


Poultry Science Capital Region Veterinary Science

Penn State

Poultry Pointers

Entomology Food Science

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BIOLOGICAL CONTROL

Dr. Charles W. Pitts
Professor of Entomology

Proper cultural practices encourage poultry manure accumulations containing populations of beneficial predators and parasites that can suppress house fly populations.

In the Northeast, macrochelid mites and hister beetles are the major predators in caged-layer operations. Parasite populations, of major importance in the southern United States, are present at lower densities. Less is known about the role of parasites in suppressing fly populations in poultry houses in the North.

The macrochelid mite, *MACROCHELES MUSCAE-DOMESTICAE*, is the most common mite in poultry manure. The reddish-brown mite, slightly less than 1/16-inch in size, feeds on house fly eggs and first instar larvae. It can consume up to 20 house fly eggs per day. Mites are found on the outermost layer of the manure, particularly its peak. Macrochelids can cause substantial reductions in house fly numbers, but large mite populations are required for any appreciable impact. Efforts, therefore, should be made to conserve natural populations present in the manure. About 3-4 weeks of manure accumulation is necessary for mites to become established.

Another mite that may be found in poultry manure is the uropodid mite, *FUSCUROPODA VEGETANS*. It feeds only on first instar

fly larvae deeper in the manure, complementing the egg-feeding activity of the macrochelid mite on the manure surface.

The principle hister beetle in northeastern poultry houses is *CARCINOMAS PUMILIO*, a small black beetle approximately 1/8-inch long. It feeds on house fly eggs and first instar larvae. The potential as a predator appears similar to the macrochelid mite. Adult and immature hister beetles live in the surface layers of the manure and forage for fly and mite prey. Like macrochelid mites, hister beetles do not seem attracted to fresh manure and it may take six weeks for significant populations to develop. Another hister beetle, *GNATHONCUS NANUS*, is also present at lower numbers on poultry farms in the Northeast.

Tiny stingless parasites attack most of the common manure breeding flies. Parasites are rarely noticed because they are extremely small (1/16-1/8-inch) and can occur naturally in low numbers on many farms. They live in manure or other decaying organic matter and search for pupae. Adult female parasites lay an egg in the puparium where the developing parasite larva consumes the pupa and emerges as an adult parasite.

Because of naturally low parasitism levels, control programs have been based on mass releases of laboratory reared parasites. Some parasites are available from commercial insectaries. For a release program to be successful, the producer needs to consider which species and strains, and in what numbers, to release. Parasite strains must be climatically

Forest Stewardship Workshop

Set In Urban Area

MONROEVILLE (Allegheny Co.) — If you own forestland in rural Pennsylvania but live in the Pittsburgh metropolitan area, you won't have to travel very far to attend a forest stewardship workshop this winter.

The first *Forest Stewardship Landowner's Workshop* in a major urban area will be held from 8 a.m. to 4 p.m. at the Palace Inn in Monroeville on January 23.

Jon Kolb, former offensive lineman of the Pittsburgh Steelers and a Pennsylvania forest landowner, will kick off the program with an introductory speech. The workshop is sponsored by the Pennsylvania Forest Stewardship Program in cooperation with The Western Pennsylvania Conservancy, Pennsylvania Environmental Council, the Frick Nature Center, the Audubon Society of Western Pennsylvania, the Ruffed Grouse Society, and Westmoreland Woodlands Association.

If you're interested in forest resource management and conservation, you won't want to miss this opportunity. The workshop will cover forest management planning, wildlife habitat management, biodiversity, timber taxes, estate planning, and other subjects useful to woodlot owners. The \$15

fee covers lunch and a snack. A comprehensive notebook of stewardship related materials will be offered for sale separately.

"Did you know that one out of every 10 families in Pennsylvania own forestland?" asked Dr. Stephen Jones, assistant professor of forest resources at Penn State and coordinator of the Forest Stewardship Program's educational component. "Stewardship workshops are a vital way of getting the message of sound forest management out to forest landowners across the state. The Pittsburgh workshop is a way to reach landowners who often have been left out of the information loop because they don't live on or near their woodlands."

"Over the years — and sometimes through past mistakes — resource managers have learned a great deal about using forests for multiple benefits without destroying the complex and delicate balance among the plants, animals and natural forces in a forest ecosystem," said Yuri Bihun, Penn-

sylvania Forest Stewardship Program associate.

"A forestland owner can reap the economic benefits from timber harvesting without sacrificing the forest's other benefits, such as air and water purification, soil conservation, wildlife habitat, and recreational and aesthetic values," Bihun said.

At the workshop, landowners will learn about another program component which gives forestland owners technical and financial assistance in designing and implementing sound forest management plans.

"The more people who get involved in the program, the better chance Pennsylvania has to leave a legacy of healthy, productive forests for future generations," Jones said.

For more information about the Pittsburgh workshop, contact: Eric Oesterling, Westmoreland County Cooperative Extension, P.O. Box 250, Greensburg, PA 15601-0250, (412) 837-1402.

Pork Industry Representative Wanted

HARRISBURG (Dauphin Co.) — Pennsylvania Pork Producer Council is seeking individuals to serve as a pork industry representative. Applicants, male or female, should be between the ages of 18 and 23 years old. Participants should have a strong background and sincere interest in the future of the pork industry. The selection process will be completed at the Keystone Pork Congress, Harrisburg, on February 17.

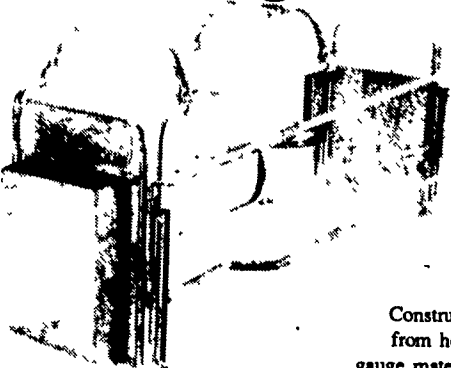
The selection process will

include personal application and interview. The pork representative must be able to attend the Pork Leadership Institute on July 15-20 in Des Moines, Iowa. The attendee will expand their communication and human relation skills by attending state activities such as conferences, media interviews, service on state committees, boards, and county programs. For more information, call Floyd Huber, youth committee chairman (215) 944-6687.

adapted to the planned release area. Parasites currently offered by commercial insectaries have problems maintaining pure cultures. Most producers should concentrate on conserving and building their native predator and parasite populations by using proper management techniques and by minimizing insecticide use.

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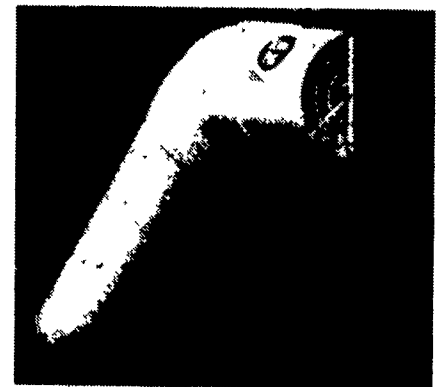


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