



The Poultry Informed Professional®



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ILT Vaccination – Challenging the Dogma

In the Jan/Feb issue García *et al.* emphasized that “*improper vaccine application and poor biosecurity*” have allowed ILT vaccine strain virus to become endemic in many poultry producing areas. With this in mind we invited Dr Chip Garritty of Merial Select to use this forum to challenge the dogma on ILT vaccination. Following a series of long and involved research trials they came up with some really interesting conclusions and take-home messages. The purpose of the research was to provide the poultry industry with scientific data on which to base decisions on how to optimize protection against and possibly eradicate the presence of ILT. The following is an abbreviated version of a presentation given by the author on the truths and myths of ILT vaccination.

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| Broiler Live Production Cost | Average Company |
|-------------------------------|-----------------|
| Feed Cost/ton w/o color (\$) | 283.7 |
| Feed cost /lb meat (c) | 26.22 |
| Days to 4.6 lbs | 41 |
| Chick cost / lb (c) | 4.71 |
| Vac-Med cost/lb (c) | 0.08 |
| WB & ½ parts condemn. Cost/lb | 0.24 |
| % mortality | 4.52 |
| Sq.Ft. @ placement | 0.82 |
| Lbs/sq. ft. | 7.29 |
| Downtime (days) | 14 |

Data for week ending 17 May, 2008

ILT Vaccination: Fact vs. Fiction

Dr Chip Garritty, Merial Select

Key Message: It is critical to infect a high percentage of the flock at the time of vaccination

Key Points: High initial infection rates = less back passage of vaccine virus
Less back passage = less reaction
Less reaction = less clinical signs
Less clinical signs = less impact on performance

Efficiency of Vaccination:

Fiction – Poor administration that leaves some birds unvaccinated isn't a problem.

Fact – Poor administration results in low initial levels of infection and back passage of the vaccine virus.

Fact – Poor administration results in low initial levels of infection which prolongs the time and amount of virus shed into the environment.

ILT Vaccination Methods:

Fiction – ILT spray vaccination and water vaccination are equally effective.

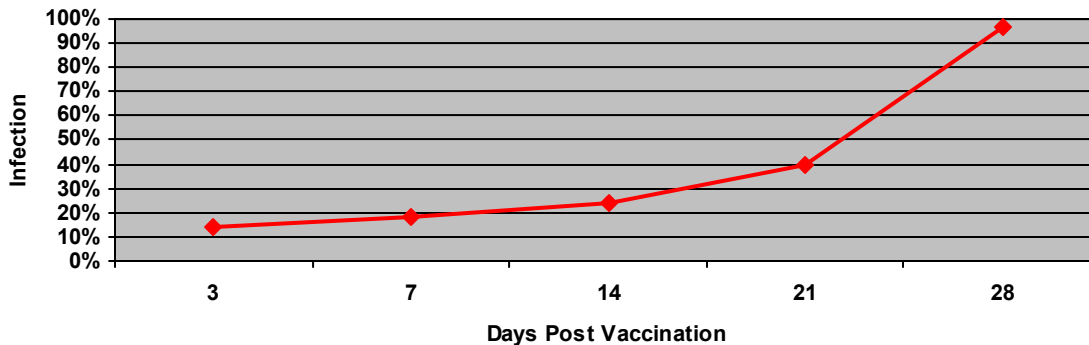
Fact – Proper water delivery of ILT vaccine increases the time that the virus is available to the flock allowing more birds to infect themselves.

Water vaccination is more effective because it is more likely to achieve the goal of infecting the highest percentage of birds initially.

NOTE: In all of the following trials, the methodology was the same. At each time point tracheal swabs were taken from 9 birds in 10 different areas of a the test house (90 totals samples per house) and the presence or absence of ILT DNA determined by Real Time PCR.

Trial 1: Infection Rates Following Spray Vaccination

Merial Select in house data - field vaccination performed by one person, using full dose in ~2 gallons of water, making one pass through the house with gas powered sprayer.



