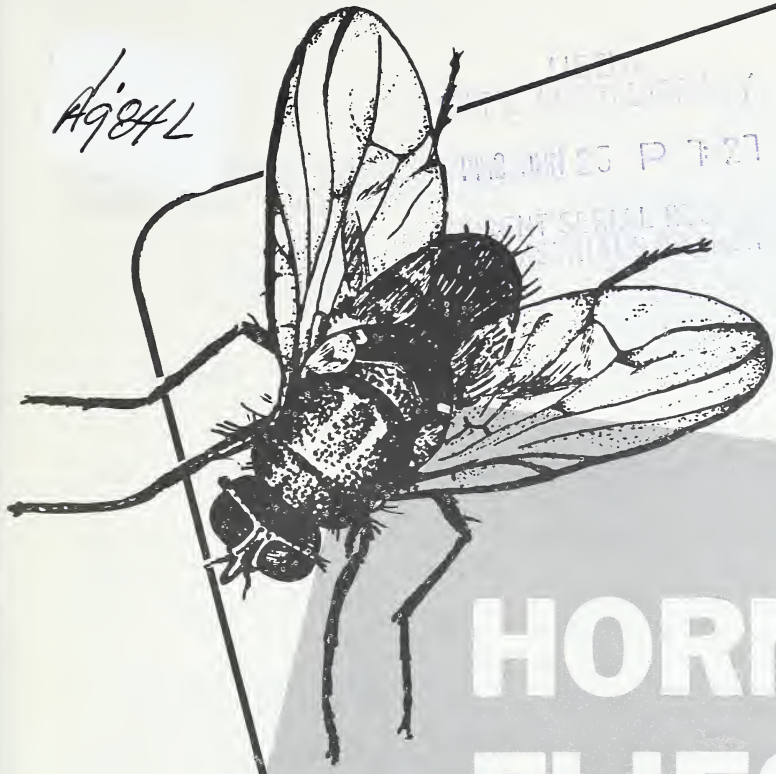


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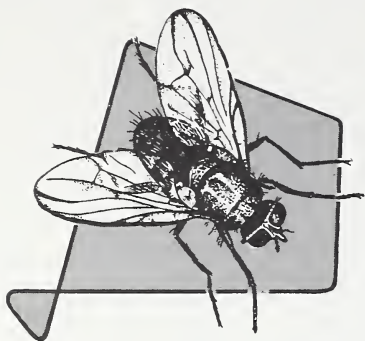


HORN FLIES

on cattle

... how to control them

Leaflet No. 388



HORN FLIES on cattle

how to control them

Horn flies¹ are primarily pests of cattle and spend most of their lives on them. They feed by piercing the skin and sucking blood.

Fighting the flies drains an animal's energy and interferes with feeding and resting. An animal may lose as much as half a pound a day during the horn-fly season. And milk production may be reduced as much as 20 percent.

Horn flies are present from spring until fall. They sometimes decrease in number during hot, dry weather.

They usually rest, head downward, on the backs of cattle, out of reach of the tail and the swing of the head. Often, to avoid sun or rain, they congregate on the underparts of the animal's body. When the air is cool they often rest on the poll or the base of the horns; hence, the name horn flies.

LIFE STAGES

Horn flies resemble house flies but are only about half as large. The females lay their eggs on fresh

manure almost immediately after it is dropped by cattle.

The horn fly egg is oblong and reddish brown. In warm weather the eggs hatch into maggots in less than a day.

The maggot, upon hatching, enters the fresh manure, where it feeds and develops to maturity in about 5 days. When full grown, the maggot changes to the pupal, or resting, stage. It pupates in the dropping in which it developed or on the soil beneath.

The pupa, which is inside a pupal case, develops into a fly in about 7 days. The flies begin to lay eggs in 2 days.

The complete life cycle, from egg to adult, takes only about 2 weeks.

CONTROL

Spraying

Spraying cattle with an insecticide is a good means of control.

