

Immune Breeder Flocks Key To Controlling CAV

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It's been said the best way to fight disease is to prevent it. That may be the *only* way to stem the devastating effects of a combination of diseases that could destroy a flock once chicken anemia virus (CAV) takes hold.

Dr. Bob Owen, Hubbard Farms, Inc., in Walpole, N.H., told nearly 30 poultry producers and agri-industry representatives that the key to fighting CAV is to use immune breeder flocks that have already been exposed to the virus and can pass CAV-fighting antibodies to the chicks.

Owen spoke Monday afternoon during the Penn-State sponsored Poultry Management and Health Seminar at Kreider's Restaurant in Manheim.

Owen admitted how difficult it is to diagnose the disease. The disease is not new, however. It was first recorded in Japan in 1978-1979. And there's "serological evidence for this virus several decades before 1978," said Owen.

"It appears to be a new disease to us because we finally have been able to diagnose it. It's probably been around for years and years."

The widespread virus is known by other names, including chicken anemia agent (CAA), blue wing disease (seen as gangrenous dermatitis in broilers), as well as infectious anemia. It affects broilers and layers. The disease is caused by a virus and only recently has been classified as a member of the *circoviridae* family.

Owen said the virus is "the smallest virus that we know of in veterinary medicine," part of a family of viruses that can affect pigs and birds. The virus is small, measuring only 15 nanometers in diameter with less than 1,760 base pairs.

(As a point of measurement, according to Owen, CAV is 10 times smaller in diameter than the coronavirus that causes infectious bronchitis in chickens. The coronavirus measures 100-120 nanometers in diameter.)

There is only one serotype of CAV.

In the clinical form, CAV shows up in the birds at about two weeks of age as anorexia (the birds don't want to eat) and they look pale. They sit around like any chicken does when sick, with ruffled feathers, according to Owen. Chickens tend not to gain weight as rapidly as their unaffected mates. Mortality peaks 5-6 days after the first signs and can affect from 10-60 percent of the flock.

In the subclinical form, the disease can act in concert with some of the immunosuppressive viruses such as infectious bursal disease virus (IBDV), Marek's Disease virus (MDV), and reovirus.

Owen said, "This virus, combined with those other viruses, decreases the immunoresponsiveness of the birds. Does this sound like the same picture we used to paint with IBD, that we still paint with IBD?"

The problem is, CAV alone doesn't cause a great deal of disease in the birds — but acting together with other agents, it can be devastating to flocks.

When examining deceased birds, veterinarians see gross lesions. Owen spoke about a trip made to South Africa to take a look at 4-week-old birds heavily infected with CAV. "It's really

very dramatic when you see it," he said. "There were chickens lying everywhere. Every one of them that we opened up had no thymus (gland) at all and the skin was falling off their wings because of infection. It can be a devastating infection when it gets into your birds."

The blood of clinically infected birds is very thin and watery. The bone marrow, rather than being a healthy, vibrant red, is actually a pale yellowish brown. There is muscle hemorrhaging. And broilers, particularly, can have dermatitis that is gangrenous — the "wet lesions" from which the term "blue wing" originated.

It is difficult to determine if birds have the "subclinical form," in which they don't exhibit signs of CAV infection but can pass them onto offspring. There is research on coming up with an ELISA test. For Owen's serology, he sends samples from the flocks down to the University of Arkansas where they do a "virus neutralization" (VN) test to check for the birds' antibodies to the disease.

The VN test is inexpensive (\$25

per flock) and effective, according to Owen.

Probably the only way to ensure the clinical form of the disease doesn't show up in the flock is to check to be sure "that we don't have any breeder flocks that fall into this non-immune status," said Owen. "We can be assured that the birds in this that are not going to be challenged in the breeder house are probably going to be challenged in the brooder house."

Producers should be sure to have immune breeder flocks.

This is difficult to do with brand-new houses that are in non-poultry areas of the country. Several are being constructed in Tennessee and managers should be concerned about the evidence of the virus.

Because the USDA still believes the CAV is still an "exotic" virus, according to Owen, there is no vaccine available for it in the U.S., although researchers are working on developing one.

In the meantime, there are few viable alternatives. One is to "move" poultry litter from an established house where the flock



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tested positive for it to a new breeder flock, thus ensuring that the chicks can obtain maternal antibodies to the disease and be able to fight it naturally. But this exposes other threats to the birds, such as Salmonella and other diseases.

The key to control is prevention, and prevention is having positive breeder flocks. "I think every breeder flock should be monitored at 8-10 weeks of age," said Owen.

As for CAV, "we need to be conscious of and we need to recognize it when we see it," he said.

Berks Livestock Clubs Hold Banquet

KUTZTOWN (Berks Co.) — On Nov. 4 at the Kutztown Grange Hall, the Berks County 4-H Livestock Clubs held their annual banquet. More than 250 4-H'ers, parents, supporters, and friends attended the banquet.

4-H'ers were recognized for their outstanding achievements in different areas of the livestock program. This year the 4-H'ers were given a new challenge. Each 4-H'er was given an activity book for the species they were carrying as their project. These activity books were very educational as far as learning about their species and also teaching some important life skills.

Beef club awards are as follows:

- Troy Gelsinger (most helpful member, senior showman, senior fitter, reserve champion steer, champion heifer)

- Mark Manwiller (intermediate showman)

- Ben Weist (junior intermediate showman, most weight gain steer, junior activity book)

- Kristy Dietrich (junior showman)

- Kelly Dietrich (intermediate fitter and intermediate record book)

- Lee Gauker (junior intermediate fitter)

- Cathy Levan (junior fitter)

- Melissa Leiby (senior record book)

- Emilie Miller (junior record book)

- Christina Schoener (senior activity book)

- Josh Krill (intermediate activity book)

- David Newpher (champion steer and reserve champion heifer)

Swine club awards:

- Jill Schick (senior showman, senior fitter, reserve champion carcass hog)

- Anita Manbeck (intermediate showman)

- Brian Hartman (junior showman)

- Steven Younker (intermediate fitter)

- Lara Schick (junior fitter)

- Stephanie Manbeck (senior activity book, senior record book, reserve champion hog, champion carcass hog)

- Justin Levan (intermediate activity book)

- Matt Manbeck (junior activity book)

- Katie Kochera (intermediate record book)

- Ben Weist (junior record book)

- Troy Gelsinger (champion hog)

Sheep club awards:

- Cathy Levan (junior shepherd, junior showman)

- Kelly Glaser (senior shepherd, intermediate showman, intermediate fitter, intermediate record book)

- Nicole Knepp (senior showman, senior fitter, senior record book)

- Amanda Miller (junior fitter, junior activity book)

- Stephanie Bowman (senior activity book)

- Justin Levan (intermediate activity book, reserve champion lamb)

- Lee Gauker (junior record book)

- Katie Ramsay (champion lamb, champion pair of lambs)



Beef club awards went to front row, Melissa Leiby, Troy Gelsinger, Cathy Levan, Kristy Dietrich, Mark Manwiller. Back row, David Newpher, Lee Gauker, Ben Weist, Kelly Dietrich, Emilie Miller.



Sheep club awards went to front row, Amanda Miller, Cathy Levan, Nicole Knepp, Katie Ramsay. Back row, Lee Gauker, Justin Levan.



Swine club awards went to front row, Justin Levan, Matt Manbeck, Troy Gelsinger, Stephanie Manbeck, Jill Schick. Back row, Lara Schick, Brian Hartman, Ben Weist, Steven Younker, Anita Manbeck.