



ENTFACT - 501

MANAGING PYRETHROID-RESISTANT HORN FLIES

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Development of insecticide resistance in a pest, such as the horn fly, is a selection process similar to that used by the producer to improve a herd. Producers carefully cull animals with undesirable traits and keep the best stock to improve the herd. If the same producers also keep using certain insecticides over and over, they cull horn flies that are susceptible to the product. Flies that survive the treatment breed and produce offspring that are resistant. The result can show up as a control failure; that is, the product that gave good control in previous years no longer kills flies.

Resistance has developed at several locations in Kentucky where cattle ear tags impregnated with synthetic pyrethroid insecticides were used for 2 or 3 consecutive years. So far, no resistance problem has been seen with organophosphate insecticides, which attack a different site in the nervous system of the horn fly.

Researchers from Kentucky, several other states, and the USDA, have developed the following list of suggestions to follow in horn fly control programs.

1. Horn fly treatments are not automatically needed. Most researchers agree that an average of less than 100 horn flies per side on an animal will not cause a measurable weight loss.
2. Target lactating cows and growing calves. The greatest potential for loss to horn flies appears to be with lactating cows and growing calves.
3. Begin treatment when there are an average of 100 or more flies per side. This may not occur until early to mid-June. Treating too early, especially with ear tags, may mean poor control in late summer when the flies are most abundant.
4. Rotate synthetic pyrethroids with organophosphates. Avoiding continued use of a particular type of insecticide reduces the chance selecting for resistant flies. ENT-11, Insecticide Recommendations for Beef Cattle, provides information on products and application alternatives.

5. Change application methods regularly. Use dust bags, back burners, or sprays rather than relying continuously on ear tags. Continued use of any insecticide in a slow release form (ear tag) may eventually lead to resistance.

6. Remove insecticide ear tags in the fall before the first frost. This reduces the amount of time that flies are exposed to a product and allows the number of susceptible flies to increase.

The incidence of confirmed problems with pyrethroid-resistant horn flies in Kentucky has been very low. Use of the suggestions presented above should minimize the potential for future problems. Should resistance develop, these suggestions are the only way to obtain satisfactory control.

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