For a large number of cattle, power sprayers that operate at 100 to 200 pounds of pressure per square inch are generally most suitable. The sprayer should be equipped with an agitator to keep the spray

¹ *Haematobia irritans*.

well mixed and with an adjustable spray nozzle.

A few head of cattle can be treated with hand-operated air-pressure sprayers of the cylindrical or knapsack type. If the sprayer has no agitator, shake the tank from time to time to keep the insecticide in suspension.

To control horn flies, spray the animal's shoulders, back, and flanks until they are wet. To control lice and other pests at the same time, spray all parts of the animal thoroughly.

In the directions that follow, recommendations are given for frequency of spraying. If all owners in the community treat their animals, spraying can be less frequent.

For Cattle Other Than Dairy Cows.—Approved insecticides are—

Carbaryl	Methoxychlor
Ciodrin	Ronnel
Coumaphos	Ruelene
Dioxathion	Toxaphene
Malathion	

Coumaphos, malathion, methoxychlor, and toxaphene are available as emulsifiable concentrates or as wettable powders. Ciodrin, dioxathion, ronnel, and Ruelene are available as emulsifiable concentrates; carbaryl as a wettable powder.

The amount of concentrate or powder needed to make a spray depends on the percentage of actual insecticide in the product you buy. The table on page 5 shows the percentages most commonly found in retail products, the desired strength of each spray (percentage of insecticide in the spray), and the amount

of purchased product that should be mixed with water to prepare a spray of the desired strength.

Apply 1 to 4 quarts of spray to each mature animal. Repeat every 2 or 3 weeks.

For Dairy Cows and Beef Animals.—Approved insecticides are—

Ciodrin	Synergized
Dichlorvos	pyrethrum

Apply Ciodrin as a 0.5- to 1-percent spray at 1 to 2 pints per animal, or as a 0.5-percent spray at 1 to 2 quarts per animal in pen or corral spraying with high-pressure equipment (see table on page 5). Do not apply oftener than once a week.

To make a synergized pyrethrum water-base spray, prepare a mixture consisting of—

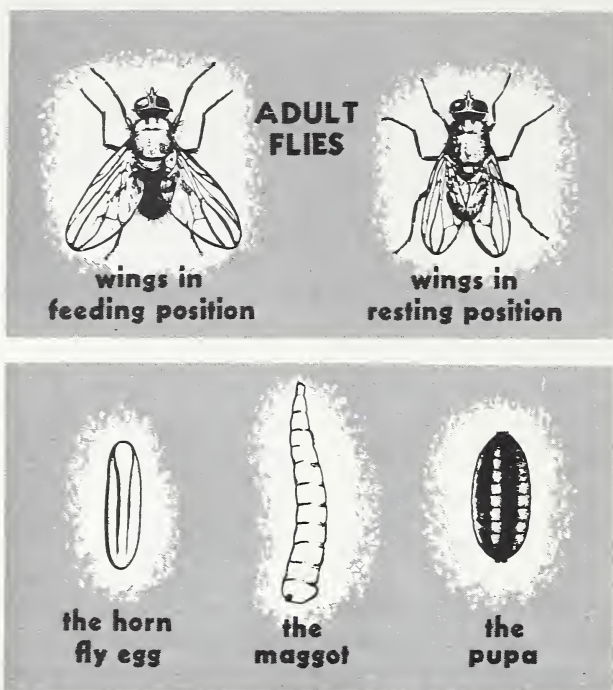
1 part of an emulsifiable concentrate that contains 1 percent of pyrethrins and 10 percent of piperonyl butoxide; and

9 parts of water.

Spray about 2 quarts on each animal every 4 or 5 days, or as needed.

Synergized pyrethrum-oil sprays may be applied to the animals at each milking. They will protect the animals for several hours. Apply the oil spray in the form of a light mist. Use only 1 or 2 ounces per animal; more may be harmful.