ILT Protection Post CEO Vaccination (Merial Select M07-004 MS)

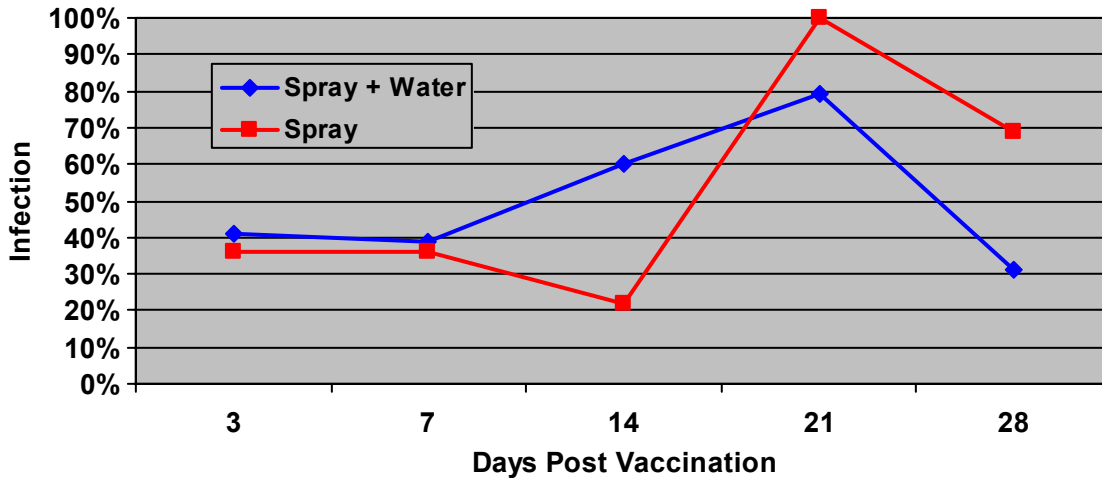
Birds vaccinated in the field were brought back to the Merial R&D facilities and challenged. The degree of protection was evaluated based on occurrence of clinical signs post challenge

| Farm | Administration Method | Age at Vaccination | Days Post Vaccination | Protection |
|------|-----------------------|--------------------|-----------------------|------------|
| 1 | Water | 14 days | 14 days | 97% |
| 2 | Spray | 14 days | 14 days | 37% |

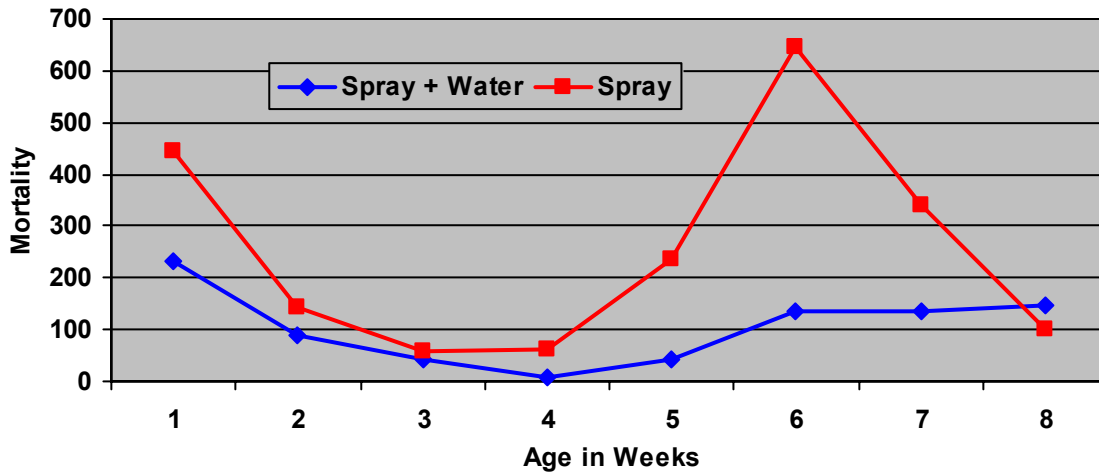
Conclusion – low initial infection rates result in cycling of the vaccine virus and delays immunization of the flock.

Trial 2. Spray (Solo Vac) + Water (proportioner) Vaccination vs. Spray Vaccination (Solo Vac).

This trial was conducted by Merial Select staff to evaluate integrator vaccination procedures. Birds were vaccinated at 14 days using full dose (SoloVac) or two full doses (SoloVac + proportioner) without any attempt to improve the existing methods.



