

The Use Some Autogenous or Killed Vaccines Can Contribute to Higher False Positive Rates in ELISA:MG/MS Mycoplasma Screening Tests.

The GPN Serology Department utilizes the IDEXX MG/MS commercial kit in the Georgia Mycoplasma surveillance program. See Figure 1 for the GPLN testing protocol. In order for a flock to be considered positive for MS in Georgia, two tests must be positive (typically a HI:MS positive and PCR positive). In the light of an MS outbreak, GPLN and the industry initiated "The Georgia MS testing Intensification Program" This initiative focuses on two aspects of the MS testing program : 1) **Awareness of potential ELISA + HI- flocks**...those rare flocks with reactors on the ELISA:MGMS test but are negative hemmagglutination Inhibition test (HI:MS) that later break with MS and 2) **Investigations of factors that might lead to false positives (FP) on the ELISA:MGMS screening test.** These are flocks with reactors on the ELISA:MG/MS and HI:MS negative that do not contain the MS organism. With the hundreds of thousands Mycoplasma antibody tests run annually at GPLN, a better understanding of sources leading to FP reactions could benefit customers in results interpretations. The use of certain killed & autogenous vaccines may contribute to FP rates using the ELISA:MG/MS .

1) **Awareness of potential ELISA + HI- flocks.** GPLN has added an additional diagnosis on the full accession report to alert customers of flocks that have ELISA reactors and are HI:MS negative. Because antibody detected in the ELISA:MGMS test can come up earlier than those captured on the HI:MS test, customers are encouraged to test these flocks before the next schedule bleed dates, preferably within two weeks after receiving the diagnosis of "MG/MS serology negative: titers over 1076". Titers of 1075 or less are considered "non-reactors" in the IDEXX, ELISA:MG/MS kit. The goal is to catch "early breaks" of MS.

2) **The use of Killed & Autogenous vaccines may increase the FP rates in the ELISA:MG/MS .** From Figure 2, the highest FP rates (10.7%) occur at the bird age between 20 and 24 weeks. This age range is also the peak of antibody production from vaccination. We looked at thousands of flocks from 21 companies to determine whether there were significant statistical difference between the flocks types listed below

- Flocks with FP (ELISA:MG/MS reactors and HI:MS negative)
- Flocks with no FP (no ELISA:MG/MS reactors)
- Flocks given vaccine
- Flocks not given vaccine.

There were three vaccines of interest a) Autogenous REO, b) killed Cholera , and c) Autogenous Salmonella.. Chi square analysis yielded the following results (see Table 1) .

Conclusions:

- ◆ Use of at Autogenous REO vaccines does not lead to more flocks with FP
- ◆ Use of one or more killed Cholera vaccines does lead to more flocks with FP
- ◆ Use of Autogenous Salmonella vaccines does lead to more flocks with FP

Table 1:	Flocks	# Flocks with FP	# Flocks w/o FP	Chi-Square value	Significant @ 0.05
	Given autogenous REO vaccine	960	377	0.768	No
	Not given autogenous REO vaccine	8040	2984		
	Given killed Cholera vaccine	873	439	46.32	Yes
	Not given killed Cholera vaccine	8659	2855		
	Given autogenous Salmonella vaccine	1147	259	31.24	Yes
	Not given autogenous Salmonella vaccine	9816	1467		

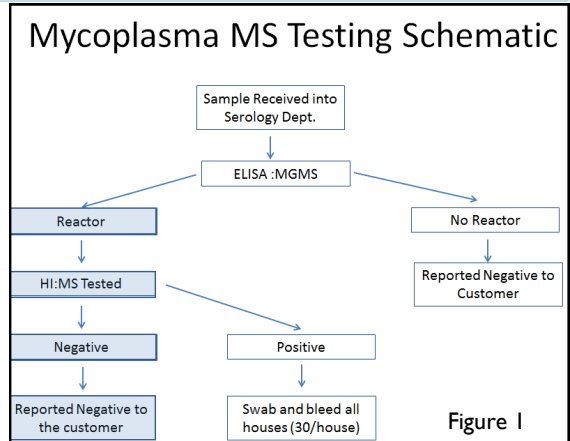


Figure 1

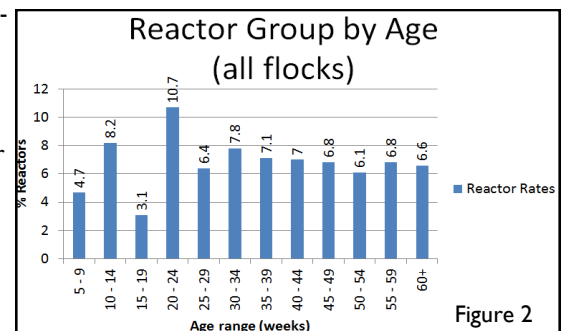


Figure 2

Final thought: When customers notice a low number of titers just over the 1076 cutoff that are HI negative, they need to consider that it may be a FP if there is a killed cholera or autogenous Salmonella bacterin used in the vaccination program, especially if there is a reactor due to unknown causes or an early MS break (caught before the HI test kicks in).

Tours and Visitors



Intern Jay Curry discusses poultry issues with Dr. Louise Dufour-Zavala.

Jay worked on a Bacteriology project and helped in the Salmonella workshop. He trained in all departments during his internship.



Japanese delegation visits the Gainesville Laboratory—June 2nd



Gainesville Rotary Club— June 15th

The Gainesville Rotary Club held meetings at the New Gainesville Lab facility with approx. 100 in attendance. The large group had lunch in the conference room and were given a tour of the lab.

GPLN Events

- **GVMA Attended by GPLN Clinicians — June 5th & 6th.** Dr. Louise Dufour-Zavala presented “MS Task Force Update” at the Emerald Coast Veterinary Conference in Destin, Florida. Dr. Davis and Dr. Anderson attended the meetings

Other Presentations:

- **Madison County Young Farmers, Talk about Avian Influenza—June 11th**
- **Governor’s Briefing on Avian Influenza—June 23rd**
- **HPAI Preparedness Atlantic Flyway, Riverdale, MD—June 30th thru July 1st**
- **AI Updates, Coweta and Forsyth Counties (Dr. Anderson)**
- **GPLN Re-Works CO₂ Carts in Advance of Southern Wild Bird Migration this Fall (Zach Bacher, Len Chappell & Tyler Reed)**



Zach Baker and Tyler Reed work on CO₂ carts used in the euthanasia of commercial egg layer complexes. They replaced worn parts and brought 7 units up to proper working order.