SPRAY YOUR DAIRY COWS
AND BARNS FOR FLIES

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SPRAY YOUR COWS AND DAIRY BARN FOR FLIES

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Protect your dairy cows from flies, but be careful about insecticides around milk. When some insecticides are used on dairy cows, an accumulation of residue in milk can result. This residue is often in excess of legal tolerances established by the USDA and the Food and Drug Administration. For this reason, some previously listed insecticides are no longer recommended for the control of flies on dairy cattle and in dairy barns.

The recommendations contained herein replace those listed in previous revisions of Circular 498, SPRAYING YOUR COWS AND BARN FOR FLIES. Other insecticides or concentrations, greater than those listed, might result in injury to animals or in excessive accumulation of residues in milk. As tolerances are established for other insecticides, for use on dairy cows and in dairy barns, they will be included in later recommendations.

Kinds of Flies

Three kinds of flies mainly--house flies, stable flies, and horn flies--are found about farm buildings, in pastures, and on animals. They annoy your cattle and cause a drop in milk production during spring and summer.

The worst offender is the house fly, which feeds on animal excretions and breeds in manure and decaying organic matter. The stable fly feeds on the blood of animals, but deposits its eggs in fermenting plant matter. Horn flies, smallest of the three, swarm on the animals. Like the stable fly, it feeds on blood but lays its eggs only on fresh cow manure.

Horse flies, deer flies, and mosquitoes often attack dairy cattle as they graze on pastures, and often find their way into dairy barns to annoy and feed on the animals. These 3 insect species are blood suckers and might become important pests of dairy cattle in some areas of the State.
SANITATION: Spraying or dusting with insecticides should supplement—not replace—practices you have for getting rid of all fly-breeding places. Sanitation is the most important factor in a successful fly-control program on a dairy farm. Even though highly effective insecticides are used, they will eventually give poor results or fail without a thorough sanitation program.

What To Use on Dairy Cattle

Malathion 5% Dust - Apply 3 tablespoons of 5% malathion dust to each dairy cow. Sprinkle it on the back and neck of each animal. Repeat treatments at 10- to 14-day intervals.

SAFETY PRECAUTIONS: Do not use malathion as a spray or dip on dairy cattle. Do not apply malathion dust on dairy cattle within 5 hours before milking.

RESIDUE TOLERANCE: 4.0 ppm in meat and 0 ppm in milk.

WAITING PERIOD: None established.

Ciodrin - Use ready-prepared 2% Ciodrin oil solution as a fine mist spray. Apply 1 to 2 fl. oz. per animal per day. Lightly moisten the hair on all parts of each cow’s body. Do not apply this mist spray more often than once a day, and do not apply more than 2 oz. per animal per day.

OR

Use 1 qt. of Ciodrin emulsion concentrate (1 gallon contains 2 lbs. of Ciodrin) in 12 gals. of water for a 0.5% concentration. Proportionately larger or smaller quantities can be mixed if desired.

Apply the 0.5% spray with high-pressure sprayers with mechanical agitators. Cover each animal’s body and legs (avoid excessive spraying of the head). Apply 1 to 2 qts. of spray per large cow and proportionately less for smaller animals. Do not apply Ciodrin sprays more often than once a week and do not wet the animal’s hide.
SAFETY PRECAUTIONS: Do not contaminate feed or foodstuffs. Do not contaminate streams, lakes, or ponds with the insecticide. During mixing and loading operations, wear clean, synthetic-rubber gloves and a mask or respirator approved by USDA.

RESIDUE TOLERANCE: None established.

WAITING PERIOD: None established.

Dichlorvos (Vapona) - Use ready-prepared 1% dichlorvos oil solution as a fine mist spray. Apply 1 to 2 fl. oz. per animal per day. Lightly moisten the hair on all parts of each cow’s body. Do not apply more than 2 oz. of the mist spray per animal per day.

OR

Use 1 pt. of dichlorvos emulsion concentrate (1 gallon contains 4 lbs. of dichlorvos) in 12 gals. of water for a 0.5% concentration. Proportionately larger or smaller quantities can be mixed if desired.

Apply the spray with high-pressure sprayers with mechanical agitators. Cover each animal’s body and legs by applying 1 to 2 qts. of spray per large cow and proportionately less for smaller animals. Repeat applications as needed to control flies, but not more often than once every 7 days.

