

1996 Fly Survey
Humboldt County
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Farm Advisor

Nancy Hinkle, Extension Entomologist in Riverside, organized a statewide fly survey in 1996. I participated in the survey by recording fly number from the cow herds on three different ranches. One ranch was in the Blue Lake area, one near Holmes, and one near Bear River.

The purpose of the study was to determine how populations of stable, horn, face, horse or deer, and heel flies build in numbers through the spring and summer and decrease in the fall. By knowing when populations are at peak levels, insecticides can be applied to give the greatest control of the flies. I counted flies on the three ranches on a weekly basis starting March 20 and finished the second week in November.

Another part of the survey was to collect horn and face flies from the cows, and a field test was conducted to see whether the flies were developing a resistance to either pyrethroids or organophosphates--these are the main two types of insecticides used in fly control. As you may know, face and horn flies have developed resistance to certain types of insecticides in some areas of California.

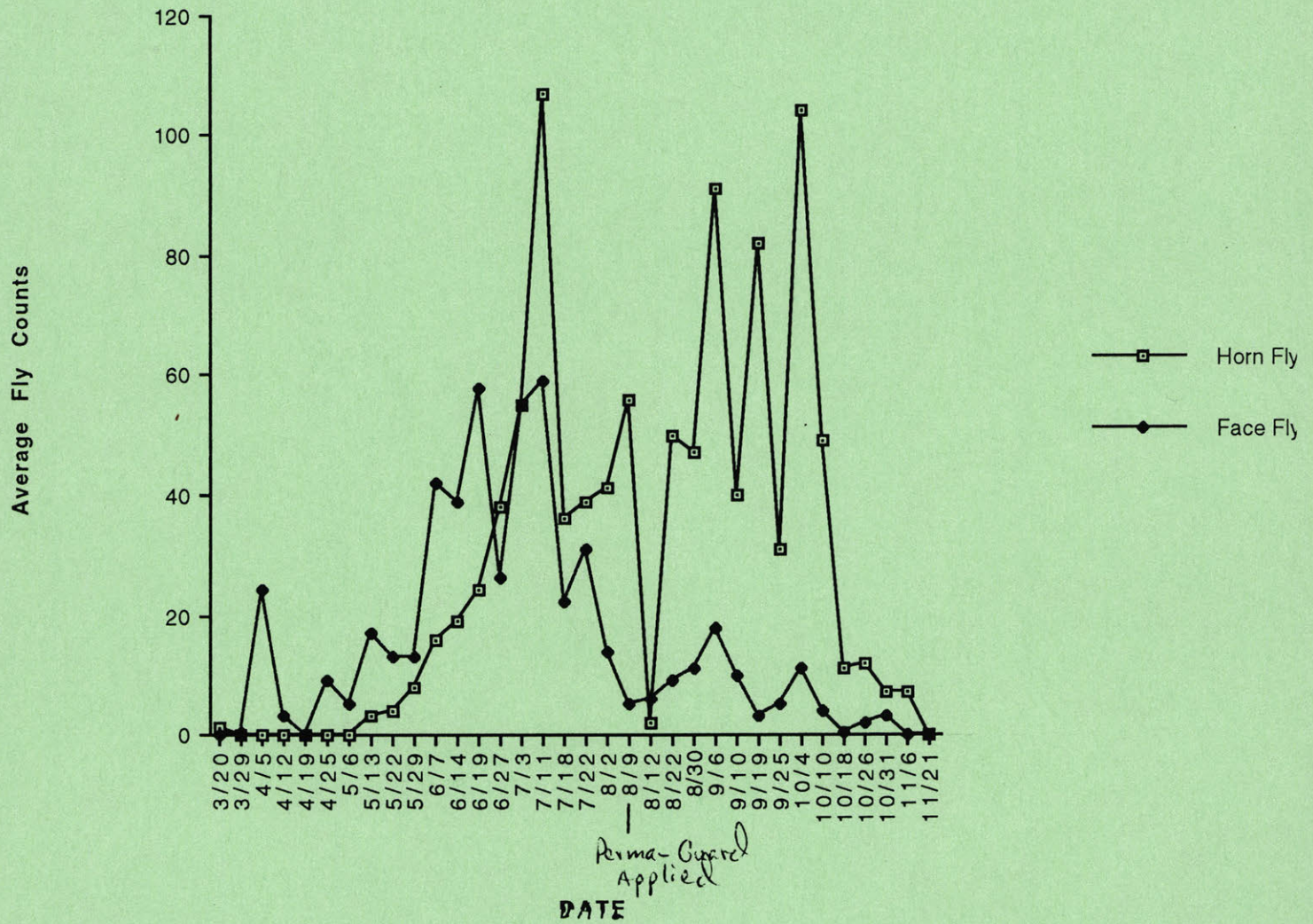
During the survey the three ranch operators conducted their normal fly control practices. The following three graphs show the averages of the weekly fly counts, and what effect control measures had on fly numbers.

