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The magazine for the integrated poultry industry

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# WATT Poultry USA

The magazine for the integrated poultry industry

## COVER STORY

**22** The expanding market for slow-growing broilers  
The Netherlands' slower-growing chickens dominate the fresh retail market.  
BY GARY THORNTON

## FEATURES

**14** Will US poultry supplies outpace demand in 2017?  
BY GARY THORNTON

**16** Bumper corn crop doesn't equal lower chicken prices  
BY MATT BEESON

**28** How to safely cut antibiotic use in poultry production  
BY MARK CLEMENTS

**32** Poultry vaccines may control future avian flu outbreaks  
BY AUSTIN ALONZO

**36** Climate change spurs rise in mycotoxin contamination  
BY JACKIE ROEMBKE



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## NEXT ON THE PLATE

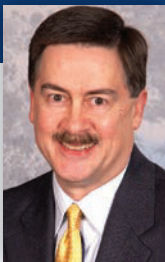
- 2** » US poultry industry foresees oversupply, lower efficiency
- » Turkey's share of ground meat market increases

- 42** Product Review
- 47** Market Place
- 48** Ad Index



## » NEXT ON THE PLATE

### Editor's Comment BY GARY THORNTON



# Poultry business is topsy-turvy in the Americas

The U.S. poultry industry is in its fifth year of profitability, while the Brazilian poultry industry is upside down with high feed costs and liquidity woes.

The Brazilian real and corn production are down, but this is just part of the economic squeeze on Brazilian poultry producers, said Dr. Paul Aho at the USA Poultry & Egg Export Council annual meeting earlier this year. The pinch on the Brazilians, he said, is completed by the country's switch from being an exporter to an importer of corn.

The Brazilian poultry industry's former advantage as a corn exporter worked like this: "Let's say you're a small corn producer in the center of Brazil. Your corn price will be, Rotterdam, minus transportation, minus all of the things that go on in the port at Brazil, minus the trucking cost back to your farm in central Brazil, and you end up with a very low price of corn, and chicken producers have a bargain."

It is a harder reality, Aho said, for Brazil today as a corn importer: "You take the New Orleans price of corn, you add transportation costs to the port in Brazil, you add the cost of getting through the port, then you add the cost of getting that truck into the center of Brazil, and all of a sudden you've got seven dollar a bushel corn."

Rabobank's senior analyst for animal proteins said at the same meeting that the liquidity of Brazilian poultry producers has become an issue.

"We're seeing interest from Asian and European poultry producers in finding opportunity for acquisitions. The second tier of the Brazilian poultry market is going to change significantly over the next 12 months," said Will Sawyer of Rabobank.

Reflecting on the topsy-turvy economics on the American continents, Aho said, "The storm has passed from the U.S. to Brazil."

Sawyer went on to point out a different silver lining for North American poultry producers: The current valuation of the Mexican peso sets up not just opportunities for U.S. exports of animal proteins there but the Mexican poultry industry's opportunity to take advantage of further processing opportunities. ■

» Editor's comment for this month is from Gary Thornton's All Things Poultry blog. Read other blog posts here:  
[www.WATTAgNet.com/blogs/6](http://www.WATTAgNet.com/blogs/6)

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### Poultry Confidence Index BY GREG RENNIER



# US poultry industry foresees oversupply, lower efficiency

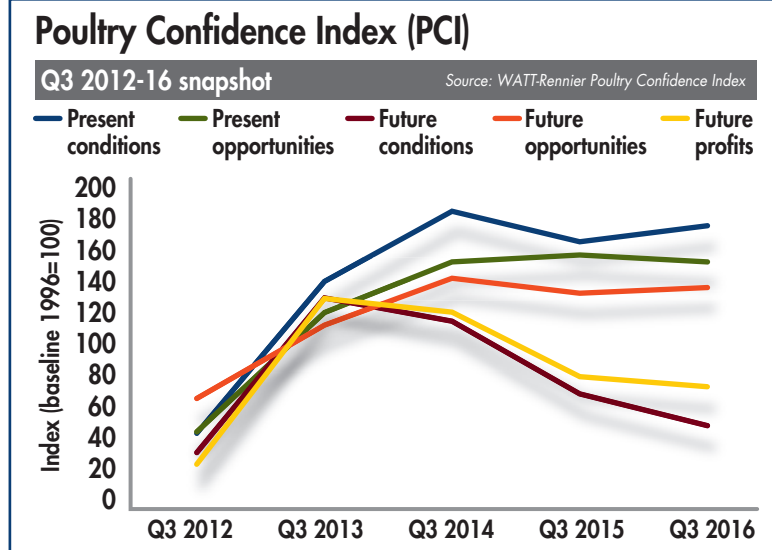
Although U.S. poultry industry optimism about current conditions remained high during the third quarter of 2016, expectations for future conditions and profits took a tumble, according to the WATT-Rennier Poultry Confidence Index (PCI).

The Overall Index now stands at 120.7, down from 142.9 during the second quarter of 2016 (100-point baseline = 1996). The Present Situation Index fell slightly to 168.0 from 180.1, while the Expectations Index declined to 89.2 from 118.0.

Consumers are following a similar path. July 2016's Consumer Confidence Index showed that "consumers were slightly more positive" while expectations "declined slightly" based on business and labor conditions as well as concerns over personal income prospects.

#### Concern over future oversupply

The biggest change in the Poultry Confidence Index over



**This third quarter's outlook for future profitability dropped to a four-year low at 76.3.**

the second quarter of 2016 was a downturn in expectation about future conditions and future profits as both dropped below the 100-point baseline.

Oversupply was the primary reason cited for a weakening of future conditions. As one respondent noted, "[We're] waiting on a surplus of total meat to roll through, especially pork and imported beef. Chicken egg sets are still too high."

A potential supply/demand imbalance was also the primary driver behind concerns over future profits. A recent report from Rabobank suggested that a steady 2.5 percent per annum increase in overall protein supplies would most likely not have an immediate impact, but they did "expect the profit environment by the end of 2018 to look very different than it does today."

#### Inefficiencies with antibiotic-free production

Some respondents also blamed

» Read more by Greg Rennie:  
[www.WATTAgNet.com/authors/1641](http://www.WATTAgNet.com/authors/1641)

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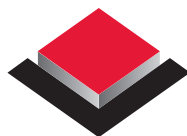
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reduced profits on inefficiencies associated with an increase in antibiotic-free production. One respondent said, “[The] move to

antibiotic-free broilers is causing a lot of live-production problems. Weights, daily gain, feed conversion and mortality are all being

impacted negatively.”