SAFETY PRECAUTIONS: Do not contaminate milk or milking utensils, feed, water, or foodstuffs.

RESIDUE TOLERANCE: None established.

WAITING PERIOD: None established.

Other recommended insecticide sprays are pyrethrins plus synergist. Use these according to label directions.

What To Use in Back Rubbers

Ciodrin - Use 1 gal. of ready-prepared 1% Ciodrin oil solution to each 20’ of cable in back rubbers. Saturate cables as often as needed, usually about every 2 or 3 weeks during the horn fly season.
It is best to use ready-prepared 1% Ciodrin oil solution. However, you can prepare your own by dissolving 1 qt. of Ciodrin emulsion concentrate (1 gallon contains 2 lbs. of Ciodrin) in 7 gals. of No. 2 fuel oil.

SAFETY PRECAUTIONS: If you prepare your own 1% oil solution, use No. 2 fuel oil as the solvent; never use oils as heavy as motor oils. Maintain back rubbers so feed and drinking water will not be contaminated with insecticides.

For details on construction and maintenance of back rubbers, see the current revision of Extension Circular 812, CONTROL HORN FLIES ON BEEF CATTLE WITH BACK RUBBERS.

What To Use Inside and Outside Dairy Barns

Diazinon - To prepare a 0.5% spray, use 2 lbs. of 50% diazinon wettable powder in 25 gals. of water. Longer residual control can be obtained by increasing the spray concentration to 1.0% (4 lbs. of 50% diazinon wettable powder in 25 gals. of water). Proportionately larger or smaller quantities of the spray can be made as desired.

Use high-pressure sprayers with mechanical agitators. Small, hand-operated, compressed-air sprayers may be used, but are not entirely satisfactory. Apply spray to ceilings and walls of dairy barns, at a rate of 1 gal. per 500 sq. ft. or to point of run-off. Repeat treatments when fly populations build up again.

Agitation of spray during application--especially important with hand-operated equipment--will insure even distribution of diazinon over treated areas.

Spot treatments can be made with 1.25% diazinon spray, prepared by mixing 1/2 lb. of 50% diazinon wettable powder and 1 lb. of sugar in 2-1/2 gals. of water. Apply this to areas frequented by flies, such as doorways and around windows. Spot treatments can be made with a sprayer or with a paint brush.
A 0.15% diazinon liquid bait can be prepared by mixing 2 oz. of 50% diazinon wettable powder and 1 lb. of sugar in 5 gals. of water. Apply with a sprinkling can over the floor in areas frequented by flies. Applications should be repeated every day.

On manure piles and other fly-breeding areas outside dairy barns, apply a 0.15% spray (prepared by mixing 2 oz. of 50% diazinon wettable powder in 5 gals. of water) per 500 sq. ft. Repeat applications as often as needed and especially every time manure is added to the pile. Apply with a sprinkling can.

SAFETY PRECAUTIONS: Remove animals from buildings during spraying operations and keep them out for at least 4 hours. Do not spray animals or contaminate their feed or drinking water. Feed bins and troughs and waterers should be covered during spray application. Do not use diazinon sprays in homes or in poultry houses.

Dichlorvos (Vapona) - Use 1 pt. of dichlorvos emulsion concentrate (1 gallon contains 4 lbs. of dichlorvos) in 12 gals. of water to make a 0.5% spray concentration. Proportionately smaller or larger quantities of the spray can be prepared as desired.

Apply the 0.5% concentration with a high-pressure sprayer with mechanical agitator. Small, hand-operated, compressed-air equipment can be used; however, these sprayers are not entirely satisfactory. Apply the spray to ceilings and walls of dairy barns at the rate of 1 qt. per 1,000 sq. ft. of surface, or to point of run-off. Treat around doorways, window sills, alleyways, feed storage rooms, and outside areas where flies breed and congregate. Treat twice weekly until flies are controlled, and once a week thereafter.

SAFETY PRECAUTIONS: Do not contaminate milk or milking utensils, feed, water, or foodstuffs.

Dimethoate (Cygon) - To prepare a 1% spray, use 2 qts. of 43.5% dimethoate emulsion concentrate (1 gallon contains 4 lbs. of dimethoate) in 25 gals. of water. Proportionately larger or smaller quantities of the spray can be made as desired.