A field test for insecticide resistance was conducted on two of the three ranches. We couldn't get enough flies to run the test on the Bear River ranch. I found that a resistance to pyrethroids was starting to build on the ranch near Holmes. The ranch near Blue Lake didn't have any flies that were showing resistance to either of the two types of insecticides.

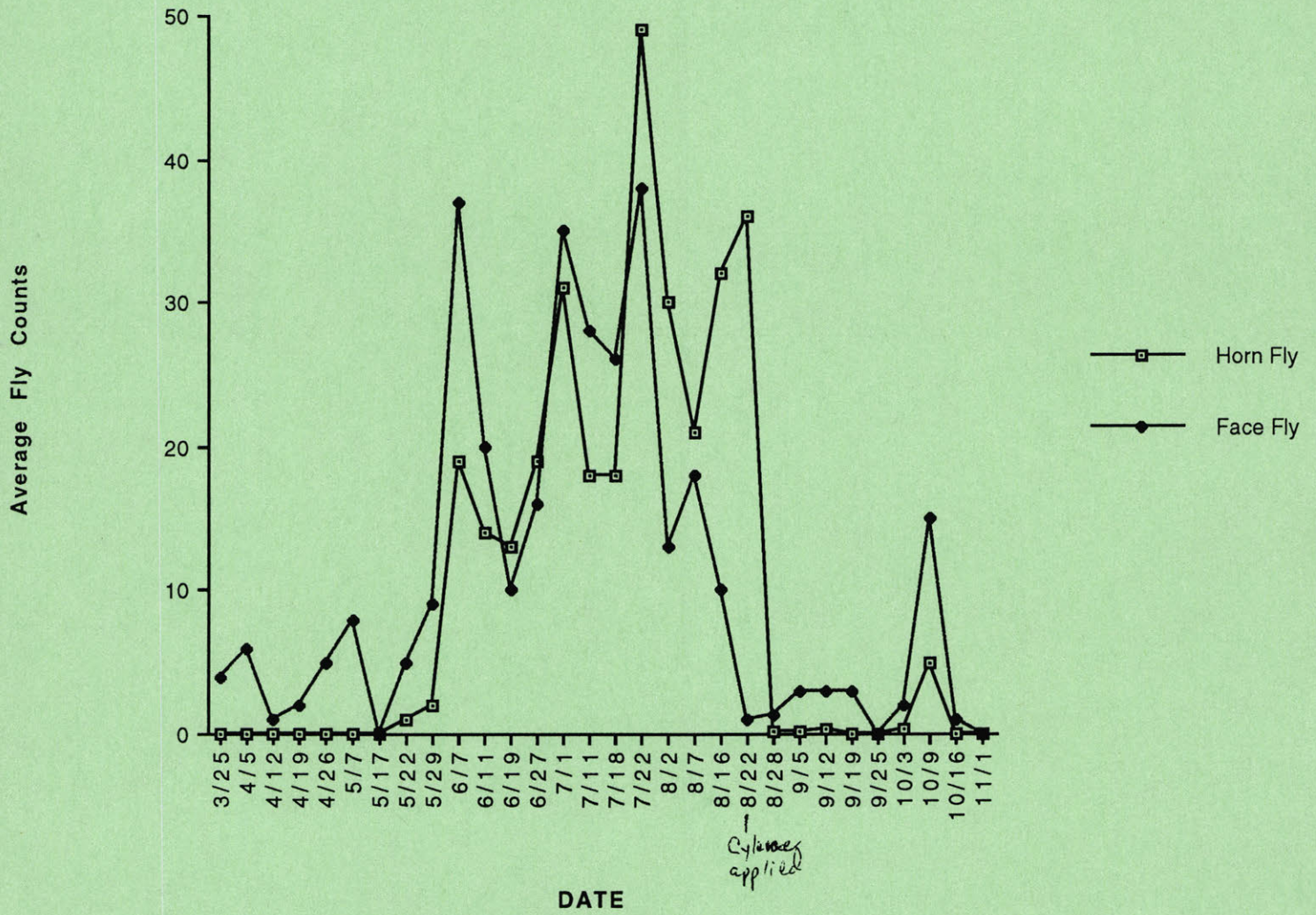
Some observations I made on the survey included:

