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GUIDE

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1979 Recommendations for Fly Control on Dairy Cattle

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NOTE: Chlorinated hydrocarbon insecticides, excepting methoxychlor and seed treatment, are not recommended for *any* use on Missouri dairy farms.

Flies that attack dairy cattle are of two general groups—*non-biting,* those with sponging mouth parts, and *biting,* those with piercing-sucking mouth parts. *Non-biting* includes house flies and face flies. *Biting* includes horn flies, stable flies, horse flies, and various small gnats such as *Simulium* and *Culicoides*.

Non-biting Flies

Non-biting flies have mouth parts that are not adapted for piercing the animal's skin. They can only take food from the surface of the animal's skin, such as secretions around the eyes and mouth and blood flowing from wounds. They may cause eye inflammation, transmit eye disease organisms, and annoy animals so that they do not graze normally, thereby causing a decline in milk production.

House flies may be found feeding around the eyes, nose, mouth and on saliva or other moisure on the hair. Larvae develop in fresh manure, especially that deposited close to barns.

Face flies closely resemble house flies but are usually just slightly larger. As the name implies, they feed mainly around the face of the animal, particularly around the eyes, nose, and mouth. Larvae develop in fresh manure, principally that deposited in open pastures.

Biting Flies

Biting flies feed by inserting their sharp mouth parts into the animal and feeding on body fluids. The feeding of the flies is painful and causes a reduction in food consumption. The reduced food intake and loss of blood may cause a decline in milk production.

Horn flies are about one-half the size of house flies and are black with a gray powder covering the body. They usually feed on the shoulders and back and less frequently on the neck, around horns, and on the belly. Wings are partially spread when feeding, giving them the appearance of an arrowhead. Generally they feed in large numbers and "swarm" when disturbed. Larvae develop in fresh manure.

Stable flies are about the size of house flies. The body is a powder-gray and black. These flies feed mainly on the animals' legs. When the fly is resting, the mouth parts are projected forward. The larvae develop in moist, strawy manure.

Several species of **horse flies** may pester cattle. Size may vary from ⅓ to one inch long. Color may be solid, striped or spotted brown or black. Eyes are sometimes brightly colored. Only the females bite; the males feed on honeydew, nectar, etc. Larvae live in mud or water in streams, lakes, and swampy areas.

Missouri insect control recommendations are revised annually and are subject to possible change during the season. This guide is intended for use during the 1979 season only. No discrimination is intended and no endorsement is implied.

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Fly	Control Recommendations
Horn Fly	*Backrubber Applications*—See UMC Guide 7012, "Making and Using a Cattle Backrubber," for suggestions on constructing a backrubber. 1. Charge the backrubber with 1% coumaphos made by mixing ⅔ pint 11.6% Co-Ral emulsifiable concentrate in 1 gallon of fuel oil. 2. Or use 1% crotoxyphos made by mixing ½ pint 14.4% Ciodrin emulsifiable concentrate in 1 gallon of fuel oil. 3. Ronnel (Korlan)—use a 1% ronnel solution made by mixing 10 tablespoons 24% Korlan emulsifiable concentrate in 1 gallon of fuel oil. *Dust Bag–Self Application*—Place bags in doorways, gateways, loafing areas, or other areas where cattle congregate. Place bags so cows will dust themselves as they *leave* the milking parlor, *not as they enter*. Keep bags dry. 1. Use burlap bags containing 1% coumaphos (Co-Ral) dust. 2. Or use burlap bags containing 3% stirofos (Rabon) livestock dusting powder: *Dust–Hand Application*—Lightly rub recommended amount of dust into hair on animal's neck, back and upper portion of sides. DO NOT apply dusts while cows are being milked. 1. Apply two heaping tablespoons of 3% stirofos (Rabon) livestock dusting powder per animal as needed. 2. Or use four tablespoons of 4% or three tablespoons of 5% malathion dust per animal. Repeat application in 10 to 14 days, if needed. DO NOT apply malathion dust within five hours of milking. 3. Or use one heaping tablespoon of 50% methoxychlor wettable powder per animal as needed, but not more often than once every three weeks. *Spray Application*—DO NOT apply sprays while cows are being milked. 1. Make daily mist applications of commercially available 2% crotoxyphos (Ciodrin) applied at 2 ounces (4 tablespoons) per animal per day. 2. Use 1% crotoxyphos made by mixing ⅔ pint (1 - ⅓ cups) 14.4% Ciodrin emulsifiable concentrate per gallon of water. Apply one to two pints weekly, per animal. 3. Or make daily mist applications of commercially available 1% dichlorvos applied at two ounces (4 tablespoons) per animal per day. Splitting application, applying one ounce in the morning and one ounce in the evening may give somewhat better results. For a baited solution, add sugar at the rate of one pound per gallon of 1.0% spray. 4. Or make daily mist applications of 0.1% pyrethrin plus piperonyl butoxide. Apply one to two ounces (2 to 4 tablespoons) per animal per day.
Stable Fly	*Spray Application*—Be sure to spray legs and underside of body. DO NOT apply sprays while cows are being milked. 1. Make weekly applications of 0.5% Crotoxyphos made by mixing two quarts 14.4% Ciodrin emulsifiable concentrate in 12 gallons of water. Apply one to two quarts per animal. 2. Or make daily mist applications of 0.1% pyrethrin plus piperonyl butoxide. Apply one to two ounces (2 to 4 tablespoons) per animal.
Horse Fly	*Spray Application*—DO NOT apply sprays while cows are being milked. Apply 1% pyrethrins plus piperonyl butoxide by using a hand sprayer and drifting the insecticides onto the ends of the hair with four to five strokes of the sprayer per cow per day. No chemicals currently provide adequate protection against horse flies. If a person is so inclined and has the time, some rather good results have been obtained by using "horse fly traps." Plans for these traps can be obtained by contacting your local Extension Center or the Entomology Department, 1-87 Agriculture Building, University of Missouri, Columbia, MO 65211.
Face Fly and House Fly	*Spray Application*—The insecticides should be applied on the animal's face for best control. DO NOT apply sprays while cows are being milked. 1. Use daily mist applications of commercially available 2% crotoxyphos (Ciodrin) in oil applied at the rate of 2 fluid ounces (4 tablespoons) per animal per day. Somewhat better results may be obtained by splitting this application, applying 1 ounce (2 tablespoons) in the morning and again in the evening. 2. Or use 1% dichlorvos mist spray daily as listed above for horn fly control. 3. Or use 0.1% pyrethrin plus piperonyl butoxide daily as listed above for horn fly control.

CAUTIONS: DO NOT contaminate feed, water, feed and water utensils, milk or milking equipment. Use malathion only in a dust formulation on dairy cows. Use methoxychlor only in a dust or dry wettable powder formulation on dairy cows. DO NOT use BHC, DDT, lindane, toxaphene or other nonregistered materials on dairy cows.

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