



## ENTOMOLOGY

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# Fly Control for the Dairy Herd

Sanitation and good management practices are essential to an adequate dairy herd insect control program. Chemical treatments are worthless unless breeding places for house flies and stable flies—manure piles, strawstack bottoms, feed wastes, and rubbish—are cleaned up. Manure packs in loose housing should be removed as early as possible in spring. Remove manure from around buildings at least twice a week during summer and spread thinly on fields to dry. A well-drained loafing yard will also help reduce fly numbers.

House flies are now resistant to most insecticides. Thus, it is doubly important that sanitation be the basis for a fly control program. Together with this, baits and baited sprays will often be needed to make wall residuals fully effective.

Care in building construction and maintenance is also very important. Screened buildings or calf pens not only reduce fly numbers initially but increase the effectiveness of wall residuals, baits, and space sprays. In most cases, bait treatments need to be combined with the use of residual sprays.

## WALL RESIDUAL TREATMENT

Wall residuals are most effective when applied in barns and milking parlors early in the summer. In situations where whitewashing is used, the insecticide should be applied after the whitewashing has thoroughly dried. The initial insecticide treatment should coincide with the first appearance of flies. Correct

### Materials to use for wall residuals and baited sprays

Chemical	Formulation	Amount of formulation per 25 gallons	Amounts per 3 gallons	
			Insecticide	Sugar*
Dimethoate (Cygon)	46 E**	2 quarts	1 cup	—
	25 E	4 quarts	2 cups	—
Malathion	57 E	1½ quarts	1 cup	1½ cups
	25 W***	8 pounds	1 pound	—
Stirofos (Rabon)	24 E	4 quarts	2 cups	—
	50 W	4 pounds	½ pound	—
Stirofos + dichlorvos (Rabon + Vapona)	21 + 5 E	4 quarts	2 cups	—
Dichlorvos (DDVP)	24 E		3 teaspoons	1½ pounds
Naled (Fly Killer D)	37 E		2½ table-spoons	1½ pounds
Trichlorfon (Dipterex)	1% bait		Ready to use dry at 4 tablespoons per 1000 sq. ft. of floor and window ledges.	
Bomyl	1% bait		Ready to use dry at ¼ pound per 1000 sq. ft.	

\* See baited sprays and dry baits

\*\* E = emulsifiable concentrate

\*\*\* W = wettable powder

timing of this first spray will prolong its effectiveness in reducing early season fly populations.

When using residual sprays, keep all animals out of the building for at least 4 hours after spraying. Cover all feed, feed troughs, and drinking cups before spraying. Apply spray just to the point of runoff, being sure that all wall surfaces, window ledges, and ceiling are covered. Painted surfaces will require less spraying than unpainted surfaces. Spray just to the point of runoff or about 1 gallon to 300-500 square feet of surface. You can achieve good coverage with a 3- or 4-gallon hand sprayer while conserving insecticide.

## House fly

Resistance to malathion is rather common. The other chemicals mentioned can provide excellent fly control. Thus, if malathion does not appear to provide adequate control, another compound should be used. Even an effective insecticide usually requires additional applications during the fly season.

## BAITED SPRAYS AND DRY BAITS

Baited sprays can be used in two ways. First, spot treatments with one of these sprays (see table) may delay the need for a wall residual treatment. Where sanitation is excellent, such spot treatments may be sufficient for season-long fly control. Second, they can serve as a touchup treatment following a wall residual treatment.

Dry scatter-baits containing diazinon, naled (Dibrom), trichlorfon (Dipterex), malathion, dichlorvos (DDVP), or Bomyl can also be used. The addition of house fly sex pheromone (an attractant) to baits has increased their effectiveness dramatically. For first treatment, scatter bait on window ledges and floor areas where flies appear to be resting. Re-treat areas having the largest fly kills.

Bait treatments, except where good sanitation is present, are of limited value. They only supplement a more complete control program.

## TREATMENT OF DAIRY COWS

### Space sprays

A common practice is to stanchion animals or gather them just before milking and mist the room in which they are held. Synergized pyrethrins at a 0.1 to 0.2 percent concentration provide the most rapid knockdown of flies under these conditions. No residual effectiveness of such a treatment can be expected.

## Applications to animal

### *Crotoxyphos (Ciodrin) sprays*

Use a 1 to 2 percent solution as a mist spray at not over 1½ fluid ounces per head per day. A once-a-week application of 1 pint per head using a 1 percent solution is somewhat less effective. Ciodrin gives the best control of stable flies and also controls horn flies but must be applied to the legs for stable fly control. Ciodrin-Vapona combinations are available which provide a quicker effect and can be used in the same manner.

