

NPIP STORY

A brief history of NPIP and other related topics.

I want to present to a story about the beginning of the boiler industry as it is told. And as I tell this story I want to show how the process where problems turn to opportunities and progress creates new problems.

My sources for this story is from: Why did the chicken cross the road by Andrew Lawler. Delmarva's Chicken Industry by William Williams, and Partners in Poultry Improvement.



In the late nineteenth century, this was the poultry industry. Many farm families kept chickens. As you can see in this picture, nest were simple boxes, eggs were hand gathered. The barn present some ventilation holes with a sliding board adjustment. one thing I notice is that there is no vegetation indicating that there is quite a few chickens somewhere nearby. This picture shows enough nest for 30 hens.

The common practice was to order 50 chicks early in the spring. Raise the flock and eat the males as soon as they could be sorted out fryers first, boilers next roasters later and stewing hens as the laying flocks egg production began to wane. Good layers would be carried through the winter for Easter eggs. And the process would begin again next year. 50 chicks each spring fed the family for a year.



Here is a picture of a circa 1905 Queen incubator. It looks big enough to hold 30 dozen eggs. The oil burner on the side provided the heat.

But in 1923, a mistake that no one will admit to, caused Vernon Steen to send Celia Steele 500 chicks instead of the 50 she needed. They decided to raise them and sell them. By 1926, She and Wilmer were raising 10,000 each year.



Here is said to be a photograph of the Wilmer Steele's poultry farm. That could very well be 10,000. notice the small 12x12 barns with two windows and a door. Birds were fed and watered outside the building. The main purpose for the building is for roosting and sleeping at night. The barn kept the varmints out at night.

During a twenty year time the New York price of eggs and chicken nearly doubled. Chickens were mostly sold live.



This peninsula here is called Delmarva, a blend of the sates Delaware, Maryland and Virginia. Notice the large cities around this most excellent farmland. New York Philadelphia , Baltimore, and Washington.

Here is the thing that tied them together. The poultry trains were running from New York back to Sussex county Delaware. I wanted to tell you how many birds cold be on the train but I not sure. I will point out that they weren't all chickens. see that goose on the left end.

Soon everybody was making money like the Steele family. As the population of chickens increased in Sussex County, the opportunity for disaster was also growing.

By the early 1930's, up to 80% of the chicks being sent to Sussex county were dying. The cause Bacillary White Diarrhea. Remember these are the days when everyone was an organic farmer.



The control of bacillary white diarrhea depends on two factors: First, the detection of infected breeding hens by means of the serum agglutination test, and their removal from the flock; and second, the protection of the newly hatched uninfected chicks against infection in incubators, brooders, and houses. Flocks free from the disease are needed to supply healthy breeding stock. Avoid purchasing eggs or breeding stock from infected flocks. Isolate all exposed or infected chicks. Destroy all dead chicks by burning. Intestinal antiseptics, including sour milk, may be regarded as palliative remedies, but should not be depended upon to prevent the development of the disease in infected flocks. Incubators, brooders, and houses should be cleaned and disinfected. Hot lye water (1 pound of lye to 40 gallons of water) applied with a broom or brush with a spray pump is a reliable disinfectant. Valuable information and assistance can be obtained from your local veterinarian in controlling infectious diseases of the character.

It was understood that BWD was being transmitted through the egg to the chicks.



BWD was first recognized in 1899, about 50 years after Louis Pasteur was doing his work in France.

BWD is caused by the bacillary bacteria, meaning rod shaped. In 1913 a blood test was developed that could identify poultry that had been exposed to *Salmonella pullorum*.



As the plague was going through the young poultry industry The IBCA began meeting to discuss how to stop this problem. Two diseases, bacillary white diarrhea disease and a respiratory disease called typhoid were identified. It was discovered that an organism called *Salmonella Pullorum* and another called *Salmonella Typhimurium* were the cause and blood test could identify the flocks that carried the disease.



In 1935 an agency of the government was funded federally and states were given the responsibility of administering the National poultry improvement Program (NPIP). NPIP would sign up member hatcheries and breeder flocks. The goal was to stop the disease by eliminating it from the breeder flocks.



Flocks were blood tested for the antigen of Pullorum and typhoid disease. If no antibodies were found the flock was designated as Pullorum free. Member hatcheries would work to become Pullorum free and their states would announce that they were Pullorum free. The last state to be listed as Pullorum free was West Virginia in 1946.