Interestingly, future opportunities remained above baseline levels even though both future conditions and profits did not. Expansion, retirements and the need for new skills and expertise (e.g., ABF production and VFD regulations) were the key drivers.

Finally, it’s worth noting no respondent mentioned the term “avian influenza” in this latest assessment. Although AI once dominated the “chatter,” it never dealt a serious blow to overall confidence.

### Summary

Confidence metrics remained high, although there was a marked downturn in perceptions for future conditions and profits. Balancing supply with demand, while accounting for increases in domestic pork production and beef imports, can positively impact future assessments. ■

*Greg Rennie, Ph.D., is president of Rennie Associates Inc. To contact Rennie, email [greg@rennieassociates.com](mailto:greg@rennieassociates.com).*

### DATELINES

Details @ [www.WATTAgNet.com/Events.aspx](http://www.WATTAgNet.com/Events.aspx)

» International Production & Processing Expo 2017, January 31-February 2, Atlanta, Georgia, [www.ippeexpo.com](http://www.ippeexpo.com)

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### TURKEY'S SHARE OF GROUND MEAT MARKET INCREASES

BY ROY GRABER

Turkey continues to increase in popularity as a choice for ground meats,

with expectations that its popularity will continue to grow.

James Snee, president and chief

operating officer of Hormel Foods, discussed the turkey trend on September 7 at the Barclays Global Consumer Staples Conference. Hormel Foods is the parent company of Jennie-O Turkey Store.

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### Turkey's share of ground meat category

Snee said one metric the company closely tracks is how much turkey makes up of the total ground meats category, and Hormel Foods has learned that it has steadily increased since 2010.

In 2016, it has just surpassed a 12 percent share in the U.S., he said.

### Jennie-O Turkey Store a category leader

Jennie-O Turkey Store has established itself as a leader in ground turkey, as Snee said it currently holds a 40 percent share of that category.

With the company investing heavily in its “Make the Switch” advertising campaign, Snee expects both turkey's share and Jennie-O's share to increase in the ground meats category.

“We know that will help us put more turkey on more plates,” said Snee. “We're confident that this investment is well-placed, and will continue to translate into top-line growth for years to come.”

Hormel Foods announced one day before the conference that Snee has been chosen to serve as Hormel's next CEO, replacing Jeffery Ettinger, who will retire from the post on October 30. ■



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### TYSON FOODS ON COURSE FOR MORE GROWTH

Executives from Tyson Foods told investors at the Barclays Global Consumer Staples Conference on

September 8 that the company is producing higher, more stable earnings and sales volume growth.



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“As stated on our last earnings call, our adjusted earnings guidance for fiscal 2016 of \$4.40-4.50 per share is 40 percent more than last year and represents a four-year compound annual growth rate of approximately 22 percent, and we’re confident we can achieve high single digit growth in fiscal 2017,” said Donnie Smith, Tyson Foods’ chief executive officer.

Tyson’s “Core 9” product lines, which feature the Tyson, Jimmy Dean, Hillshire Farm, Ball Park, Wright, Aidells and State Fair brands, are growing and gaining momentum, according to Tom Hayes, Tyson Foods’ president.

“The investments we made in the Core 9 to spur volume growth are generating returns,” he said. “We continue to outpace retail food and beverage. Tyson Core 9 is leading in volume performance among the top 10 consumer packaged goods retail food manufacturers, and Tyson Foods is one of only three companies to show growth in the latest quarter. We’re growing sales volume, sales dollar sales and market share,” Hayes said. ■





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### PERDUE DELIVERS 154,000 MEALS TO END HUNGER ON DELMARVA

Perdue Farms recently delivered more than 154,000 across Delmarva. The company teamed with the Delmarva Shorebirds — the Class A affiliate of the Baltimore Orioles — and three food banks for the season-long 2016 Perdue Strike Out Hunger Challenge on Delmarva.

To drive this year's Perdue Strike Out Hunger Challenge on Delmarva, Perdue Farms issued a \$15,000 challenge grant funded by the Perdue Foundation — the charitable giving arm of the company — to benefit the Eastern Shore Branch of the

Maryland Food Bank, the Food Bank of Delaware and the Foodbank of Southeastern Virginia and the Eastern Shore.

Each of the food banks were required to engage the Delmarva community to raise the equivalent of 10,000 meals in order to claim their equal share of the first \$10,000 of the Foundation challenge grant. This included any combination of pounds of food collected, funds collected and donated, or volunteer hours throughout the duration of the Shorebirds' season. Additionally, Perdue also donated \$10 for each time the Shorebirds' pitchers struck out an opposing batter up to \$5,000.

The Food Bank of Delaware generated more than 65,500 meal equivalents in support of the Strike Out Hunger Challenge this year. The Maryland Food Bank campaign produced more than 40,500 meals this year. The Foodbank of Southeastern Virginia and the Eastern Shore accumulated nearly 50,000 meals through volunteer hours and local food drives. ■

### OSHA CITES KEYSTONE FOODS FOR ALLEGED SAFETY VIOLATIONS

Keystone Foods has been cited by the U.S. Department of Labor's Occupational Safety and Health

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Administration (OSHA) for numerous alleged safety violations at its poultry plant in Bakerhill, Alabama.

According to OSHA, the agency was at the facility conducting an investigation after learning that an employee had allegedly been injured on March 7. The worker had apparently lost the tip of his left index finger while cleaning an overhead saw and making contact with the blade that was allegedly unguarded.

Keystone Foods faces up to \$76,734 in proposed fines. The company has 15 days to comply, request a conference with the OSHA area director, or contest the findings.

The facility, according to the

WATT PoultryUSA Top Companies Poultry Plants Directory, is a slaughter, bulk, deboning, portioned-form and cooking plant. ■

### HAIN CELESTIAL GETS NASDAQ NON-COMPLIANCE NOTIFICATION

Hain Celestial, parent company of Hain Pure Protein, received a notification letter from the Nasdaq Stock Market Inc. stating it no longer complies with the Nasdaq Listing Rule 5250, which requires timely filing of reports with the Securities and Exchange Commission.

The company expected to receive the notification after it failed to file

its annual report on form 10-K for the fiscal year ended June 30, 2016.

Hain Celestial announced that it was postponing the release of the reports, both for the fiscal year as a whole and for the fourth quarter, as it had identified concessions that were granted to certain distributors in the United States. The company stated that it was evaluating whether the revenue associated with those concessions was accounted for in the correct period, and that it was evaluating its control over financial reporting. The audit committee of the company's board of directors and an independent counselor have been conducting a review of those matters. ■

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# Will US poultry supply outpace consumer demand in 2017?

Rabobank's senior animal proteins analyst said exports need to increase for poultry producers to remain profitable over the next two years.