Trade names are used in this publication solely for the purpose of providing specific information. Mention of a trade name does not constitute a guarantee or warranty of the product named and does not signify that this product is approved to the exclusion of other comparable products.



Apply dichlorvos as a 1-percent mist spray. Purchase a product labeled for such use. Apply 1 to 2 fluid ounces per animal daily.

Ciodrin oil spray at 2 percent may be applied in the same way as synergized pyrethrum-oil sprays. Do not apply more than 2 ounces per day, per animal.

Dusting

You can obtain good control on dairy or beef cattle by applying 1 tablespoon (about 10 grams) of a 50-percent methoxychlor powder to the back of each animal and rubbing it lightly over the hair. You may use 1½ ounces of 5-percent malathion dust or 2 ounces of 4-percent malathion dust in the same way, but do not apply during or less than 5 hours before milking. No

residue will appear in the milk of an animal that is treated in this manner. Do not apply more frequently than once every 2 weeks.

For beef animals, 5-percent toxaphene or carbaryl dust may be used. This is a time-saving way to protect a few head of cattle from horn flies. Hand-dusting takes only about half a minute per animal.

Dipping

If you prefer to dip beef cattle, use toxaphene, ronnel, coumaphos, or dioxathion at the same strength used in sprays. (See table, p. 5.)

Dry dairy cows may be dipped in coumaphos or ronnel at the same strength recommended for beef animals. However, coumaphos should not be used less than 14 days, or

How To Prepare a Spray for Cattle Other Than Dairy Cows

Insecticide, formulation, ¹ and strength	Percentage of insecticide in spray	Amount of formulation to mix with 5 gallons of water
Carbaryl		
WP, 50 percent.....	0.5.....	<i>Ounces</i> 6½
Ciodrin		
EC, 14 percent.....	0.5.....	23
EC, 25 percent.....	0.5.....	12½
EC, 25 percent.....	1.0.....	25
Coumaphos		
WP, 25 percent.....	0.06.....	1⅞
EC, 12 percent.....	0.06.....	3¼
Dioxathion		
EC, 47 percent.....	0.15.....	2
EC, 30 percent.....	0.15.....	2½
Malathion		
EC, 57 percent.....	0.5.....	6
WP, 25 percent.....	0.5.....	13
Methoxychlor		
EC, 25 percent.....	0.5.....	13
WP, 50 percent.....	0.5.....	6½
Ronnel		
EC, 24 percent.....	0.25.....	6½
Ruelene		
EC, 25 percent.....	0.375.....	10
Toxaphene		
EC, 60 percent.....	0.5.....	4½
WP, 40 percent.....	0.5.....	8

¹ WP=wettable powder. EC=emulsifiable concentrate.

ronnel less than 21 days, before freshening.

Mix dips in the vat thoroughly before dipping cattle.

BACKRUBBERS

Cattle can free themselves of horn flies if you provide an insecticide-treated rubbing unit. Locate the unit near a salt lick or a water trough, or near some other place where cattle loaf or rest. Or, place it in a lane or by a gate through which the cattle frequently pass.

The rubbing unit consists of a post wrapped with insecticide-treated burlap sacks, or of a cable wrapped with treated burlap sacks and hung between two posts.

The cable may be a length of chain or several strands of heavy wire. Hang the chain or wire at a height of 4 feet between two posts set 15 to 20 feet apart. Let it sag to 18 to 24 inches above the ground for beef cattle; for dairy cows, let it sag to 24 to 30 inches above the ground to prevent straddling. Or run the cable from the top of a 4-foot post to an anchor post at ground level 15 to 20 feet away, for beef cattle only.

For dairy cows, treat the sacks with an oil solution containing 1 percent of Ciodrin or coumaphos.

A backrubber treated with an oil solution containing 1 percent of ronnel may be used for dry dairy cows. However, use of the backrubbers must be stopped no later than 21 days before freshening.