Conclusion – low initial infection rates for both methods but more rapid increase for spray + water. Spray only appeared to be clearing but in reality the infection stalled for 3 weeks post vaccination.



Conclusion – higher infection rates earlier result in less mortality. Mortality spike in spray only group following the spike in infection rate.

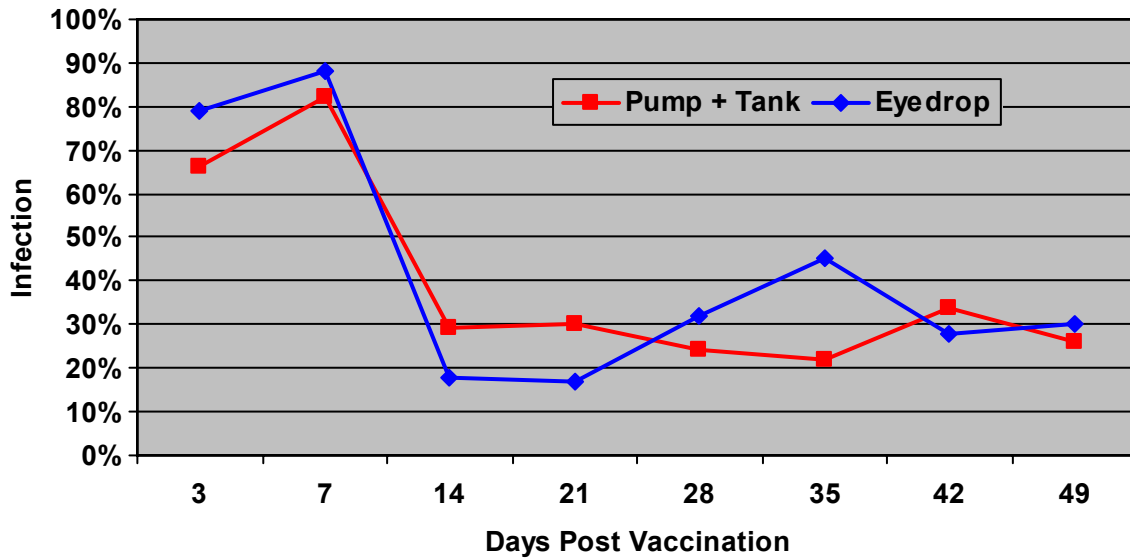
Trial 3. Pump & Tank vs. Proportioner Water Vaccination

Birds vaccinated at 21 days using full dose administered via the drinker system using a pump or proportioner had very similar infection rates and mortality pattern. (data not shown)

Conclusions – vaccination via drinking water produces similar results whether using proportioner or pump methods.

Trial 4. Eyedrop Vaccination vs. Water Vaccination

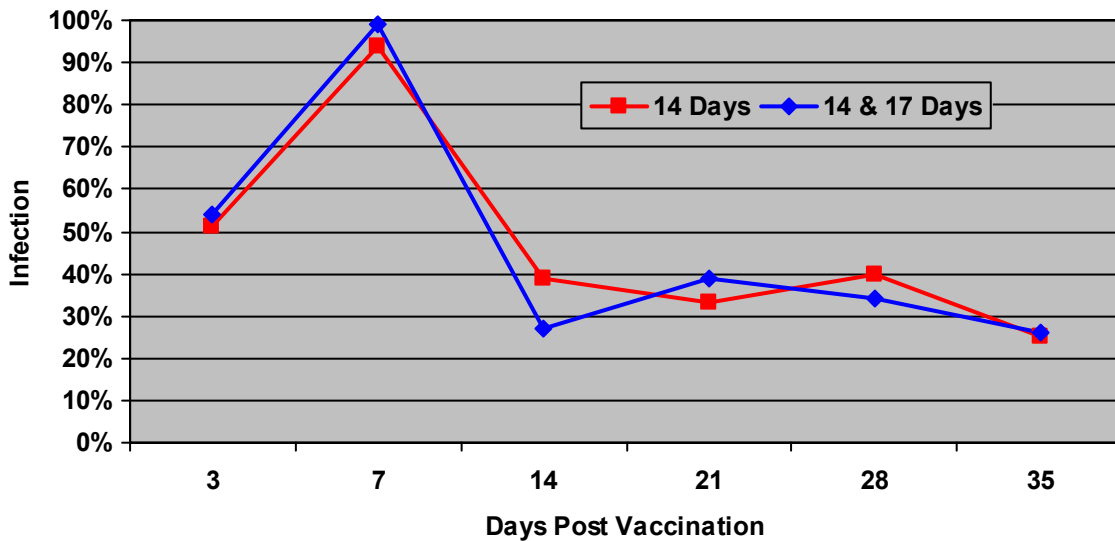
(Birds vaccinated at 14 days with eyedrop or pump and tank using full dose of vaccine)



Conclusions – water vaccination produced similar infection rates to the “gold standard” eyedrop method .

