

## House Fly Control Guide

John B. Campbell, Extension Entomologist

Control and background of house flies are discussed here.

### Description

The adult house fly is dull gray, 1/4 inch long, with four distinct stripes behind the head. The abdomen is pale. The underside of the male is yellowish. The larvae are typical whitish fly maggots. The pupae are dark brown and 1/3 inch long.

### Life History

The house fly has complete metamorphosis: egg, larvae, pupae and adult. The life cycle from egg to adult can be completed in about two weeks during warm weather.

The house fly breeds in a variety of organic materials such as manure, garbage, sewage, food wastes, lawn clippings, septic tanks and silage. In warmer climates the house fly breeds throughout the year. In Nebraska it overwinters as a larvae or pupae under manure piles or in other breeding areas.

In milk barns, hog houses or confined feeding units that are closed and warm it may continue to develop during the winter.

### Economic Importance

The house fly is a common pest of city, urban and rural areas. Large numbers are an annoyance to man and animals. As urban areas encroach on agriculturally-zoned areas an increasing number of annoyance lawsuits are being instigated against livestock feeders because of flies, odor and dust.

The house fly can transmit more than 20 human and animal diseases. Mastitis, pinkeye, anthrax, typhoid fever, *Escherichia coli*, amoebic dysentery, tuberculosis, cholera, Newcastle disease and salmonella are some of the diseases affecting man and animals that can be transmitted by these flies.

The house fly is also the intermediate host for some roundworms and tapeworms of poultry. Large numbers of flies annoy feedlot or dairy cattle.

### Control

Sanitation is the mainstay of house fly control in and around the home or farm. Finding and eliminating breeding

places is an important first step in control.

The major fly breeding areas at feedlots and dairies are around bunks where feed spills, next to the feeding apron, under fences, along mounds, in debris basins that do not drain properly, along drainage areas, in sick pens, and around the horse stables of pen riders at the larger feedlots.

Fly breeding at dairies also may be found around forage racks and in calf hutch bedding. Other house fly breeding areas include feed storage areas, the drainage area of haylage or silage piles, and any other places spilled feed or manure accumulations are allowed to become moist.

Some operators store manure during the summer until it can be spread on fields after harvest. If this manure is not stacked and packed, with steep slopes to prevent rain penetration, fly breeding will occur in it.

Confined livestock units also may have house fly breeding problems if the animal waste is not properly managed. If the waste in the confinement pits is not agitated, a crust may form on the surface under which house flies are capable of breeding. Air or water can be used for agitation. However, if the waste material is not allowed to accumulate within a foot of the floor, the action of the material dropping into the pit may provide enough agitation.

Screening windows and doors helps keep flies out of milk barns, pig parlors and homes. Sticky traps at fly entrance points help reduce the number of flies getting into buildings.

Insecticide treatments include residual surface sprays, space or area sprays, wet sprays, baits, feed additives and pest strips. For specific insecticide recommendations consult EC1550, *Nebraska Management Guide for Control of Arthropod Pests of Livestock and Horses*.

Before using any insecticide, read and fully understand the label. Follow mixing directions, precautions, restrictions and storage instructions to ensure safe use of the insecticide.

House flies rest on sunny surfaces in the daytime, and tend to come inside buildings or under eaves to roost at night. Fly specks indicate where flies roost. These fly resting areas can be sprayed with residual or contact insecticides. The flies rest on the sprayed surface and pick up enough insecticide to kill them. The fly resting surfaces should be wet to the point of runoff, but not enough to form puddles.

Residual sprays should not be allowed to contaminate feed or water. Sunlight, high temperatures and rain cause residual sprays to break down or wash away, so treatment may have to be repeated at two- or three-week intervals.

Space sprays are insecticides with excellent fly knock-down properties, but they have little residual value; the spray

must contact the fly to be effective. These sprays are applied in and around swine, cattle or other livestock rearing facilities with mist blowers, hydraulic sprays, foggers or aircraft. Space sprays, since they have no residual value, may have to be applied at two- or three-day intervals during the fly season.

Insecticide baits can be used to aid in house fly control. The baits should be distributed along walls, window sills or other areas where flies congregate inside buildings, and in areas outside where flies congregate. Make sure the baits are inaccessible to animals or children. Liquid baits can be applied to burlap bags, papers or other removable surfaces, or sprayed on walls or ceilings where flies rest. Baits by themselves seldom achieve fly control, but should be used in conjunction with residual or space sprays.

Because of the high reproductive rate, short generation time and genetic diversity, house flies have the innate ability to develop resistance to pesticides rather quickly. It is, therefore, advisable to rotate insecticides periodically, at least seasonally. Ideally, the rotation would replace an insecticide of one chemical class with one in a completely different class. A chlorinated hydrocarbon (methoxychlor) would be replaced with a phosphate (raben) which, in turn, would be replaced with a synthetic pyrethroid (permethrin).

Feed additives are insecticides that may be incorporated into animal feeds. The insecticide passes through an animal's system and is available in the manure to destroy developing fly larvae. These can be effective in controlling flies if animal wastes other than fresh manure are cleaned in a timely basis. The insecticide in the manure decomposes too rapidly to be effective for periods of more than a few days.

Pest strips and sticky traps can be used inside buildings (usually around doorways). The label on the no-pest strip indicates use restrictions and number needed for area of space. There also are timed release mechanisms available commercially which release pyrethrins (botanical insecticides) at certain intervals.

Biological control, if efficient, would be an additional fly control method to add to the cultural (sanitation) and insecticide control program. Small parasitic wasps (pteromalids) are sold by several commercial firms. These wasps parasitize (kill) the pupal life stage of house flies and, less successfully, stable flies.

However, Nebraska research with these commercially available wasps has failed to demonstrate effective control. We believe effective fly control will require the utilization of parasitic wasp species native to Nebraska.

## **Index: Insects and Pests Livestock**

Revised March 2006

Extension is a Division of the Institute of Agriculture and Natural Resources at the University of Nebraska–Lincoln cooperating with the Counties and the United States Department of Agriculture.

University of Nebraska–Lincoln Extension educational programs abide with the nondiscrimination policies of the University of Nebraska–Lincoln and the United States Department of Agriculture.