BY GARY THORNTON

U.S. meat protein supplies headed into 2017 are expanding in all sectors — beef, pork, chicken and turkey. As the chicken industry enters its fifth year of profitability, is the poultry supply finally on its way to outpacing demand?

Rabobank's senior analyst for animal proteins, Will Sawyer, said that the U.S. consumer's appetite for meat and poultry is going to be tested over the next two years as production expands in all animal proteins sectors at the same time — a relatively rare occurrence.

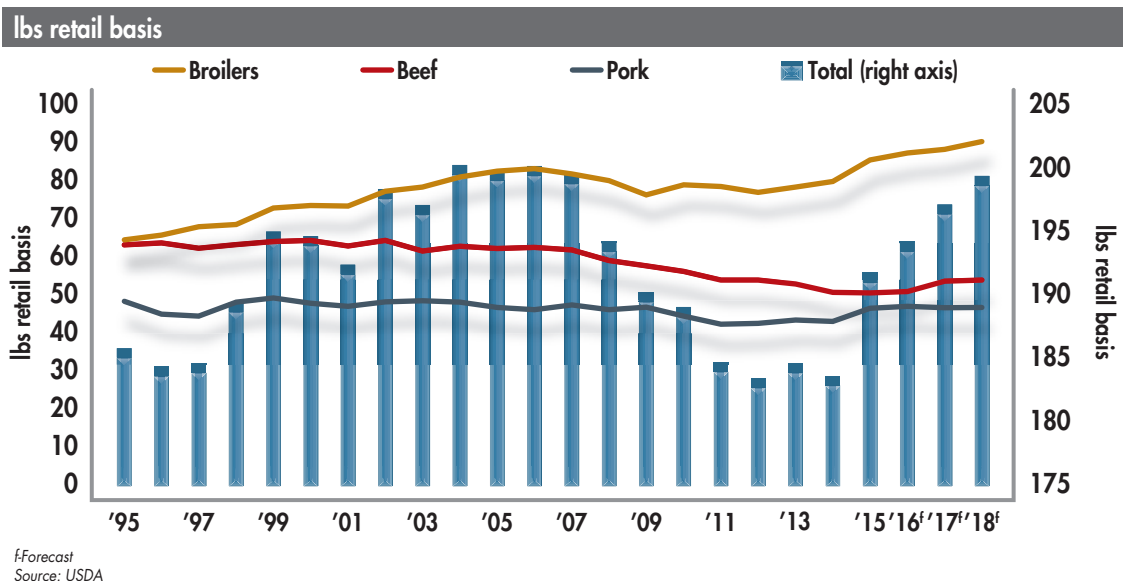
“We are looking today at one of the largest increases in U.S. meat production in a long time. U.S. meat production began to rise in 2015 and this trend is going

to continue,” he said to the USA Poultry & Egg Export Council (USAPEEC).

Rabobank is predicting there will be about a 2.5 percent increase in total meat production this year as the meat and poultry industries are all earning high margins.

“Every sector of animal meat protein production in the United States is now expanding capacity and doing their best to expand their customer base,” he said.

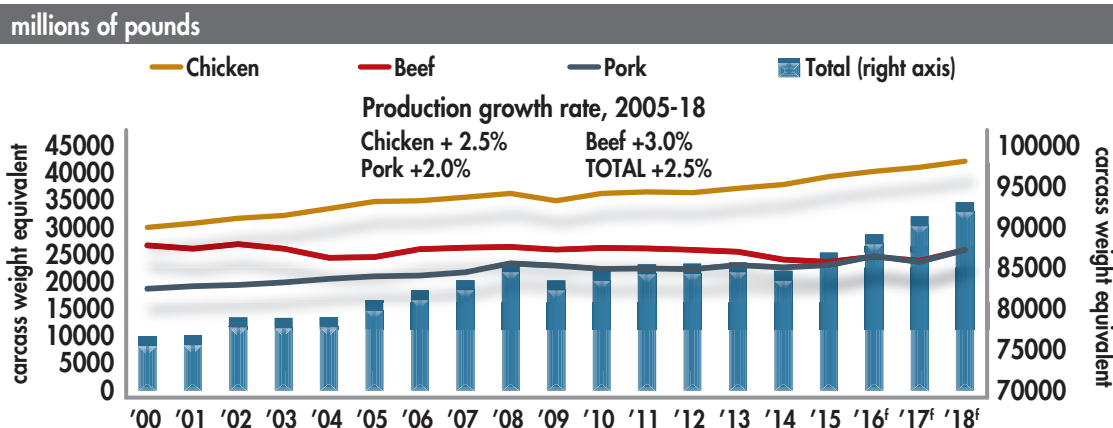
## US per capita protein consumption



The largest increase in per capita meat consumption in the U.S. in 40 years occurred in 2015.



## Annual US meat production by species, carcass weight equivalent



†Forecast  
 Source: Will Sawyer, Rabobank, presentation 2016  
 USA Poultry & Egg Export Council Annual Meeting

**Beef production will grow the fastest between now and 2018.**

### Largest per capita consumption increase in 2015

The largest increase in per capita meat consumption in the U.S. in 40 years occurred in 2015, Sawyer noted. Meat consumption rose by 5 percent, and the upward trend in meat production is going to continue, he predicted.

“Looking as far back as 2007 and through 2014, total volume of meat production in the U.S. was stagnant. That was because of the recession and high feed costs, but 2015 changed that equation,” he explained.

“Luckily, consumer demand for meat is strong, but the domestic market for meat and poultry is going to be pressured by the increases in supplies,” he said.

### Pickup in exports needed to support profitability

“Beef, pork and chicken producers need to find markets outside the U.S. for this story to play out well,” Sawyer said.

Retail beef prices could fall by 15 percent to 20 percent in the next two to three years, while pork and chicken prices could fall by 10 percent to 15 percent.

“The profitability of North American chicken producers has been on a pretty darn good run,” he said. “This year will be the fifth consecutive year of positive margins for North American chicken producers.”

That profitability is being driven today as much by higher export prices for leg quarters as by prices for chicken on the domestic market.

“This time last year, U.S. chicken producers were making their money on the domestic market, but with leg quarter prices having tripled [exports are now also contributing to the industry’s profitability]. That has come at a very good time as the domestic market has some challenges.”

### Peak levels of protein production by 2018

As production of meat proteins rise to the previous high levels within the next two to three years, trade will play a key role in the poultry industry’s profitability.