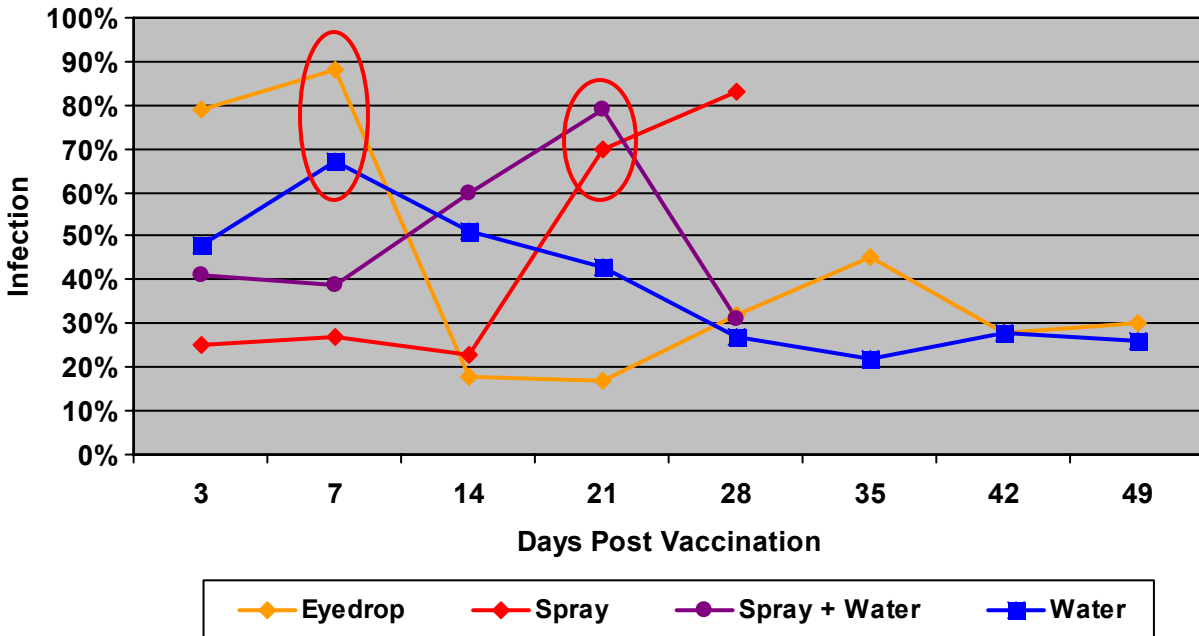
Trial 5. Single Water Vaccination vs. Double Water Vaccination

(Vaccinated at 14 days or 14 and 17 days with pump and tank using full dose at each vaccination)



Conclusions – good water vaccination results in high early infection rates.

Composite of All Trials (Average of the infection curves of all trials by route of administration)



Conclusions—eyedrop and water routes tend to achieve higher early infection rates when compared to spray only and spray + water routes.

SUMMARY

ILT Vaccine Titrers

Fiction – ILT vaccines with a lower titer are less reactive.

Fact – With ILT, the titer of the vaccine and application method work in concert to get all of the birds in a flock infected at the same time.

ILT Vaccination vs. IBV/NDV Vaccination

Many IBV/NDV strategies use a combination of low titered products and less reactive vaccines to minimize reaction. This strategy does not work with ILT due to biological differences between the viruses and ILT’s inability to spread quickly.

Clinical Observations

Flocks with low initial infection rates tend to show more clinical signs.

Flocks with low initial infection rates tend to have higher mortality spikes.

Time of Vaccination

Fiction – ILT water vaccination should be completed in 1-2 hours.

Fact – using sufficient water to last up to four hours improves the rate of vaccination.