For beef cattle, use an oil solution containing 5 percent of DDT, toxaphene, or methoxychlor; or 2 percent of malathion; or 1.5 percent of

dioxathion; or 1 percent of ronnel or coumaphos.

One gallon of oil will treat 15 to 20 linear feet of burlap-wrapped cable. Re-treat the cable every 3 or 4 weeks.

To make a 5-percent oil solution, mix 1 quart of a 25-percent emulsifiable concentrate of the insecticide with 1 gallon of fuel oil, diesel oil, or kerosene. To make a 1- or 2-percent oil solution, use proportionately less emulsifiable concentrate.



PRECAUTIONS

Pesticides used improperly can be injurious to man, animals, and plants. Follow the directions and heed all precautions on the labels.

Store pesticides in original containers under lock and key—out of the reach of children and animals—and away from food and feed.

Apply pesticides so that they do not endanger humans, livestock, crops, beneficial insects, fish, and wildlife. Do not apply pesticides when there is danger of drift, or in ways that may contaminate water or leave illegal residues.

Avoid prolonged inhalation of pesticide sprays or dusts; wear protective clothing and equipment if specified on the container.

If your hands become contaminated with a pesticide, do not eat or drink until you have washed. In case a pesticide is swallowed or gets in the eyes, follow the first aid treatment given on the label, and get prompt medical attention. If a pesticide is spilled on your skin or clothing, remove clothing immediately and wash skin thoroughly.

Do not clean spray equipment or dump excess spray material near ponds, streams, or wells.

Dispose of empty pesticide containers promptly. Have them buried at a sanitary land-fill dump, or crush and bury them in a level, isolated place.

Do not contaminate feed, feeding utensils, watering troughs, or other places where stock drink, with the insecticide. Do not contaminate wells or other water supply.

When spraying, be sure the insecticide stays well mixed.

Use of certain of the insecticides must be discontinued a specified number of days before slaughter. The following shows the number of days that must elapse between the last use of insecticide and slaughter:

SPRAYING, DUSTING,

OR DIPPING :

Days

Carbaryl	7
Ruelene	28
Toxaphene	28
Ronnel	56

BACKRUBBERS :

Toxaphene	28
DDT	30
Ronnel	14

Certain limitations apply to the freshening time of dairy cows.

Read the label to find out the number of days that must elapse between the treatment and freshening.

Follow the precautions under "Dipping" and "Backrubbers" (in this publication) concerning discontinuance of use of insecticide before freshening.

Do not apply Ciodrin sprays oftener than once a week, except oil mist sprays; do not reapply ronnel or dioxathion within 2 weeks, or carbaryl within 4 days.

Do not dip calves less than 3 months old in dioxathion. Do not use malathion on calves less than 1 month old.

Do not treat animals less than 3 months old with coumaphos; spray animals 3 to 6 months old lightly. Do not use coumaphos with synergized pyrethrins, allethrin, or synergist. Do not spray animals for 10 days before or after shipping or weaning, or after exposure to disease. Do not apply in conjunction with oral drenches or other medications such as phenothiazine.

Do not spray or dip recently weaned calves in bad weather. The exposure may kill them.

NOTE: Some States have restrictions on the use of certain pesticides. Check your State and local regulations. Also, because registrations of pesticides are under constant review by the U.S. Department of Agriculture, consult your county agricultural agent or State Extension specialist to be sure the intended use is still registered.

The registrations for the use of carbaryl, ronnel, and Ruelene on beef cattle and Ciodrin, dichlorvos, and piperonyl butoxide on dairy and beef cattle were at the time of publication subject to cancellation January 1, 1970. Do not use any of these insecticides on the indicated livestock after January 1, 1970, without first determining if the registration remains effective. Check with your county agricultural agent or with your State agricultural experiment station.

*Prepared by Entomology Research Division,
Agricultural Research Service*



This edition replaces all previous editions of this publication. Because of changed insecticide recommendations, earlier copies should be destroyed.

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