

Face Fly Control Research Is Making Progress At Penn State

Scientists are coming closer to control of insects and pests by means other than the use of sprays, researchers from Penn State University said today during the annual meeting of the Eastern Branch of the Entomological Society of America. This so-called "biological control" may someday eliminate the face fly, a common pest among cattle, announced Sik-Chung Tung and Tien-Hsi Cheng of Penn State.

The Penn State scientists said they found a period in the pupal or intermediate stage of the face fly when sex identification is possible with the naked eye. To do this, the pupae must be made somewhat transparent and should be well cleansed of film and bits of organic matter. The findings of Tung and Cheng are a new approach to control of face flies and related insects.

Clean pupae can be separated into age groups by sex. Then the males can be more easily irradiated, making them sterile. When released the males mate with females but produce no offspring since the eggs are not fertilized.

The problem is to select male fly pupae at a proper stage of development for irradiation and release as adults. Mr. Tung, a Ph.D. candidate in entomology, and Dr. Cheng, head of zoology at Penn State, centered their comments around the methods they have developed for cleansing the larvae.

The Penn State found that a common household detergent at low concentration has proved to be an effective cleansing agent that neither shortens the lives of the insects nor reduces their usual activity.

Fly populations often are reared in biological laboratories. The classic method of separating males from females is to immobilize the insects with low temperature or carbon dioxide, or by other means, and to remove desired specimens with the aid of a microscope. This involves time-consuming handling in which both sexes of the flies often are injured. It is believed the Penn State method will help solve such problems.

Other species of flies have

been reduced in number, even exterminated, by the sterile-male method of control in which irradiated males are released. Since females of some species mate only once in their lives, matings with irradiated sterile males produce no offspring and become an important phase of biological control.

Did you know — The Hemlock was adopted as the official State Tree in 1930, and the Mountain Laurel was designated to be the official State Flower in 1933.

● Farm-City (Continued from Page 13)

er degree than ever before," the director said.

By the year 2000 — a little more than three decades from now — the population of this nation is expected to be 300 million, he added. Our population in and near cities will double, we will need twice the amount of water, we will double the number of new homes built since World War II, and we will need additional highways for three times the number of cars we have today. This tremendous expansion of population, bringing with it all the increased demands for food and facilities, will require close cooperation and coordinated efforts on the

part of farmer and nonfarmer alike.

Mr. Patton, who is a former State Farm-City Week chairman, reports that behind every two farm people, there is one urban person providing the materials to keep farms functioning. The city dweller expects and gets an extremely wide variety of quality foods and fiber, packaged attractively, marketed efficiently, and presented conveniently at reasonable prices.

Despite slight increases in food prices, an honest analysis will support the fact that food is the nation's biggest bargain today. Food expenditures are currently taking slightly more than 18 percent of the average family income. In 1950, food took nearly 25 percent. As recently

TAKE SOIL SAMPLES
Fall is an ideal time to take soil samples to determine next year's needs for lime and fertilizer, suggests James H. Eakin, extension agronomist at Penn State University. If these samples are taken now, there will be plenty of time to order correct fertilizers and take advantage of early-order discounts.

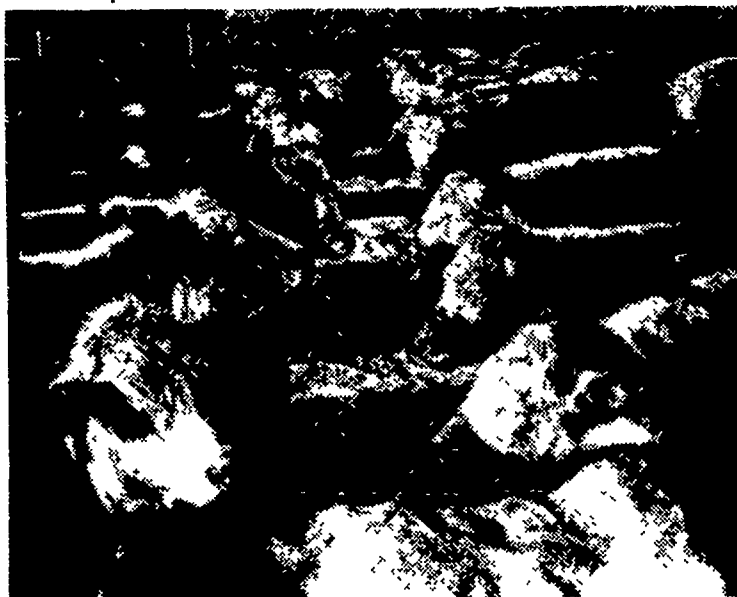
as 1960, the figure was 20 percent.

"The path between farm and city is a highly traveled two-way street. We all live at some point along this street. The more we can learn about each other from Farm-City Week programs plus year-round activities, the better the prosperity will be for the entire community," Mr. Patton said.

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