

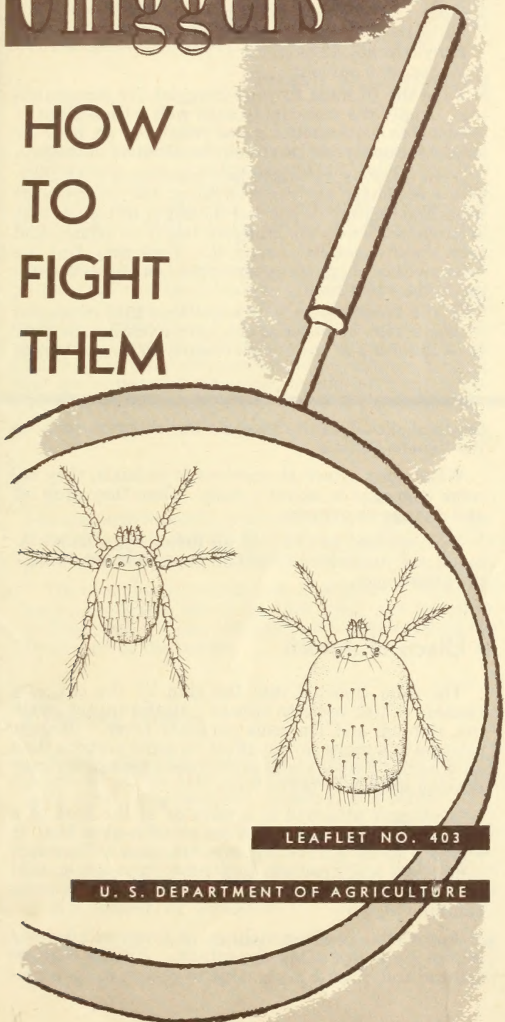
Historic, archived document

Do not assume content reflects current scientific knowledge, policies, or practices.

Reserve 403
Ag 842

Chiggers

HOW
TO
FIGHT
THEM



LEAFLET NO. 403

U. S. DEPARTMENT OF AGRICULTURE

Chiggers

how to fight them

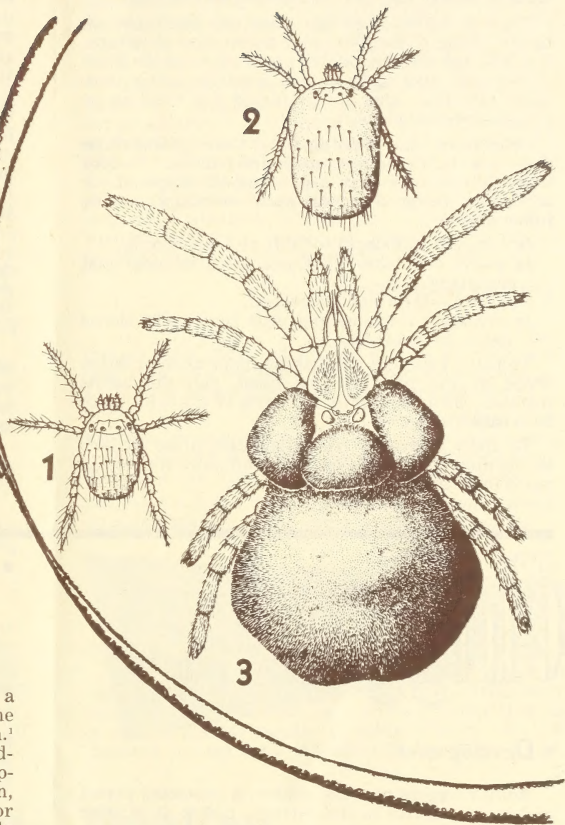
Chiggers, sometimes called red bugs, make up a family of mites. Many species are found in the United States. Two of these commonly attack man.¹

Chigger bites cause intense itching and small, reddish welts on the skin. You may notice these symptoms in the summer after working in the garden, walking in the woods or fields, picking berries, or mowing the lawn. The symptoms may be your only way of knowing that you have been in an infested place, because chiggers are so small that most persons cannot see them without a magnifying glass.

The pests occur in Nebraska, Iowa, Illinois, Indiana, Ohio, and Pennsylvania, and in all States farther south. They are especially troublesome in the South.

You can use a repellent to prevent attacks by chiggers if you go in an area known to be infested. If you get in an infested area without knowing it, you can reduce itching by bathing and by applying an antiseptic and a local anesthetic to the welts. You can get rid of an infestation by spraying or dusting the infested area with an insecticide.

¹ *Eutrombicula batatas* and *E. alfreddugèsi*.