- there were differences in individual cows as to the number of flies they had on them at any one time, i.e. on one daily count one cow had 0 flies and another had 100 flies--the balance of the cows had fly numbers in between these numbers
- sunny, warm days increased fly numbers
- ranches closer to the coast had less flies than further inland

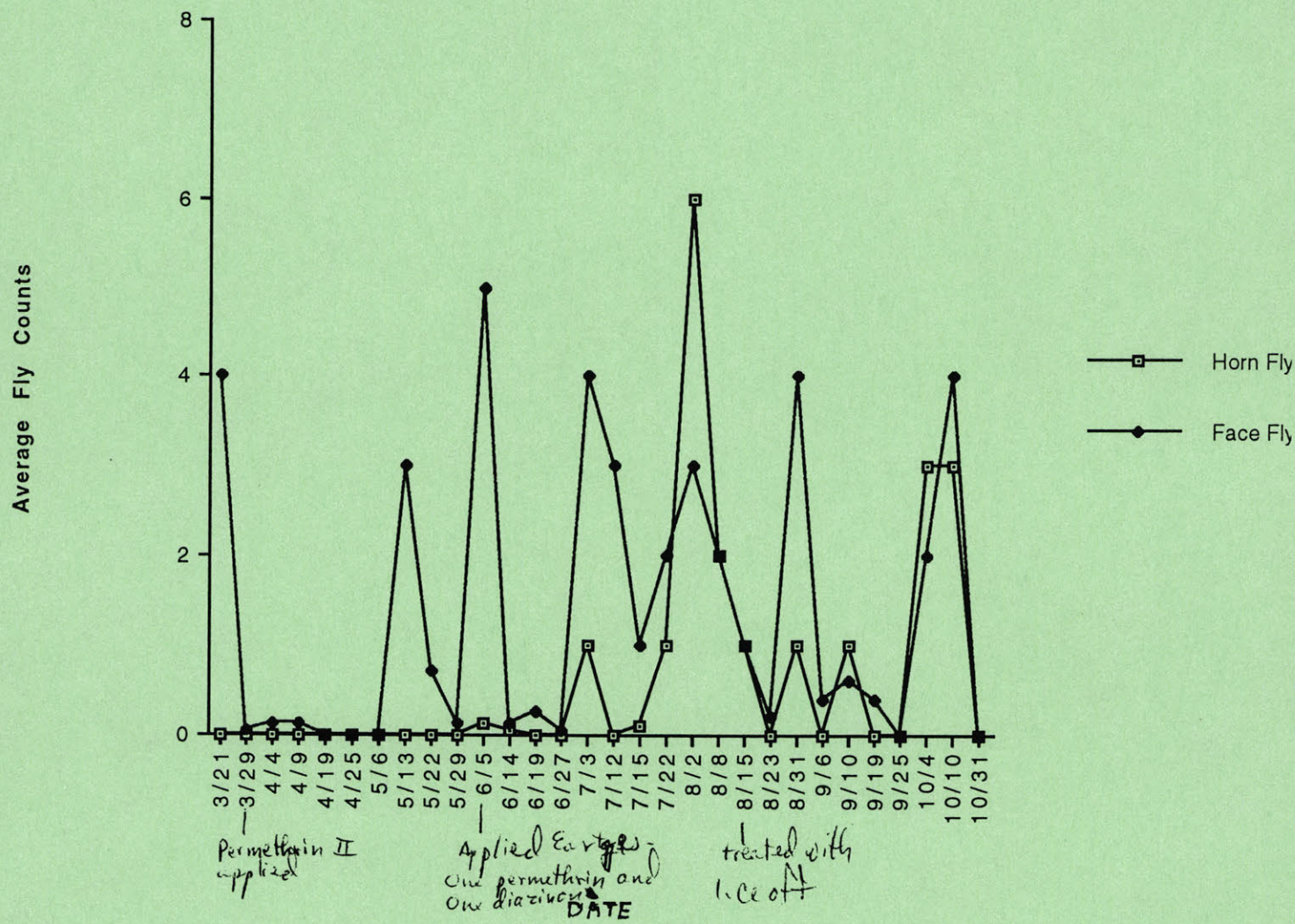
Holmes Ranch



Blue Lake Ranch



Bear River Ranch



Stable flies

Stable flies are about the same size as house flies and look very similar; but stable flies have piercing-sucking mouthparts for drinking blood. The adult flies feed primarily on the legs of animals, causing stamping and kicking. Stable flies feed with the head up and wings pointed down.

Total counts of flies visible on the front legs will be made. Stable flies spend very little time on the animal, merely flying in to get a bloodmeal, then flying off to digest it and produce eggs. This means that at any given time only a small fraction of the population will be found on the animals.

Horn Flies

Horn flies are about half the size of house flies. They feed on the trunk of the animal, seldom being found on the legs or head. When numbers are high, clouds of horn flies will be moved by the animal's swishing tail, returning to settle seconds later. Adult horn flies spend their entire life on the animal, with the females leaving only for the few seconds it takes to lay a batch of eggs in fresh manure.

Counts of horn flies on one half of the animal's body will be made. Early in the day when temperatures are still cool, most flies will be on the topside. During the heat of the day, most of them will move to the belly. So it is important to kneel and check for flies along the midline, especially around the umbilicus. As the animal's movement (tail switching, licking, and twitching) will keep the flies moving, it is important to pick a time and rapidly make counts, before the population shifts again.

Face Flies

Face flies are almost identical to house flies, both in size and color. They have mouthparts similar to house flies' with which they feed on secretions from the eyes, nose and mouth. Face flies are found almost exclusively around the head. They do not spend a great deal of time on the animal, so only a portion of the population will be on the animal at any given time.

Total numbers of face flies on the head of the animal will be counted.

Horse or Deer Flies

Horse flies are big flies with large eyes giving a "Darth Vader" shape to the head. They typically hold their wings in a V-shape, looking somewhat like the swooped-back wings of a jet. Deer flies are typically smaller and are characterized by brightly colored eyes, with iridescent patterns.

Heel Flies

Heel flies are robust flies that lay their eggs on the hind legs of cattle. The resulting larvae form warbles along the backline of the cattle. These pests will be monitored by observing the behavior of the cattle; gadding is the behavior of cows trying to avoid these flies.