**Read more online:** Consumer demands: Key drivers in chicken marketing, [www.WATTAgNet.com/articles/27746.html](http://www.WATTAgNet.com/articles/27746.html)

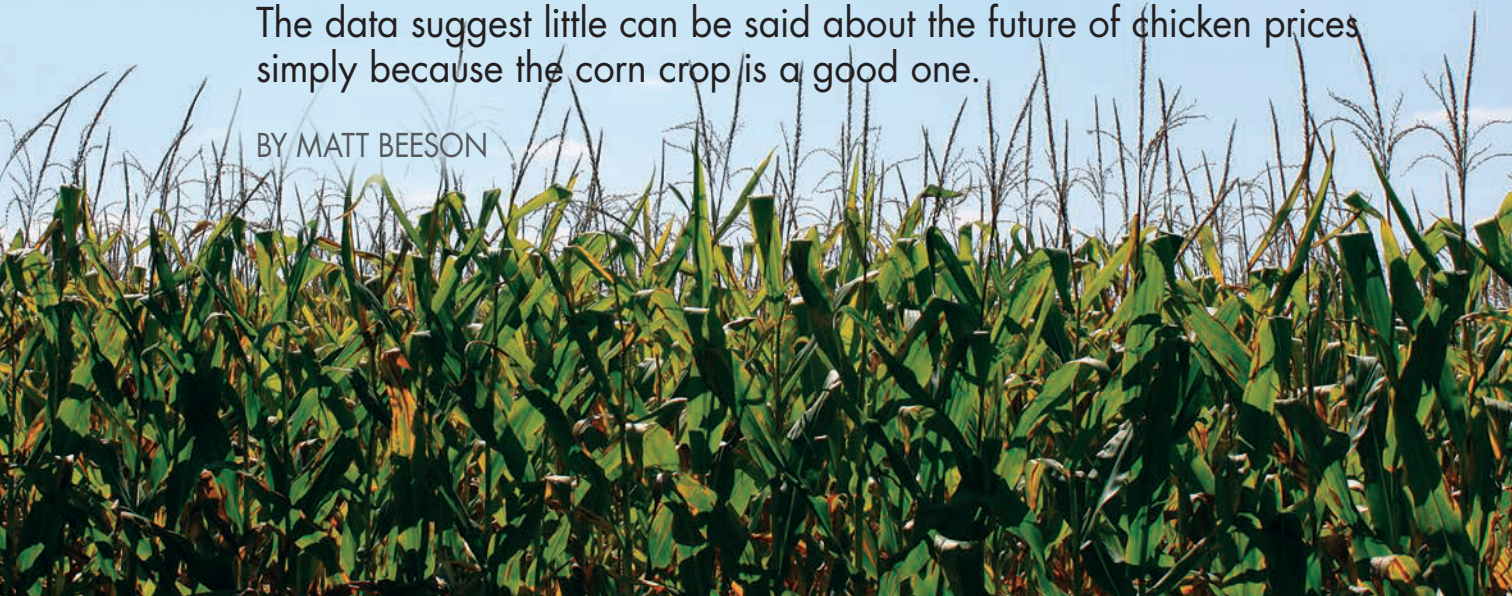
“When you consider that it took the meat and poultry industries a decade [since the recession of 2007-08] to rationalize supplies and get prices to the profitable levels of today, the expected increases in supplies will be rapid over a relatively short time period. We’re going to see the U.S. consumer’s appetite for meat tested,” Sawyer concluded. ■



# Bumper corn crop doesn't equal lower chicken prices

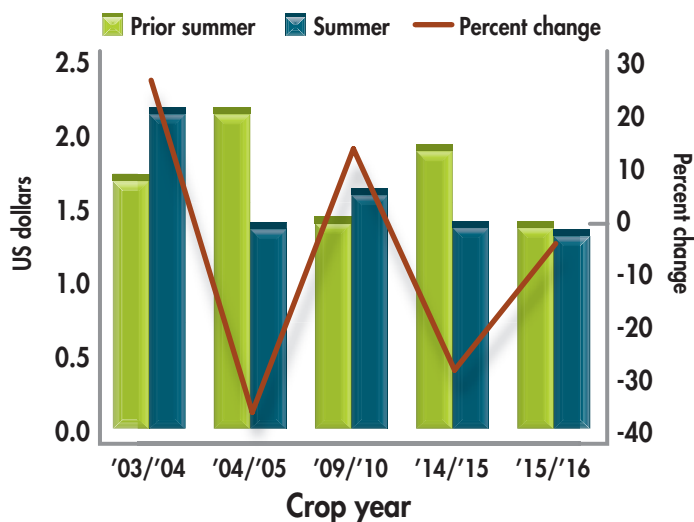
The data suggest little can be said about the future of chicken prices simply because the corn crop is a good one.

BY MATT BEESON



## Midwest jumbo boneless chicken breast prices

June through August



The crop years 2003-04 and 2009-10 show that bountiful corn crops don't necessarily lead to cheap chicken prices.

The U.S. Department of Agriculture (USDA) surprised the market with the forecast of huge (record by almost 4 bushels per acre) corn yields in this year's crop. Although not in the bin, it is great news for livestock producers. Feed costs will likely be the lowest since 2006. Does that mean cheap chicken?

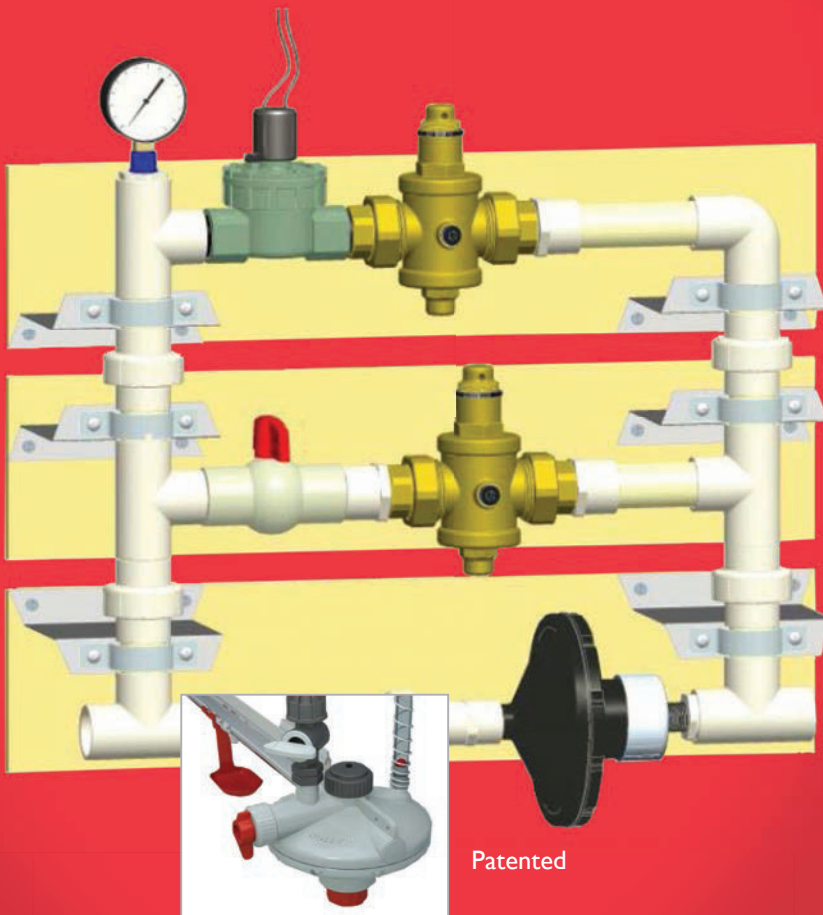
### Does cheap feed equal cheap meat?