A Species of Chigger
(*Eutrombicula batatas*)

1. Unengorged larva
2. Engorged larva
3. Adult

HOW TO PREPARE SPRAYS FOR CHIGGER CONTROL

Amount of purchased product
to mix with—

Forms in which insecticides may
be purchased

5 gallons
of water

100 gallons
of water

Chlordane or Toxaphene

Emulsifiable concentrate:

40 percent.....	2 cups.....	2½ gallons.
50 percent.....	1¾ cups.....	2 gallons.
65 percent.....	1¼ cups.....	1½ gallons.

Wettable powder:

25 percent.....	1½ pounds.....	32 pounds.
42 percent.....	1 pound.....	20 pounds.

Lindane

Emulsifiable concentrate:

20 percent.....	½ cup.....	2½ quarts.
25 percent.....	⅓ cup.....	2 quarts.

Wettable powder: 25 percent..... 3.2 ounces..... 4 pounds.

Precautions

Repellents

Do not treat underwear with a repellent. Treated underwear may irritate the skin.

Do not apply a repellent to stockings or other clothing that contains rayon. Repellents are damaging to rayon and to some other manmade fibers; nylon is not damaged.

Do not let repellents touch painted surfaces or objects made of plastic materials, such as fountain pens, fishing rods, watch crystals, or frames of eyeglasses.

Insecticides

Chlordane, toxaphene, and lindane are poisons. Handle them with care. Wear heavy clothing when you apply them. If an emulsifiable concentrate spills on your skin, wash it off at once with soap and water.

Avoid breathing the spray or dust. Spray or dust with the wind.

Keep children and pets out of a treated area until the spray dries.

After treating a lawn, sprinkle it with water to wash the insecticide from the grass into the soil. This reduces the hazard to children and pets, and does not reduce the effectiveness of the treatment.

Do not allow livestock to graze on a treated area within 2 weeks after the treatment.

Do not apply insecticides where they will contaminate fruit or vegetables.

To avoid killing fish, do not apply toxaphene along the margins of lakes or ponds, or along the banks of streams. Lindane or chlordane may be used in these places, but avoid contaminating the water.

Do not apply insecticide to your skin or your clothing to repel or kill chiggers; use only recommended repellents in this way.



O-RCH-74-A

Applying repellent to socks and cuffs of trousers for protection against chiggers.



O-IRE-100

Spraying insecticide over lake shore picnic area for chigger control.

HOW TO PREPARE SPRAYS FOR CHIGGER CONTROL

Forms in which insecticides may
be purchased

Amount of purchased product
to mix with—

5 gallons
of water

100 gallons
of water

Chlordane or Toxaphene

Emulsifiable concentrate:

40 percent.....	2 cups.....	2½ gallons.
50 percent.....	1¾ cups.....	2 gallons.
65 percent.....	1¼ cups.....	1½ gallons.

Wettable powder:

25 percent.....	1½ pounds.....	32 pounds.
42 percent.....	1 pound.....	20 pounds.

Lindane

Emulsifiable concentrate:

20 percent.....	½ cup.....	2½ quarts.
25 percent.....	¾ cup.....	2 quarts.

Wettable powder: 25 percent..... 3.2 ounces 4 pounds.

Precautions

Repellents

Do not treat underwear with a repellent. Treated underwear may irritate the skin.

Do not apply a repellent to stockings or other clothing that contains rayon. Repellents are damaging to rayon and to some other manmade fibers; nylon is not damaged.

Do not let repellents touch painted surfaces or objects made of plastic materials, such as fountain pens, fishing rods, watch crystals, or frames of eyeglasses.

Insecticides

Chlordane, toxaphene, and lindane are poisons. Handle them with care. Wear heavy clothing when you apply them. If an emulsifiable concentrate spills on your skin, wash it off at once with soap and water.

Avoid breathing the spray or dust. Spray or dust with the wind.

Keep children and pets out of a treated area until the spray dries.

After treating a lawn, sprinkle it with water to wash the insecticide from the grass into the soil. This reduces the hazard to children and pets, and does not reduce the effectiveness of the treatment.

Do not allow livestock to graze on a treated area within 2 weeks after the treatment.

Do not apply insecticides where they will contaminate fruit or vegetables.

To avoid killing fish, do not apply toxaphene along the margins of lakes or ponds, or along the banks of streams. Lindane or chlordane may be used in these places, but avoid contaminating the water.

Do not apply insecticide to your skin or your clothing to repel or kill chiggers; use only recommended repellents in this way.

CHIGGER Facts

• Development

Adult chiggers pass the winter in protected places and become active in the spring. A few days after the females become active they lay their eggs in sheltered places. These eggs hatch into the first generation of the year.