Key Fact: Allowing vaccine to remain available for up to four hours takes advantage of the normal eating/drinking patterns to ensure the maximum numbers of birds consume water with vaccine.

Take Home Message: The vaccination program should be designed to accomplish the goal of infecting a high percentage of the birds in a flock with vaccine virus at the time of administration.

Excerpts from the latest USDA National Agricultural Statistics Service (NASS) “Broiler Hatchery,” “Chicken and Eggs” and “Turkey Hatchery” Report and Economic Research Service (ERS) “Livestock, Dairy and Poultry Situation Outlook”

Chickens and Eggs

Released May 23, 2008, by NASS, Agricultural Statistics Board, USDA

April Egg Production Down 1 Percent

U.S. egg production totaled 7.38 billion during April 2008, down 1 percent from last year. Production included 6.28 billion table eggs, and 1.11 billion hatching eggs, of which 1.04 billion were broiler-type and 66 million were egg-type. The total number of layers during April 2008 averaged 341 million, down 1 percent from last year. April egg production per 100 layers was 2,164 eggs, up slightly from April 2007. All layers in the U.S. on May 1, 2008 totaled 341 million, down 1 percent from last year. The 341 million layers consisted of 280 million layers producing table or market type eggs, 57.7 million layers producing broiler-type hatching eggs, and 2.84 million layers producing egg-type hatching eggs. Rate of lay per day on May 1, 2008, averaged 71.8 eggs per 100 layers, up 1 percent from May 1, 2007.

Egg-Type Chicks Hatched Up 5 Percent

Egg-type chicks hatched during April 2008 totaled 41.1 million, up 5 percent from April 2007. Eggs in incubators totaled 39.6 million on May 1, 2008, up 10 percent from a year ago. Domestic placements of egg-type pullet chicks for future hatchery supply flocks by leading breeders totaled 264 thousand during April 2008, down 4 percent from April 2007.

Broiler-Type Chicks Hatched Down Slightly

Broiler-type chicks hatched during April 2008 totaled 797 million, down slightly from April 2007. Eggs in incubators totaled 665 million on May 1, 2008, down 2 percent from a year earlier. Leading breeders placed 6.87 million broiler-type pullet chicks for future domestic hatchery supply flocks during April 2008, up 3 percent from April 2007.

Broiler Hatchery

Released May 28, 2008, by NASS, Agricultural Statistics Board, U.S.D.A.

Broiler-Type Eggs Set In 19 Selected States Down 1 Percent

Commercial hatcheries in the 19-State weekly program set 216 million eggs in incubators during the week ending May 24, 2008. This was down 1 percent from the eggs set the corresponding week a year ear-

lier. Average hatchability for chicks hatched during the week was 84 percent. Average hatchability is calculated by dividing chicks hatched during the week by eggs set three weeks earlier.

Broiler Chicks Placed Down 1 Percent

Broiler growers in the 19-State weekly program placed 177 million chicks for meat production during the week ending May 24, 2008. Placements were down 1 percent from the comparable week a year earlier. Cumulative placements from December 30, 2007 through May 24, 2008 were 3.74 billion, up 2 percent from the same period a year earlier.

Turkey Hatchery

Released May 14, 2008, NASS, Agricultural Statistics Board, USDA

Eggs in Incubators on May 1 Up 1 Percent from Last Year

Turkey eggs in incubators on May 1, 2008, in the United States totaled 33.1 million, up 1 percent from May 1, 2007. Eggs in incubators were up 4 percent from the April 1, 2008 total of 31.9 million eggs. Regional changes from the previous year were: East North Central up 1 percent, West North Central down 3 percent, North and South Atlantic up 6 percent, and South Central and West down 2 percent.

Poults Hatched During April Up 1 Percent from Last Year

Turkey poults hatched during April 2008, in the United States totaled 26.5 million, up 1 percent from April 2007. Poults hatched were down 1 percent from the March 2008 total of 26.8 million poults. Regional changes from the previous year were: East North Central down 6 percent, West North Central down 4, North and South Atlantic up 11 percent, and South Central and West down 5 percent.

Net Poults Placed During April Down 1 Percent from Last Year

The 25.8 million net poults placed during April 2008 in the United States were down 1 percent from the number placed during the same month a year earlier. Net placements were down 2 percent from the March 2008 total of 26.4 million.

