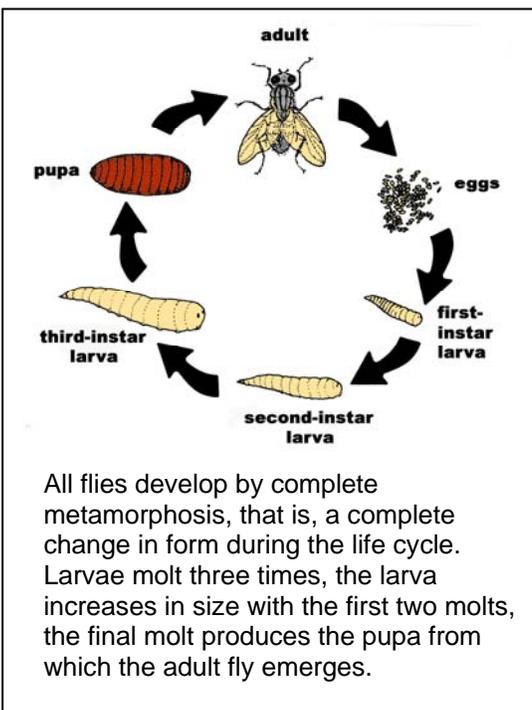


# Managing Flies Associated with Livestock

There are two common problems associated with keeping horses and other livestock: flies and odors. Both can be minimized with proper manure management. The very presence of flies, especially in high numbers, is annoying. Biting stable flies are a significant irritant to livestock, damage from continued fly specking may decrease property values, but most important, flies are of potential public health significance.

Although there is no simple solution, good sanitation practices employed in keeping animals can significantly discourage fly development and keep odors at a minimum. Understanding the life cycle of flies and knowing the conditions necessary for them to breed are the most important steps in preventing fly problems.

Flies require food, moisture, and warm temperatures to survive and breed. Animals provide the food and moisture from their manure and urine, and the southern California climate provides warm weather throughout much of the year. The house fly is one of the most common pests of livestock facilities. One reason for this is that it can complete its life cycle in as little as 7 days.



**Fly breeding can be effectively managed** by cleaning stalls and paddocks on a daily basis. Clean beneath fences, mangers, water troughs, and in corral corners. Pay special attention to areas soaked with urine. In smaller operations, the collected manure can then be stored in fly-tight containers until removed from the premises, preferably on a weekly basis. This type of routine removal of the manure will effectively disrupt the cycle of flies commonly associated with livestock manure.

It must be stressed that daily removal of manure does not necessarily accomplish the goal of fly management. If the manure becomes infested with larvae, it is still a potential source for fly development. If the material cannot be stored in fly-tight containers or removed from the premises, it must be immediately spread in a thin layer to permit quick drying. This process will effectively destroy eggs, as well as first and second growth stage larvae. The dry manure can then be safely tilled into soil or stored for later removal.

Manure can also be composted, but for a reusable product or accelerated processing, the large clumps must be broken apart prior to composting. The temperatures which occur within the center of a properly maintained compost pile will effectively kill all eggs, larvae, or pupae. Routine turning of the manure is essential, not only for rapid decomposition and heat buildup, but also to prevent the breeding of blood-feeding stable flies, which can develop within a compost pile when it is not properly tended. Water may also need to be added to prevent premature drying. Additional information on the rapid composting method can be obtained from the Vector Management Program.

Although all manure must be removed from the premises as often as necessary to prevent fly breeding, temporarily placing fresh manure beneath a tarp and securing the edges with soil has been shown to be partially effective in killing developing larvae. Temperatures which build up

beneath the tarp during the composting process will effectively destroy eggs, young larvae, and pupae. If fly development continues in areas which do not achieve the maximum temperature, the fully developed larvae can easily crawl beneath the edges of a tarp and deposited soil to pupate in protected sites up to 20 feet away. If fly development continues beneath the tarp, discontinue this method.

**Additional steps must be undertaken** to eliminate other potential fly breeding sites. Remove damp or spilled feeds from beneath feed bins. Cover and stack hay in dry areas or locations with good drainage. Remove any hay spilled around the stack to prevent its accumulation. Hay and straw which remains moist from water or urine may produce house flies, but can be an ideal breeding site for biting stable flies. Remember that moisture allows flies to breed, so check for leaky faucets, automatic watering devices, and troughs.

**Various traps can be used** to reduce the number of adult flies in the immediate area. Products such as sticky fly strips and cardboard tubes covered with a layer of adhesive can be hung in locations where adult flies are observed to congregate during the day. Evening resting locations can also be highly successful trapping sites. Favored gathering or resting areas are the ceilings of barns, stalls, and covered corrals, where the deposits of fly vomit and liquid waste (specking) indicate frequently used surfaces. Some traps use an odor attractant to entice flies into the container, but may attract far more flies to the area than normal. Check all traps frequently and replace as necessary.

Outdoor flying insect light traps can also be used effectively in some situations. Since flies associated with livestock are active during daylight hours, program the trap to turn on before dusk and to turn off when it becomes dark. The illuminated trap will then attract flies in the immediate area that are seeking a night resting site. Place the trap only in areas where evidence of specking indicates heavily used night or day resting sites. It should be noted that controlling adult flies in the immediate area rarely results in eliminating the infestation.

Soil additives such as food-grade diatomaceous earth, hydrated lime, or Sweet PDZ can be sprinkled onto urine soaked soil to help manage fly breeding by altering the composition of the soil as well as accelerating moisture absorption and ammonia removal. Nematode formulations, which also help control larvae, can be purchased at nurseries and garden supply stores. Extremely small wasps which parasitize fly pupae can also be purchased from suppliers and laboratories which specialize in biological control measures. There are no chemical pesticide products which are labeled or formulated for the control of fly larvae.

#### **Sanitation is the Key to Fly Control!**

- Effectively manage manure
- Keep corrals and stable areas properly graded and filled
- Prevent leaks in faucets, automatic water dispensers and troughs
- Remove urine-soaked bedding daily or spread to dry
- To control odors and manage moisture, apply additives to urine-soaked soil

**Remember: The key to effective fly management is to identify and eliminate all breeding sources.**

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