Meat buyers say, "Cheap feed eventually equals cheap meat!" Academically, it is a simple argument. Lower costs improve returns and result in expanded meat production, which leads to lower-cost meat. It is a long trail, but it ends with a conclusion that is easy to defend. Data, however, suggests that this is not always the case.

Let's test the assumption made between supply, demand and prices. The table, which shows the record corn yield years since 2000, could be challenged as overly simplistic, but it is a basic test of the "cheap feed equals cheap chicken" theory. It summarizes the price of breast meat the summer before the harvest, the summer after the harvest, and the percentage change in price.

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Read more online: Preparing for poultry-foodservice contracts in 2017, [www.WATTAgNet.com/articles/27756](http://www.WATTAgNet.com/articles/27756)

**Unreliable assumption**

Looking at the summer prior to crop year 2003-04, breast meat averaged \$1.75 per pound. The summer after the record yields, prices averaged \$2.22. Despite the very good corn crop, pricing increased 27 percent. This example isn't isolated; a similar increase can be seen with

the 2009-10 crop year.

The data suggest little can be said about the future of chicken prices simply because the corn crop is a good one. Meat buyers will argue the case, but the data does not support the assumption that a big corn crop results in cheap chicken prices. ■

*Matt Beeson is founder and CEO of Beeson and Associates, a consulting firm that provides commodities risk management solutions based on price trends — working with commodity purchasing teams across the food manufacturing, foodservice, dairy and livestock industries.*

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An interview with  
Jon Schaeffer, DVM, PhD,  
Director of  
Veterinary Services,  
Zoetis

“ Avatec can be used in broilers year-round, which gives producers added flexibility. That’s in stark contrast to monensin or nicarbazin, which generally aren’t used in warm weather. ”

## Avatec®: What’s driving demand in broilers?

**Q:** We understand that demand for Avatec® (lasalocid) is now at record levels in the US broiler industry. What’s driving this trend?

**JS:** In a word: diversity. Coccidiosis medications have been known to lose their effectiveness when used for prolonged periods. We therefore use rotation and shuttle programs to keep them fresh and expose *Eimeria* organisms to something new and different.

Avatec meets this need on two levels. First, in contrast to the commonly used *monovalent* ionophores like monensin, narasin and salinomycin, Avatec is the only *divalent* ionophore. It has a different molecular structure, so it adds another dimension to the rotation. Second, by comparison to most other anticoccidials, Avatec has seen limited use in recent years and is therefore highly efficacious in most of today’s broiler flocks.

**Q:** Why hasn’t Avatec seen as much action as other in-feed anticoccidials?

**JS:** About 40 years ago, when the product was first introduced to the US, broiler diets were often formulated with high sodium levels — often 0.24% or more — to increase water consumption while using monensin, the primary ionophore at the time.

When producers shifted to Avatec and used it at the maximum dose rate of 113 g/ton of feed, some producers reported wet litter and sometimes “knock down” — a type of bird paralysis. Naturally, they thought Avatec was the culprit, but the problem had more to do with sodium. We now know that high levels of sodium simply aren’t compatible with this particular ionophore when it’s used at the highest end of the dose range.

**Q:** What’s the ideal dose rate for Avatec in broilers?

**JS:** The approved dose rate for Avatec ranges from 68 to 113 g/ton of feed. The rate you use should hinge on the degree of coccidial challenge, with a preference toward lower levels in





“US producers can now use Avatec with confidence when raising birds for Japan, Europe — all markets.”

the finisher phase wherever possible. Since Zoetis acquired Avatec in 2011, we've conducted numerous studies and demonstrated that, in most instances, feeding Avatec at lower levels — specifically, 68 to 81 g/ton of feed — will effectively prevent coccidiosis in broilers, especially in complexes where lasalocid hasn't been used recently.<sup>1</sup>

**Q: Do producers need to adjust electrolyte levels when using Avatec?**

**JS:** There are no special electrolyte requirements when the product is used at 68 to 81 g/ton. However, if there's a severe coccidial challenge and you're using the product at 113 g/ton, we recommend maintaining the electrolyte balance (Na+K-Cl) in the range of 172 to 240 milliequivalents per kilogram.

**Q: Are there any seasonal considerations when using Avatec?**

**JS:** None whatsoever. Avatec can be used in broilers year-round, which gives producers added flexibility. That's in stark contrast to monensin or nicarbazin, which generally aren't used in warm weather.

**Q: Today producers using a coccidiosis vaccine often want to supplement it with an in-feed anticoccidial. Can Avatec be used in these so-called bio-shuttle programs?**

**JS:** Absolutely. Avatec can be added once the vaccine's oocysts have finished cycling. In a study we conducted with Southern Poultry Research, broilers vaccinated *in ovo* for coccidiosis then fed Avatec at 68 g/ton of feed from day 18 to either days 35 or 50 and grown to 60 days — and despite a 10-day withdrawal period — showed at least a 3-point (0.03) improvement in feed conversion compared to birds vaccinated alone, while also maintaining immunity against coccidial challenge.<sup>2</sup>

**Q: Does using Avatec in broilers present any export barriers?**

**JS:** Not anymore. Studies show that its active ingredient, lasalocid, depletes from tissues rapidly after Avatec is withdrawn from feed. The EU and Japan have since adjusted their maximum residue limits for lasalocid so they're comparable with other ionophores. As a result, US producers can now use Avatec with confidence when raising birds for Japan, Europe — all markets.

For more information, contact [jon.schaeffer@zoetis.com](mailto:jon.schaeffer@zoetis.com) or call 919.602.8242.

<sup>1</sup> Data on file, Study Report No. 26-13-70AQ0, Zoetis LLC.