Current Month Charts

| Broiler Performance Data Live Production Cost | Region | | | | | Average Company |
|--|--------|---------|-----------|--------------|-----------|--------------------|
| | SW | Midwest | Southeast | Mid-Atlantic | S-Central | |
| Feed Cost/ton w/o color (\$) | 289.93 | 272.65 | 281.04 | 279.97 | 286.47 | 283.7 |
| Feed cost /lb meat (c) | 26.79 | 24.70 | 25.69 | 26.93 | 27.02 | 26.22 |
| Days to 4.6 lbs | 42 | 41 | 41 | 40 | 40 | 41 |
| Chick cost / lb (c) | 4.61 | 4.67 | 5.22 | 3.98 | 4.39 | 4.71 |
| Vac-Med cost/lb (c) | 0.10 | 0.03 | 0.08 | 0.09 | 0.06 | 0.08 |
| WB & ½ parts condemn. Cost/lb | 0.21 | 0.27 | 0.27 | 0.25 | 0.21 | 0.24 |
| % mortality | 4.61 | 5.19 | 4.34 | 4.81 | 4.33 | 4.52 |
| Sq.Ft. @ placement | 0.79 | 0.79 | 0.80 | 0.93 | .82 | 0.82 |
| Lbs/sq. ft. | 7.51 | 7.13 | 7.04 | 7.56 | 7.70 | 7.29 |
| Downtime (days) | 15 | 11 | 15 | 16 | 12 | 14 |

| Broiler Whole Bird Condemnation | Region | | | | | Average Company |
|------------------------------------|--------|---------|-----------|--------------|-----------|--------------------|
| | SW | Midwest | Southeast | Mid-Atlantic | S-Central | |
| % Septox | 0.150 | 0.246 | 0.082 | 0.156 | 0.084 | 0.145 |
| % Airsac | 0.042 | 0.113 | 0.265 | 0.112 | 0.049 | 0.110 |
| % I.P. | 0.010 | 0.045 | 0.005 | 0.046 | 0.021 | 0.022 |
| % Leukosis | 0.000 | 0.000 | 0.000 | 0.002 | 0.000 | 0.001 |
| % Bruises | 0.010 | 0.001 | 0.006 | 0.002 | 0.002 | 0.004 |
| % Other | 0.011 | 0.002 | 0.004 | 0.009 | 0.008 | 0.007 |
| % Total | 0.224 | 0.408 | 0.362 | 0.326 | 0.164 | 0.289 |
| % ½ parts condemns | 0.291 | 0.371 | 0.307 | 0.339 | 0.416 | 0.339 |

Data for week ending 17th May, 2008

Previous Month Charts

| Broiler Performance Data Live Production Cost | Region | | | | | Average Company |
|--|--------|---------|-----------|--------------|-----------|--------------------|
| | SW | Midwest | Southeast | Mid-Atlantic | S-Central | |
| Feed Cost/ton w/o color (\$) | 270.9 | 247.28 | 267.72 | 265.41 | 264.85 | 266.50 |
| Feed cost /lb meat (c) | 24.81 | 22.56 | 24.57 | 25.51 | 24.95 | 24.65 |
| Days to 4.6 lbs | 42 | 41 | 42 | 41 | 41 | 42 |
| Chick cost / lb (c) | 4.61 | 4.68 | 4.90 | 4.07 | 4.43 | 4.69 |
| Vac-Med cost/lb (c) | 0.07 | 0.04 | 0.08 | 0.09 | 0.04 | 0.08 |
| WB & ½ parts condemn. Cost/lb | 0.23 | 0.28 | 0.34 | 0.30 | 0.24 | 0.29 |
| % mortality | 5.74 | 5.53 | 5.48 | 5.51 | 5.45 | 5.54 |
| Sq.Ft. @ placement | 0.78 | 0.79 | 0.81 | 0.89 | 0.82 | 0.82 |
| Lbs/sq. ft. | 7.20 | 7.01 | 6.98 | 7.53 | 7.57 | 7.13 |
| Downtime (days) | 14 | 13 | 15 | 17 | 13 | 14 |