Apply 1% dimethoate with a high-pressure sprayer with mechanical agitator. Small, hand-operated, compressed-air sprayers can be used, but are not entirely satisfactory. Apply spray to ceilings, walls, and stanchions, at the rate of 1 gal. to 500 to 1,000 sq. feet, or to point of run-off.
As a spot treatment, apply 1% dimethoate spray to doorways, windows, and other areas where flies congregate. On manure piles and other fly breeding areas outside the dairy barn, apply liberal amounts of the 1% spray with a sprinkling can. Repeat treatments when necessary.

SAFETY PRECAUTIONS: Do not contaminate feed and food-stuffs, drinking fountains, litter, and feed troughs. Do not use in milk-processing rooms, including milk houses and milk-storage rooms. Do not use in homes.

Other recommended insecticides are Ciodrin, ronnel (Korlan), malathion, trichlorfon (Dipterex, Dylox), pyrethrins plus synergist. Use these according to label directions.

Spray Equipment

You can apply cattle and barn sprays with hand-operated or power-spray equipment. The smallest sprayer recommended is the 3-gallon, compressed-air type. Where you have large barns and many cattle to treat, use a larger, high-pressure sprayer of 25- to 100-gallon capacity. Extremely high pressure at the sprayer nozzle is not necessary—60 to 125 lbs. pressure is usually sufficient. Best results are obtained with nozzles which can be adjusted to produce a coarse, cone-shaped spray. Keep sprayers in excellent operating condition.

How To Mix Sprays

Pyrethrins plus synergist dairy cattle sprays, unless otherwise indicated on the container label, are packaged in ready-to-use form, and no mixing with water is necessary. Dairy barn and outside surface sprays are prepared by mixing emulsion concentrates or wettable powders with water. Emulsion concentrates mix readily with water; simply pour the correct amount of emulsifiable liquid in the spray tank and add water. However, in using wettable powders in hand-operated, compressed air sprayers, it is advisable to make a slurry. In a suitable container, mix a small volume of water with the correct amount of wettable powder—about 1-1/2 pints of water to a pound of wettable powder. Add the rest of the water to the slurry, mix it completely, and pour the mixture into the spray tank. Keep it well stirred in the tank to prevent settling.
Premixing is not necessary if you apply the spray with power equipment. In power sprayers, all you have to do is put the water in the tank, start the agitator, and add the required amount of wettable powder or emulsion concentrate. Let the agitator operate long enough to mix the wettable powder or emulsion concentrate completely with the water before starting to spray.

When To Spray

**Dairy Cattle** - Apply the first dairy cattle spray as soon as flies become numerous in the spring. In eastern and southeastern Virginia, the approximate date for the first treatment is May 1; it is 2 weeks later in other areas of the State.

**Dairy Barns** - Make the first application of barn spray during late April or early May in eastern and southeastern Virginia, and 2 weeks later in other areas.

How To Spray

**Dairy Cattle** - Spray the head, back, sides, belly, and legs of animals. Spray each animal until it is well covered or to the point of run-off. Avoid excessive loss of spray by runoff. (Make certain the run-off does not contaminate livestock feed or water.)

**Dairy Barns** - Before spraying the barn, remove all animals and all feed, and cover feed troughs and water fountains with old papers or empty feed sacks. Spray ceilings, walls, stalls, crossbeams, support columns, windows, doors, light cords, screens, and other surfaces, inside and outside the barn, where flies congregate. Use a coarse or “wet” spray, not a fog or mist, and apply the liquid to the surface to the point of run-off. Avoid loss of the spray by run-off. (Make certain the run-off does not contaminate livestock feed or water, or the food of humans.)
KEYS TO PROPER USE OF PESTICIDES

1. Read the label on each pesticide container before each use. Follow instructions to the letter; heed all cautions and warnings, and note precautions about residues.

2. Keep pesticides in the containers in which you bought them. Put them where children or animals cannot get to them, preferably under lock and away from food, feed, seed, or other material that may become harmful if contaminated.

3. Dispose of empty containers in the manner specified on the label. If disposal instructions are not printed on the label, burn the containers where smoke will not be a hazard, or bury them at least 18” deep in a place where water supplies will not be contaminated.

SEE YOUR DOCTOR IF SYMPTOMS OF ILLNESS OCCUR DURING OR AFTER USE OF PESTICIDES
Trade and brand names are used only for the purpose of information and the Virginia Agricultural Extension Service does not guarantee nor warrant the standard of the product, nor does it imply approval of the product to the exclusion of others which may also be suitable.

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