

Vesicular Stomatitis: Insect Control

In Colorado as of September 16th there were 83 VS positive horses and 1 VS positive beef cow. Although no dairy cow has been V.S. positive to date this year, the fall is no time to let down the guard against potential infection. In 1995 new cases were appearing into October. At the August Dairy Producer's Seminar held at CSU Dr Wayne Cunningham was asked about prevention since there is no vaccine available in the U.S. for this outbreak. He reiterated that insect control and biosecurity efforts are the most important measures.

In past V.S. epizootics the New Jersey strain has been isolated from black flies, midges, house flies, mosquitoes, eye gnats and sand flies. Black flies are believed to be the most important for transmitting V.S.

According to Dr Whitney Cranshaw from Cooperative Extension at CSU, black fly control is very difficult due to the highly migratory adult stage and extensive breeding habitat. Black flies develop in cool, running water particularly where there is trailing vegetation. Thus, even rivulets formed by the flooding of fields are primary breeding areas. The life cycle is about 3 weeks from egg laying to mature adult. Populations can grow rapidly because each adult female lays several hundred eggs and multiple generations are produced between late spring and summer. Adults commonly fly many miles from larval breeding sites. In Canada migrations of nearly 70 miles have been reported.

Attempts to limit black flies on your dairy should involve a two-fold plan: 1) eliminating breeding sites and controlling larval stages, and 2) decreasing adult numbers. It is important to realize the strategy for these two steps must be different. Larval stages can be controlled by eliminating breeding sites or treating breeding sites with a bacteria which kills the larvae. It is unacceptable to use a spray aimed at killing adult flies on the waterways for two reasons. Foremost, most such insecticides are highly toxic to fish and, secondly, the pyrethrin insecticides are rapidly inactivated when in contact to organic material. Larvae are controlled by adding

Bacillus thuringiensis var. *israelensis* , tradename Bactimos or Vectobac, in a very specific recipe to flowing waters.

On the other hand, adult black flies may be eliminated with a pyrethrin spray labeled for livestock. Area-wide suppression of adult black flies is difficult because of their migratory nature. New populations may appear just when you think you have eliminated the problem. Black flies are day feeders and biting attacks tend to show some periodicity. Adults feed around face and eyes during mid-morning and then in the evening, ending at dusk. However, during overcast days feeding may persist all day. It may be feasible to stable the cows in screened barns during feeding times.

Control of black flies is a difficult problem. Those readers with more questions may contact the State Extension Agent, Entomology Specialist, Dr Whitney Cranshaw at 970-491-6781.