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case) that tends to spike about this period," said Ziegler.

In this case, there has been a decrease in the number of IB cases since last year. In broilers, there has been six cases from November 1995-February 1996, in roasters one case, and layers one case. All are confirmed cases. Of the broilers, four of the six have been typed.

For IB, there have been 12 suspected cases. For a number of reasons, according to Ziegler, the laboratories have not been able to isolate the viruses. The reasons given have been the length of time of exposure to the flock of the virus, the incorrect sample of birds, and so on.

Of the four confirmed cases, three of them had an "untypable" strain, and several — Mass., Conn., and Ark. types — have been ruled out. Most confirmed cases have been Del. 072 and field strains.

The signs of IB include foamy air sacs. In many cases, the secondary infections, such as e. coli and others, create the biggest problems. Most companies are using vaccines, either a Mass. or Conn. at the hatchery, or field boosts at 14-16 days of age, "sometimes older if they're going for roasting birds," said Ziegler.

Another challenge for producers

has been fowl pox. "Fowl pox is a problem we've been seeing a fair amount of in the past year," he said. "This is typically a problem with layers, birds that have been in production. Typically we see this problem after about 40 weeks or so of age."

There are two forms of fowl pox, including the cutaneous, or skin form, and the diphtheritic, or wet form.

In the skin form, there are evident scabs or crusts on the comb, wattles, and face of the birds. In the wet form, there is material in the mouth of the birds, usually in the trachea or the esophagus as well.

In the past year, New Bolton has diagnosed 18 cases of pox in layers. Both the skin and wet form of the disease have been seen and producers can have both in the same flock.

Clinical signs and lesions are "typical," said Ziegler. They include nodules above the eyes of the birds, "probably the beginning of problems," he said. A more moderate case would include raised, proliferative nodules on the wattles, face, and comb as well, which can get significantly worse. Nodules can also appear in feathered areas as well.

Diagnosis can often be confusing because of the similarity with tracheitis. A histo-

pathological evaluation is required.

Various vaccines can be used to battle fowl pox. There are four different types — a fowl pox vaccine, a combination fowl and pigeon pox, a quail pox (used by North Carolina turkey growers), and a canary pox (used by turkey growers).

New Bolton is working on a research project with a grower to evaluate the way the fowl pox virus gets into the bird and what it does when it's inside. They are seeing if the same virus can be used to infect the combs as it can the trachea. They're looking at the DNA of the tissue isolates. They're also evaluating the company's vaccine procedures to "establish for the company what the best vaccine protocol and protection is (for the birds)," said Ziegler.

Several common tumor virus diseases are under research at New Bolton. One of those is lymphoid leukosis, tumors that appear in the liver, spleen, and kidneys, but no enlarged nerves. Also Marek's Disease is under investigation, similar to lymphoid leukosis, but with the nerve involvement. A sign of Marek's Disease, which affects broilers, is a raised "plaque" on the surface of the skin on birds. Also, there is enlargement of the

sciatic nerve, along with the plaque and nodules on the skin. One type of infection is called "grey eye," with tumors creating a white appearance in the iris of the bird.

Another tumor disease is reticuloendotheliosis, which often doesn't involve visceral tumors. But researchers have been seeing some quite prominent ones. The disease resembles Marek's Disease, but there's a less common immunosuppressive form where it doesn't show up as any obvious lesions. However, birds can fall prey to other infectious, secondary diseases.

Ziegler said it is often vary diffi-

cult to properly diagnose the diseases. One method under research, but not yet available commercially, is to look at the tumor surface to evaluate the presence of that antibody.

Another disease that can challenge producers is colibacillosis, usually a secondary disease that flocks can be afflicted with as a primary pathogen. An antibiotic is available for broilers and growing turkeys, but not for layers and pullets. One can be written by prescription, with one packet of vaccine costing about \$30, with a cost of \$2,500 to treat about 30,000 broilers. It may be costly, but is effective, said Ziegler.

## Mastitis, Milk Quality Seminar Set

WILLIAMSON (Franklin Co.)—A mastitis and milk quality seminar will be held from 9:45 a.m.-2:15 p.m. on Feb. 27 here at the Williamson Community Center.

Speakers will be Dr. Larry Hutchinson and Dr. Lorraine Sor-dillo from Penn State and Dr. Bruce Beachnau with Upjohn.

A sampling of the topics to be addressed are udder preparation, heifer mastitis, vaccines, treat-

ment, antibiotics in milk, and testing procedures.

The cost is \$5 per person, which includes lunch and morning refreshments at 9:30 a.m. Please call the Franklin County extension officer by Feb. 22 to indicate how many will be attending. Payment can be made the day of the meeting.

For more information, call the Franklin County extension office at (717) 263-9226.

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