In 1955 NPIP expanding its searches for communicable disease in poultry to the mycoplasma classes mainly MG, MS, MM. These are also egg transmissible so it was necessary to remove infected breeder flocks from the industry. Mycoplasma flocks are still present in all the poultry groups, but the monitoring does help keep the spread minimized. In 2005 the NPIP began monitoring for avian influenza. That disease caused widespread devastation in 2015.



The next modification point in the history of the NPIP was the establishment of the Meat and Poultry Inspection Act in 1957. The condemnations at the processing plant due to airsacculitis were extreme in some cases. The losses were due in part to Chronic Respiratory Disease in chickens and pleropneumonialike organism (PPLO) in turkeys. Mycoplasma gallisepticum (MG) was determined to be the causative organism in both of these conditions. MG was found to be egg-transmitted like pullorum disease and was added to the NPIP plan disease plan.



What is mycoplasma? Mycoplasma is a single cell organism with a fragile cell wall, therefore it cannot live in the environment very long.



But it can live dormant in a host and not cause the symptoms that we see in these photos.



There are other Mycoplasmas; MS Mycoplasma Synoviae MM, Mycoplasma meleagridis All of the pathogenic mycoplasma are egg transmitted from one generation to another.

So, What shall me do?

NPIP has been successful operation it is under the direction of the APHIS under the USDA. 9 CFR 146. It is administrated by each state through a state coordinator under the sate veterinarian. The state coordinator monitor and promotes membership. Which is still a voluntary program. Hatcheries are still list as pullroum free. Some would say that the program is obsolete because pullorum is eradicated. But pullorum is not eradicated and could return to the poultry industry. More importantly mycoplasma in still prevalent problem . The more the industry participates in the program the more likely these disease can be removed for the environment.



Be a good neighbor- Do not propagate known flocks with Mycoplasma

test, isolate, eradicate
antibiotics can reduce replication
be a good neighbor

Remember **when** pullorum was eradicated from the poultry flocks there were no antibiotics, no high class disinfectants. And the blood test was rare and expensive. So how was it accomplished?

Through the process of evaluate and slaughtered. Breeder flocks were isolated and flocks with symptoms were not used as breeders. As testing became more prevalent the process was refined to the goal of only originating chicks from pullorum clean breeders. The last state was declared pullorum free in 1947, two decades after IBCA began it campaign against it.

Our access to testing is much cheaper so a method of test and eradicate is feasible.

As a breeder:

Advertising your flock as mycoplasma free

Only sell suspect chicks to terminal locations

Keep breeder flocks in separate location that could be depopulated for 30 days if necessary.

A few hundred yard can keep MG from moving from bird to bird

Do not allow pen to pen or bird to bird contact

Do not sell suspect chicks to breeder locations

Do not buy adult birds and put them on a location with your breeder flock

As a grower:

Ask your chick supplier if they are mycoplasma free.

Plan to empty your farm yearly or move all carry over birds to a offsite locations and depopulate it later.

What is a terminal location It is a ranch that will be 100% depopulated each year

Have a isolation and eradication plan.

Ending

DCO (disease causing organisms) like MG must replicate to survive. MG can only replicate in a bird. Once the bird is gone MG dies off quickly.

MG 's weakness is it must be in a bird or egg to survive. By understanding how MG is passed from bird to bird, we can stop it. MG easily moves from bird to bird, but it dies quickly, less than 30 days, away from the bird.

MG can be prevented from entering your farm and it can be eradicated from your farm.

Antibiotics suppress the replication of the DCO but to eradicate you must eliminate the infected birds. So when I say don't buy adult birds what I'm saying is don't mix adult birds with birds that you don't want to kill off once a year as a part of your depopulation.

If your depopulating your farm for 30 or more days on a yearly basis then MGs not going to be an issue.

Build an isolation plan

1- keep breeder separated from main flock

2-grow replacement breeder away from old breeder flock

3- have an eradication plan in that worst case

Have an eradication plan

1-consider two separate breeder location

2-be able shut down breeder pens if needed.

3-have an alternative source for breeders

Test, Isolate Eradicate

What is your Testing Plan?

What is your Isolation Plan?

What is your Eradication Plan?