The young chigger is known as a larva. It is the troublemaker. It is parasitic, feeding on man and animals. The larva transforms to a nymph, and the nymph to an adult. Neither the nymph nor the adult is a parasite.

Chiggers raised experimentally complete the life cycle—from egg to egg—in about 50 days.

In southern Florida and southern Texas, chiggers may be present throughout the year. In other States, the chigger season begins in May, June, or July and lasts until September or the first frost.

The bodies are hairy. A larva has three pairs of legs. Its mouth parts include two pairs of grasping palps, which are provided with forked claws.

The nymphs and adults have four pairs of legs. The bodies are hairy, about ⅓ inch long, and usually a brilliant red. There is a marked constriction in the front part of the bodies.

• Feeding Habits

Young chiggers attach themselves to the skin of people or to the skin of domestic animals, wild animals (including reptiles), poultry, and birds.

Before settling down to feed, chiggers scurry around for a suitable location. The preferred locations on people are those parts of the body where clothing fits tightly over the skin, or where the flesh is thin, tender, or wrinkled.

Like ticks, they attach themselves by inserting their mouth parts in the skin—frequently in hair follicles or pores. They inject a fluid into the skin;



O-RCH-74-A

Applying repellent to socks and cuffs of trousers for protection against chiggers.



O-IRE-100

Spraying insecticide over lake shore picnic area for chigger control.

and change to nymphs.

Nymphs and adults feed on insect eggs, small insects, and organisms found on or near woody decaying substances.

• Effects of Attack

The fluid injected into the skin by the chiggers causes reddish welts to appear. It also causes swelling, itching, and (in some persons) fever. Chigger bites have a more severe effect on some persons than on others. Persons who are exposed repeatedly may develop immunity to the bites.

A chigger attached in a pore or at the base of a hair may be so enveloped in swollen skin that it appears to be burrowing into the skin. This fact sometimes leads persons to believe, mistakenly, that chiggers embed themselves in the skin, or that welts contain chiggers.

Any welts, swelling, itching, or fever will develop within 24 hours after the attack. Itching may be intense and, if nothing is done to relieve it, may con-

tain of young chickens."

Chiggers are not known to transmit any disease in this country. In some parts of the world, particularly in parts of the Far East, they transmit scrub typhus, a serious disease similar to spotted fever. In this country spotted fever is transmitted by ticks.

• Infested Places

Chiggers are most often found in low, damp places where vegetation is rank—for example, berry patches, orchards, woodlands, and margins of lakes and streams. But some species are adapted to living in drier places where vegetation is low, and heavy infestations may be found in lawns, golf courses, and parks.

You cannot tell by looking at a place whether it is infested. Chiggers may be numerous in a place one year, and scarce or absent another year; and they occur in some places only for short periods.

² See Leaflet 383, Poultry Mites: How To Control Them, which may be obtained from the U. S. Department of Agriculture, Washington 25, D. C.

centages shown in the accompanying chart are those most commonly found in retail products.

To prepare a spray, mix one of the products with water in the proportion indicated in the chart. Apply the finished spray as follows:

Small areas.—To treat a lawn, campsite, or other small area, use a cylindrical compressed-air sprayer or a knapsack sprayer. Apply $2\frac{1}{2}$ to 3 quarts per 1,000 square feet (25 to 35 gallons per acre).

Large areas.—To treat a park, golf course, or other large area, use a power sprayer. To get uniform coverage, apply twice as much spray material as you would with a small sprayer, but do not add insecticide. Double the amount of spray material by adding water. Apply 50 to 70 gallons per acre.

An emulsion spray prepared and applied according to these recommendations is effective 4 to 8 weeks; a wettable-powder spray, 2 to 6 weeks. A spray is considered effective for a stated period if few or no active chiggers can be found in the treated area during that period.

Dusts

Apply 5-percent chlordane or toxaphene dust at the rate of 40 to 50 pounds per acre (1 to $1\frac{1}{4}$ pounds per 1,000 square feet), and 1-percent lindane dust at the rate of 25 to 50 pounds per acre (10 ounces to $1\frac{1}{4}$ pounds per 1,000 square feet). A dust treatment is effective 1 to 4 weeks.

Dusts can be applied with any equipment that is used for dusting plants. A rotary hand duster is excellent for treating small areas. A power duster is better for large areas.

If you have any questions about the repellents or insecticides discussed in this leaflet, consult your county agent or an entomologist in your State extension service or experiment station; or write to the Entomology Research Branch, Agricultural Research Service, U. S. Department of Agriculture, Plant Industry Station, Beltsville, Md.

This leaflet was prepared by the Entomology Research Branch, Agricultural Research Service. It supersedes Leaflet 302, Chigger Control.

Washington, D. C.

Issued March 1956

For sale by the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C. — Price 5 cents