<sup>2</sup> Mathis G, et al. Effect of lasalocid or salinomycin administration on performance and immunity following coccidial vaccination of commercial broilers. *J. Appl. Poult. Res.* 2014;23:577-585.

## toolbox

*Toolbox* is a series of interviews with veterinarians about their experiences managing antimicrobials, vaccines and other tools for poultry health. It is produced by the editors of *Poultry Health Today*® on behalf of the US Poultry Business of Zoetis.

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# The expanding market for **slow-growing broilers**

Slow-growing Label Rouge broilers are entrenched in France, and the UK's welfare-approved flocks are gaining market share, but the Netherlands' slower-growing chickens dominate the fresh retail market.

BY GARY THORNTON

Slow-growing broilers will hold 90 percent of the fresh retail market for chicken in the Netherlands by the end of 2016, and the switch from conventional broilers to slower-growing chickens has been dramatic and swift — occurring in less than three years.

Speaking at the 2016 National Chicken Council Chicken Marketing Summit, Claude Toudic, technical manager, Hubbard France,

said that by 2020 all chicken meat sold in retail grocery stores in the Netherlands will be from slower-growing production schemes.

Already in 2016, between 25 percent and 30 percent of all Dutch broiler production is in slower-growing breeds and regimens, he said. The total share is offset to some degree by the fact that a large portion of the country's broiler production is exported. The

Netherlands is almost 200 percent self-sufficient for broiler meat.

## Market segments for slow-growing chicken

With the Dutch market's switch from conventional broilers on fresh shelves for both dressed carcasses and cut-up chicken parts — and a lack of interest for the free range concept — Toudic said the market is now split in three segments:

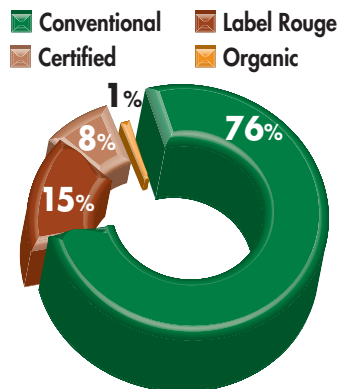


**Better Life 1-Star broiler flock has lower stocking density for Hubbard JA757 broilers with access to 'winter garden' through pop-holes, at right.**

Photo courtesy Impex

## Slow-growing broiler market share in France

Percentage of broiler chicken slaughtering in 2014



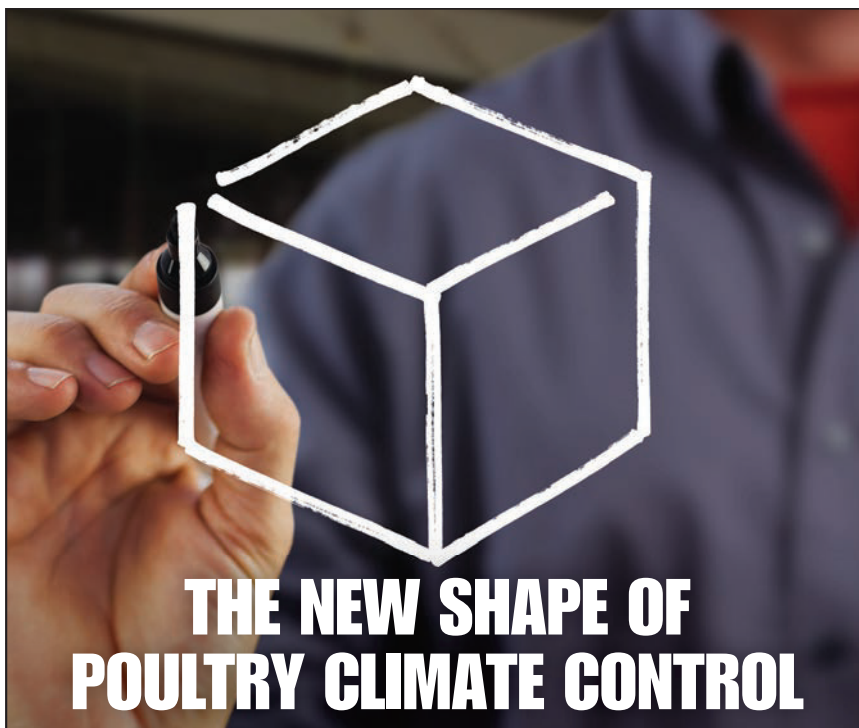
Source: Claude Toudic, Hubbard France, 2016 Chicken Marketing Summit; ITAVI

About 15 percent of broilers slaughtered in France are slow-growing Label Rouge breeds. Growth in the sector has plateaued since 2000 as consumers demand more cut-up chicken.

- Chicken of Tomorrow (COT) and New Standard Chicken (New STD) — 70 percent retail share — were introduced in 2013 and 2014 by retailers and the chicken industry in response to public pressure about fast-growing conventional broilers. Limits on average daily weight gains (ADG) are 50 grams for COT and 45 grams for New STD and other similarly less stringent standards than for alternative slow-growing production programs (see table, “Conventional vs. slow-growing broiler production standards, Netherlands”).
- Better Life 1-Star, introduced in 2007, has 20 percent retail

share. A 56-day indoor growing program with a maximum 42 gram per day ADG provides natural light for birds and “pop holes” for access to 20 percent to 25 percent additional floor space in “winter garden” or “porch.”

- Organic chicken meets EU and SKAL (organic control authority) requirements including access to fresh air and outdoor space (minimum 4 square meters run space) and organic feed (consisting of at least 20



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## SLOW-GROWING BROILERS

**Conventional vs. slow-growing broiler production standards, Netherlands**

Production system	Conventional (average)	Chicken of Tomorrow - New Ahold Chicken	Chicken of Tomorrow - New Standard Chicken (Jumbo)	56-day + Winter garden
Breed	Fast growing	Slower growing	Slower growing	Slow growing
Average daily gain g/day (lb/day)	±60-65 (0.13-0.14)	Max. 50 (0.110)	±45 (0.099)	±42 (0.093)
Killing age (days)	No limit	No limit	≥49 days	≥56 days
Density kg/m <sup>2</sup> (lbs/ft <sup>2</sup> )	42 (8.60)	38 (7.78)	30 (6.14)	25 (5.12)
No. broilers/m <sup>2</sup> (ft <sup>2</sup> /bird)	21 (0.512)	16 (0.672)	13.5 (0.797)	12 (0.897)
Extra material	No	Bales of straw + grain	Bales of straw + grain	Bales of straw + grain
Access to range	No	No	No	20-25% Winter garden
Use of windows	No	No	3% of floor surface	3% of floor surface
Lighting program	≥6h dark (of which 4h in 1 period)	≥6h dark	Natural daylight with ≥6h dark	Natural daylight with ≥8h dark in 1 period
Use of antibiotics	Avg 17.6 day doses/yr (2013)	Max 17 doses per year	Max 17 doses per year	Avg 0.5% of flocks treated (2015)
Stunning method	Electrical + CO <sub>2</sub>	Electrical + CO <sub>2</sub>	Electrical + CO <sub>2</sub>	2-phase CO <sub>2</sub>

Source: Claude Toudic, Hubbard France, 2016 Chicken Marketing Summit

**A range of production schemes are used for slow-growing broiler flocks in the Netherlands.**

percent grown at the farm or in the region from non-GMO grains).