| Broiler Whole Bird Condemnation | Region | | | | | Average Company |
|------------------------------------|--------|---------|-----------|--------------|-----------|--------------------|
| | SW | Midwest | Southeast | Mid-Atlantic | S-Central | |
| % Septox | 0.156 | 0.321 | 0.183 | 0.199 | 0.127 | 0.198 |
| % Airsac | 0.047 | 0.108 | 0.385 | 0.163 | 0.98 | 0.164 |
| % I.P. | 0.011 | 0.036 | 0.009 | 0.077 | 0.37 | 0.032 |
| % Leukosis | 0.000 | 0.001 | 0.001 | 0.002 | 0.001 | 0.001 |
| % Bruises | 0.011 | 0.002 | 0.007 | 0.003 | 0.003 | 0.005 |
| % Other | 0.010 | 0.009 | 0.011 | 0.009 | 0.011 | 0.011 |
| % Total | 0.234 | 0.476 | 0.595 | 0.453 | 0.276 | 0.410 |
| % ½ parts condemns | 0.352 | 0.335 | 0.297 | 0.392 | 0.393 | 0.368 |

Data for week ending 07 March, 2008

Meetings, Seminars and Conventions

2008

May

May 27- 28: Ontario Association of Poultry Practitioners (OAPP) Technical Symposium. Holiday Inn, Scottsdale Drive, Guelph, Ontario. Day 1 - antimicrobial use, development of antimicrobial resistance and alternatives for poultry production. Day 2- emerging diseases and animal welfare. For registration information contact Dr. Emily Martin at emartin@lsd.uoguelph.ca

2008

June

June 4-7: NPIP Biennial Conference in Portland, ME. Contact: C. Stephen Roney, National Poultry Improvement Plan, 1498 Klondike Road, Ste. 101, Conyers, GA 30094, phone: 770-922-3496 x17, fax: 770-922-3498

June 29—July 4: XXIII World's Poultry Congress, Convention and Exhibition Centre, Brisbane, Australia. Contact: WPC 2008 Congress, Intermedia Convention & Event Management, P.O. Box 1280, Milton, Queensland 4064, Australia, Phone: +61 7 3858 5594; Fax: +61 7 3858 5510; Email: wpc2008rim.com.au; Website: www.wpc2008.com

2008

July

July 6-10: 8th International Marek's Disease Symposium, Townsville, Queensland, Australia. Contact: Dr. G. Burgess, School of Veterinary & Biomedical Sciences, James Cook University, Townsville, Queensland 4811, Australia. Phone: +61 7 4781 5472; Fax: +61 7 4781 6833; Email: gra-ham.burgess@jcu.edu.au

July 14-16: Welfare and Epidemiology Conference; Gateway Hotel, Iowa State University in Ames, Iowa. "Across species, across disciplines, across borders; opportunities for welfare and epidemiology scientists." More information about submitting abstracts, attending or if you have any questions contact us at <http://www.ucs.iastate.edu/mnet/welfare/home.html>

July 20-23: American Association of Avian Pathologists annual meeting, New Orleans, Louisiana. Email: aaap@uga.edu

2008

September

September 16-18: Combined North-eastern Conference on Avian Diseases (NECAD) / Pennsylvania Poultry Sales and Service Conference (PSSC) at the Penn State Conference Center Hotel, State College, Pa. Contact Bill Pierson tel 540-231-7823

2008

October

October 6, 2008 - October 8, 2008 -- National Meeting on Poultry Health & Processing 43rd National Meeting on Poultry Health and Processing October 6 - 8, 2008 Clarion Resort Fontainebleau Hotel Ocean City, Maryland

2009 January

January 28-30: International Poultry Expo 2009, Georgia World Congress Center, Atlanta, Georgia. Contact: US Poultry & Egg Association, 1530 Cooledge Road, Tucker, Georgia 30084-7804. Phone: +1-770-493-9401; Fax: +1-770-493-9257; Email: expogeneralinfo@poultryegg.org; Website: www.poultryegg.org

2010 April

April 20-23: VIV Europe 2010, Utrecht, The Netherlands. Contact: XNU Exhibitions Europe B.V, P.O. Box 8800, 3503 RV Utrecht, The Netherlands, Fax: +31 302-952-809; Website: www.viv.net

Thanks to the authors of the feature article
Dr Chip Garrity and Dr David Smith



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Reminder

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