June 30, 1914.

CONTROL ANTS . . .

In Fields or Gardens *by*

1. Cultivation
2. Crop rotation

On Trees *by*

1. Contact sprays
   a. Nicotine sulphate
   b. Pyrethrum
   c. Derris

On Lawns *by*

1. Contact sprays
2. Liquid baits
3. Carbon disulphide
4. Cyanide

In Houses *by*

1. Poisons for "sweet feeders"
   a. Poison sugar (dry)
   b. Liquid poison
   c. Powders
      (1) Fluorine compounds
      (2) Pyrethrum
      (3) Borax
2. Poisons for "grease feeders"
   a. Dry poison worked into grease
   b. Commercial bait

Issued, May 1936
Second Printing, June 1942

ANT CONTROL IN HOUSES AND ON LAWNS

E. I. McDANIEL
DEPARTMENT OF ENTOMOLOGY

Ants are common everywhere, but they are particularly numerous on light sandy soil. There are several kinds, each varying somewhat from others in habits and life history. Many species build their nests in soil, others live in wood, and all will at times come inside houses. The organization of any colony is complicated. It contains at least parents, workers, and soldiers in all stages of development and at times slaves and guests as well.

Ants are very fastidious. They will not touch bait where it is placed on a contaminated surface. Sponges saturated with liquid poison or shallow containers with close-fitting covers and perforations along the sides large enough to admit ants have been found quite satisfactory.

It is necessary to enumerate a number of control measures because each infestation is an individual problem. *Where a poison bait is used it must be kept available for a period of at least three weeks,* the minimum period required for the insects to complete a life cycle.

CULTIVATION

Where ants become an economic problem in fields or garden, crop rotation and cultivation are advised.

SPRAYS

Ants sometimes congregate on flowers and shrubs. Usually they are attracted by the accumulation of honey-dew, a sweet excretion deposited by aphis. The first step in the control of the ants is to eliminate the aphis. This can be done by spraying the infested plant with one of the contact sprays, such as nicotine sulphate, derris, or pyrethrum. Where nicotine sulphate 40 per cent is applied with an atomizer, use:

Nicotine sulphate 40 per cent	1 tablespoon
Water	1 quart
Laundry soap (dissolved)	1 cubic inch

Because the commercial brands of pyrethrum and derris compounds vary in composition, it is necessary to follow the directions of the maker.

Ants underground may be eliminated by flooding the soil over their tunnels with any one of the above contact sprays using the strength recommended for the control of aphis. This method has the advantage that it does not injure the roots of plants or grass. To insure success use 2 or 3 gallons of the spray per square foot.

CARBON DISULPHIDE

The injection of carbon disulphide into the scattered openings of ants' nests is effective, although a tedious undertaking. Where the liquid is injected down into the nest only the minimum amount of damage to grass results from the application.

Use 1 to 2 ounces of the liquid to each opening. Tamp the earth to close the openings and confine the fumes. A 50-per cent carbon disulphide emulsion kills ants in the soil when 50 cc. (2 ounces or 4 tablespoons) of the emulsion is used to 10 gallons of water. Apply the diluted mixture at the rate of 2½ gallons per square foot of soil. It does not harm grass or vegetation. *Carbon disulphide is inflammable and explosive. Keep it away from fire.*

CYANIDE

There are several ways in which cyanide may be used to control ants. Calcium cyanide, G-grade, a powder resembling coarse gunpowder, may be injected into the opening, or the surface of, or in the immediate vicinity of, the nest may be raked and lightly dusted with flake cyanide. The irritated workers will immediately begin to clean the premises and rehabilitate the nest. When they collect the flakes of cyanide and start carrying them they are killed.

With mound-building species, open the nest and place a quantity of the powder (a teacupful for a large colony) in the nest and replace the soil. The fumes will penetrate the underground tunnels and, if well-distributed, may eliminate the nest with one treatment.

Another satisfactory method of applying cyanide is to dissolve it in water and inject the liquid into the nest. The fumes are given off slowly and penetrate throughout the nest more readily because none of the underground network has been clogged. This treatment kills both adults and brood. Use either 2 teaspoonfuls of calcium cyanide to ½ gallon of water; or ½ ounce of sodium cyanide to 1 gallon of water.

Cyanide Is Poison—The fumes given off by either calcium cyanide or sodium cyanide are hydrocyanic acid gas. Where cyanide in any form is used, it must be handled with these facts in mind. Where used closer than 12 to 18 inches to plants there is danger of burning and where improperly applied it may cause some burning to grass.

DRY BAIT

Combine 1 ounce of paris green with 1 pound of brown sugar. Place the dry bait in a protected place under a walk, stone, or a board. Keep the dry bait available to the ants until they disappear. Where mound-building species are under consideration open the nest and place several cupfuls of poison sugar in the nest, then replace the soil. Occasionally this bait is distributed sparsely over the lawn. It is necessary to repeat the application after a rain or after sprinkling the lawn, because the bait is effective only so long as it remains dry.

Paris green is a poison and where the bait is not properly distributed some injury to the grass may result.

LIQUID BAITS

A standard bait considered particularly effective in many parts of the country is made as follows:

Granulated sugar	1¼ pound
Tartaric acid (crystallized)	1 gram
Water	1¼ pint
Benzoate of soda	1 gram
Sodium arsenite (c. p.)	⅛ ounce

Heat the water over a slow fire. Stir the tartaric acid into the warm water then add the benzoate of soda and the sugar. Stir to prevent burning. Measure the depth of the liquid in the container (in order to replace any liquid lost by evaporation). Bring the mixture to a boil and allow to simmer for 30 minutes. Remove from the fire, cool, and add water to replace the loss from evaporation. Dissolve the sodium arsenite in 1 ounce of hot water and after both solutions have cooled combine. Stir thoroughly and add ½ pound of strained honey. This bait is poisonous to higher animals.

Sodium Arsenite Bait—An effective bait is made by dissolving ⅓ ounce sodium arsenite in 1 quart of hot water and adding 1 pound of brown sugar or 2 pounds of strained honey. This bait is also poisonous to higher animals.

GREASE-FEEDING ANTS

Of all ants troublesome about houses, the grease-feeding ants are the most difficult to control. One of the most satisfactory baits is made by working paris green, sodium arsenite, or some of the fluorine compounds into bacon rind. Where either the ants' entrance or path of march can be located, treat liberally with any one of the dusts mentioned below. An effective means of using dust against this species is to expose a liberal supply of food they prefer, surrounded by a barrier made from one of the dusts mentioned.

DUSTS

Poison dusts, such as borax, pyrethrum, derris, or some of the fluorine compounds are used to control ants. The dust is distributed where the ants will walk through it. Keep the barrier down as long as ants are present. Poison dusts are only satisfactory where they remain dry. Neither borax, pyrethrum, nor derris are poisonous to higher animals.

COMMERCIAL BAITS

Aside from the baits mentioned above, a number of very effective commercial baits, powders, and repellents are on the market.