**Price ranges for chicken breast meat**

Compared to breast fillets from conventional chickens, COT fillets are about EUR2 (USD2.2) per kg more expensive and Better Life 1-Star fillets are EUR2 per kg more expensive than COT, said Toudic.

The Chicken of Tomorrow and Better Life 1-Star chicken, nonethe-

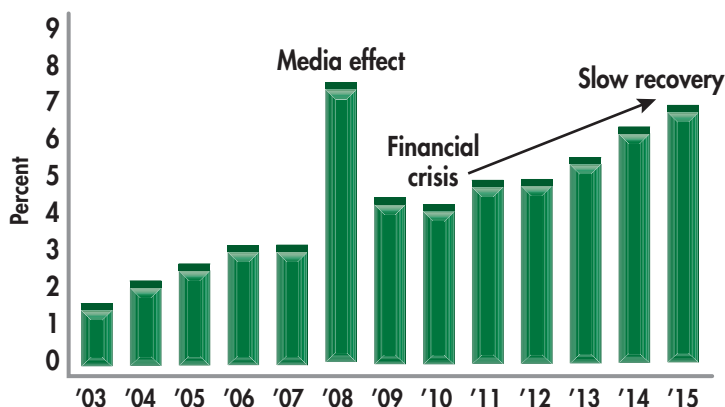
less, are competitive with pork meat, he said. Organic chicken, on the other hand, is more than three times more expensive than conventional chicken.

**Plofkip chicken changed production**

What led the Dutch poultry industry to such dramatic, rapid adoption of slow-growing broil-

**Slow-growing broiler market share, UK**

Source: Claude Toudic, Hubbard France, 2016 Chicken Marketing Summit



**The UK market is sensitive to both animal welfare and price concerns. The long-term trend is for increased shares for slower growing breeds.**

## 2017 CHICKEN MARKETING SUMMIT

The 2017 Chicken Marketing Summit is scheduled for July 16-18 at the Omni Grove Park Inn, Asheville, North Carolina. To learn more, go to [www.WATTGlobalMedia.com/ChickenMarketingSummit](http://www.WATTGlobalMedia.com/ChickenMarketingSummit)

ers? While consumers and activists in the Netherlands have had a long-standing concern with animal welfare, it was the plofkip chicken that triggered the takeover by slower-growing production schemes.

Plofkip in the Dutch language means exploding chicken. As Toudic explained, this was the central image of an advertising campaign conducted by the animal welfare activist group Wakker Dier (Awake Animal) in 2012.

The ad campaign played on consumer concerns about animal welfare with imagery of fast-growing (exploding) chickens. Comparing an organic chicken of 930 grams to a conventional broiler of 2,350 grams, the campaign portrayed the conventional broilers as barely able to walk and asked consumers to stop buying plofkip chickens and instead buy slower-growing broilers.

“The campaign has been extremely successful,” Toudic said.

“The communication has been focusing on restoring the link between what people eat and how

chickens are living. The word Plofkip [exploding chicken] has nearly 100 percent name recognition in the Netherlands and was chosen the most famous new word in Dutch language in 2012,” he said.

### Attributes of slow-growing broilers

Toudic presented data showing welfare and carcass quality advantages for slower-growing broilers. Pertinent to the welfare messaging



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SLOW-GROWING BROILERS

**Slower growth's effect on broiler meat nutritional features**

Chemical composition of breast fillet meat

Breed	Conventional	Conventional X Label Rouge	Label Rouge X Label Rouge
Age	6 weeks	8 weeks	12 weeks
Live weight (g/lbs)	2,496/5.50	2,650/5.84	2,877/6.34
% dry matter	24.95 <sup>b</sup>	25.35 <sup>b</sup>	26.29 <sup>a</sup>
% protein	23.83 <sup>b</sup>	24.30 <sup>ab</sup>	24.66 <sup>a</sup>
% fat	1.25 <sup>a</sup>	1.01 <sup>b</sup>	1.18 <sup>ab</sup>
Fiber section (µm <sup>2</sup> )	2,168 <sup>a1</sup>	1,834 <sup>ab</sup>	1,719 <sup>b</sup>

a,b significant at P<0.05; <sup>1</sup>3,000 µm<sup>2</sup> in 2012  
Source: Claude Toudic, Hubbard France, 2016 Chicken Marketing Summit; Cecile Berri, et al., INRA France, 2005

The lower fiber section for progeny of Label Rouge females prevents myopathy lesions (white striping and woody breast).

of the plofkip chicken campaign, a Dutch study evaluated chicken's walking ability and showed that slow-growing broilers have three times less trouble in walking compared to conventional chickens.

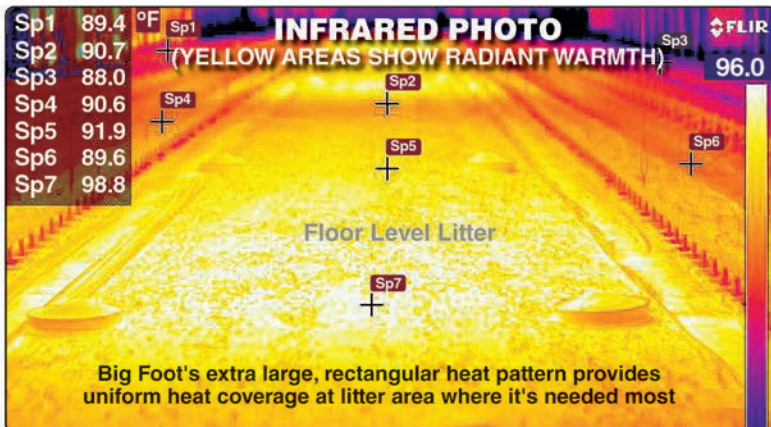
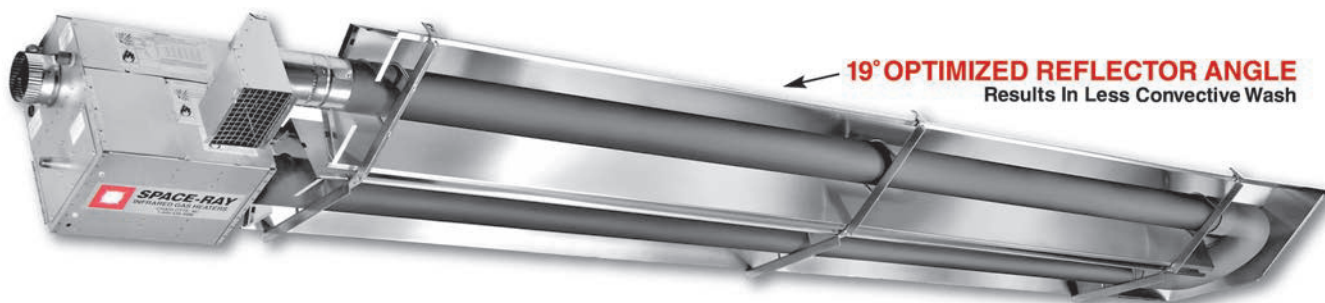
**Slower growth's nutritional features**

