

New Approach For Apple Growers

Stethorus punctum, the tiny black ladybird beetle that can devour 75 to 100 plant-feeding mites per day, is making it possible for numerous Pennsylvania apple growers to greatly reduce spraying with miticides in orchards, entomologists of The Pennsylvania State University report.

Such use of natural predators in apple orchards could be a real boon to apple growers, according to Dr. Richard B. Colburn and Professor Dean Asquith, entomologists at Penn State's Fruit Research Laboratory at Biglerville, Adams County. They said recently that some 2.4 million dollars is spent annually in Pennsylvania to control insects, mites, and diseases associated with apples. Pennsylvania ranks in the top five states in annual apple production, averaging 12 million bushels per year.

The ladybird beetles were found in 27 apple orchards monitored during 1974 in 11 counties as part of the Pennsylvania Pilot Apple Test Management Project. In the 27 orchards there were ample ladybird beetles to aid substantially in mite control.

Ladybird beetles live and reproduce best in orchards that are operated on an integrated control program. This means coordinating two or more techniques of pest control to avoid complete reliance of any one method. Spraying with chemicals must be harmonized with biological control of mites by the tiny beetles. To date, Stethorus punctum is the only mite predator found in sufficient numbers in orchards operated on an integrated control program to assist in mite control effectively.

Colburn and Asquith are associated with the Agricultural Experiment Station at Penn State. With

the cooperation of several innovative apple growers in southern Pennsylvania, they and their fellow workers were the first group in the eastern United States to develop integrated pest control on apples. These experiments had their beginning in 1968. Many of the same growers now cooperate with Penn State and the Pennsylvania Department of Agriculture on the Pilot Apple Pest Management Project initiated in 1973 with funds from the U.S. Department of Agriculture.

Fruit growers using integrated control of pests have found they must leave some mites for Stethorus punctum beetles to feed on. The tiny predators disappear when the mite population becomes too low. For this reason, many orchard owners like to use a mite suppressant such as dinocap. This material keeps mites in check, a form of

management rather than elimination—thereby encouraging the increase of Stethorus in apple orchards.

Indications are that apple orchards with at least five mites per leaf will keep Stethorus punctum active. These shiny black beetles, about four times the size of a pinhead, feed on all stages of mites. Both the larval and adult stages of the beetle feed on mites.

The beetles become active in apple orchards from mid-April to mid-May which is close to the time the European red mite and two-spotted spider mite begin to emerge.

Stethorus punctum adults overwinter in and near the orchards. If they remain in the apple orchards they are beneath the fruit trees under leaf debris. They move into the trees during the spring, feeding on mite eggs left from the previous season. Eighty percent of the adult beetles hibernate within 3

Hog Farrowing System Offered

Big Dutchman has introduced an improved hog farrowing system for confinement hog production. Mortality rates in the

feet of the trunks of the trees. Thus, fruit growers are advised to delay cultivation under the trees until mid-May, after the beetles have emerged into the apple trees.

Carrying out an integrated insect control program is not as simple as operating a standard chemical control program, Colburn and Asquith point out. The grower must arrange a careful balance between protecting the apple crop and the trees from injury by insects, diseases and mites, while at the same time not harming Stethorus life stages.

farrowing house are of prime consideration to the hog producer. The new Big Dutchman farrowing system, when used with electric heat mats in the floor, properly placed slatted floor and ventilation system, can provide a farrowing arrangement for significantly reducing mortality rates. Diagram A shows how pigs are born on the aluminum slatted floor section of the unit. They immediately seek the comfort of the first heat mat which is located only inches away. A day later, when this mat is turned off, they are lured to the warmth of the second heat mat, which is located at the head of the unit. By nesting on this mat, pigs quickly form the good dunning habit vital to a disease-free environment. Heat mats in the creep area not only will add to the discomfort of the sows but will provide the accustomed warmth the pigs received while in the sow's womb. Thus the pigs are warm while the sow is comfortable.

The system's farrowing unit also offers distinct value in terms of strength and flexibility to the producer. Draft panels are embossed for maximum rigidity and the edges are reinforced to assure stability. To prevent the unit from bending and coming apart 17 gauge square steel tubing is welded in a unique frame without nuts or bolts or rough joints. For animal-handling ease, the doors are designed to open from either end and the special feeder pack door is adaptable to either dry or liquid feeding. An adjustable sow rail of double thickness with special thumb spin fasteners that require no tools for adjusting and a back-up bar are also provided with the unit.

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Complete information on the Big Dutchman Farrowing System can be obtained by writing to Swine Department, Big Dutchman, 200 No. Franklin St., Zeeland, Michigan 49464.

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