### *Dichlorvos (DDVP, Vapona) spray*

Apply a 1 percent solution as a mist-like spray at not over 2 fluid ounces per head per day. There is little residual control with Vapona, but air-borne flies are easily knocked down. Ciodrin alone and Ciodrin-Vapona combinations provide superior control.

### *Malathion, 4 to 5 percent dust*

This treatment will control horn flies only; apply when horn flies appear. Use dry at 2 to 4 tablespoons per head. Do not apply during milking or less than 5 hours before milking. Do not use malathion sprays on milk cows. Do not treat more often than once every three weeks.

### *Methoxychlor*

Use 2 tablespoons of 50 percent wettable powder per head. Rub the dry powder into the hair over the shoulders and back. Because this treatment controls horn flies only, apply when horn flies appear. Do not use methoxychlor sprays on milk cows.

### *Pyrethrin sprays*

Pyrethrins are generally combined with a synergist such as piperonyl butoxide or MGK 264. Ready-to-use, oil base sprays containing one or more synergists plus a repellent (R-326) may be used at not over 2 ounces per head per day. Commercial combinations of these materials should contain a minimum of 0.1 percent pyrethrins and 0.2 percent repellent. For deer flies and horse flies R-326 should be used at 0.4 percent with pyrethrins plus synergist. Fogging or misting, as with a space spray, will not provide residual fly reduction on the animal.

## Feed-through insecticides

Recently, Rabon oral larvicide has received attention as an additive to mineral blocks, dry mineral, and/or feed. The material passes through the animal and kills fly larvae in the manure. The key to good fly control with this system is consumption by every animal at the recommended 70 mg/100 cwt level. Thus it is less effective on range animals where unequal consumption of mineral usually occurs.

The oral larvicide will be most effective against the manure-breeding species, namely horn flies and face flies. It is ineffective against adult flies of all species and will slow the break-down of manure paddies in pastures. Producers may find that fly reduction is not commensurate with cost. This product should be used as an adjunct to good sanitation and other systems of fly control, not as a substitution.

## MILKROOMS

Use chemicals very carefully in the milkhouse or milkroom to avoid contamination of milk or utensils. Remove or completely cover all milk containers or other equipment before applying insecticides. Do not store insecticide containers in the milkroom.

The only material that is permitted for use as a space spray in the milkroom is 0.1 percent synergized pyrethrins. Minimal applications should be made as the oily deposit from repeated treatments is undesirable. Baited sprays and dry baits should not be used here.

Dichlorvos incorporated in resin (No-Pest) strips is permitted. One strip per 1,000 cubic feet will provide summer-long fly control in a well-screened milkroom.

## CALF FLY CONTROL

Backrubbers treated with 1 percent Ciodrin or 1 percent coumaphos (Co-Ral) in oil can be used to control horn flies on heifers on pasture. If you are following a once-a-week application on your milking herd, it will be least time consuming to treat heifers then. The once-a-week application should be used *instead* of backrubbers.

## AUTOMATIC SPRAYERS

Generally, automatic spraying devices may be a profitable investment for the Grade A dairy producer. Devices that usually work most effectively employ a quick-activated, direct pumping system. They can be triggered by treadle, electric eye, or wire sensors.

Nozzle arrangement should assure that the lower parts of the legs, as well as the top of the back, receive major treatment. We recommend ready-to-use, oil-base pyrethrins; dichlorvos (Vapona); crotoxyphos (Ciodrin); or a crotoxyphos-dichlorvos combination.

Treatments should be limited to 2 ounces or less per head per day and, if sprayed once a day, done in the morning.

## INSECT ELECTROCUTORS

With the widespread resistance of house flies to some insecticides, interest has increased in nonchemical control measures. One such measure is the use of insect electrocutors on barn windows and doors. These devices last several years and minimize the need for insecticide treatment. Their value depends on proper location and the numbers of flies in the immediate area. Sanitation measures must accompany use of the device.

## FACE FLY CONTROL

For face fly control procedures, ask for *Face Flies*, Entomology Fact Sheet 25.

Be sure to read the label on every chemical before mixing and using it. Never exceed the recommended dosages or rates and limitations. Avoid any unnecessary exposure to the chemical. Showering and changing clothes after use are wise safety precautions.

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