He also cited potential advantages for slower broiler growth in the lower fiber section for progeny of Label Rouge females which prevents

myopathy lesions (white striping and woody breast).

Additionally, progeny from the slow-growing Label Rouge breeding stock has higher fillet dry matter and higher protein content compared to

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## Live performance in representative conventional and slow-growing broilers

Production system	Conventional	Chicken of Tomorrow - New Ahold Chicken	Better Life 1*
Breed	Conventional	Hubbard JA987	Hubbard JA757
Mortality %	3.5%	2.5%	1.5%
Age (days)	40	49	56
Live weight (g/lbs)	2,400/5.29	2,400/5.29	2,400/5.29
Feed conversion ratio (FCR)	1.6	1.9	2.1

\*COT AH: 1% less mortality than Conventional and + 30 points FCR Better Life 1μ is 20 points FCR higher than COT AH  
Source: Claude Toudic, Hubbard France, 2016 Chicken Marketing Summit

**Feed conversion efficiency is not as favorable for slower-growing broilers but flock mortality is lower.**

conventional broilers. And the intermediate cross (as used for RSPCA, Certified and BLK 1-Star breeds) has more dry matter and protein and lower fat content.

### Improved tenderness and flavor profile

Age is the main factor involved in the evolution of tenderness, juiciness and flavor, according to data present-

ed. However, the research report stipulated that the best compromise varies with eating culture and experience.

### The consumer and the citizen

“Consumers are looking for price, convenience, food safety and taste in the chicken they buy,” Toudic said. But more and more consumers are equally concerned about the price and the animal wel-

fare aspects associated with their chicken consumption, he indicated.

“With the consumer-citizen no longer having any relationship to agriculture, they follow social networks and are influenced by the animal welfare associations. The consumer often acts differently to the citizen, but the general population’s awareness of all of these issues is growing,” he concluded. ■

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# How to safely cut antibiotic use in poultry production

Disease will always emerge, but combined risk-reduction strategies can minimize the need for antibiotics

BY MARK CLEMENTS

The risk of disease in poultry production is ever present, but as livestock producers face growing pressure to eliminate preventive use of antibiotics, new and complex challenges have emerged.

However, there are numerous strategies that can be followed to minimize disease risk and to ensure birds are better able to resist infection. These, along with emerging strategies to better target when and where treatment may be needed, came under the microscope at

the Poultry Summit Europe 2016, which was held in Utrecht, The Netherlands, in mid-May.

## Antibiotic-free poultry

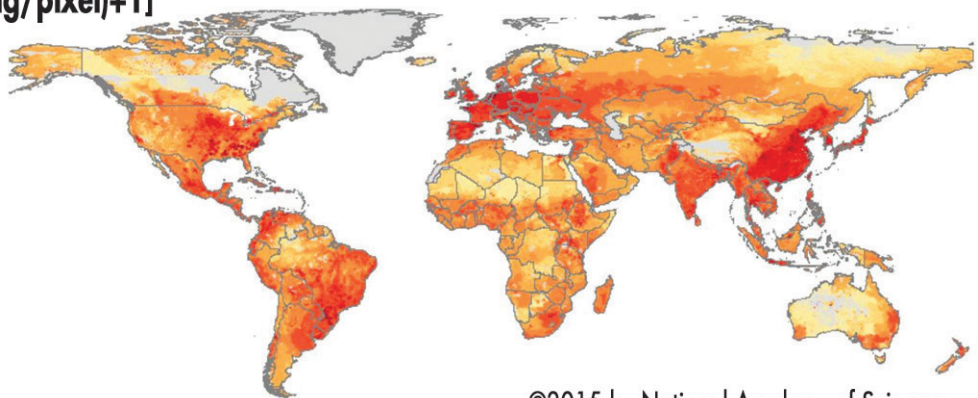
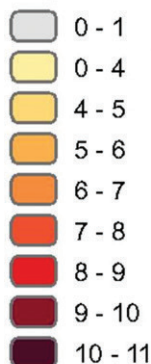
Antibiotic-free production in many developed markets is no longer simply an option but a growing necessity and, according to Willem van de Oetelaar, HatchTech hatchery coaching manager, steps can be taken from the start of a chick's life to minimize future need for antibiotics.

It is important to get back to basics, he believes. Stress and its impact on triggering subclinical diseases are far too often underestimated. If the stresses of thirst and hunger can be removed during a chick's first days of life, and the chick is given only a gradual introduction to light and minimal handling, then stress will be minimized and the chick will be given the best possible start.

Giving chicks the best start was echoed by Adrian Smulders,

## Global antimicrobial consumption in livestock in milligrams per 10 km<sup>2</sup>

Log 10 [(mg/pixel)+1]



©2015 by National Academy of Sciences

Despite efforts to reduce antibiotic use, the volume consumed globally by the pig and poultry industries is expected to rise as demand for meat grows.

species technology manager and additives lead with Cargill Premix and Nutrition EMEA.

Increasing attention is being paid to gut health, and it is during the first few days of life that the chick's intestinal tract is formed. Correct early feeding is essential if the intestinal tract is to be optimally formed, and so better able to resist any disease challenges in later life, Smulders said.

### Good biosecurity

Assuming that chicks have been given the best possible start in life, that investment needs to be protected.

Professor Jeroen Dewulf of the faculty of veterinary medicine at

## Optical flow compares the patterns of light and dark in successive images



(a) Image frame at time  $t$



(b) Image frame at time  $t + 1$

Optical flow is among the technologies being examined to determine the emergence of disease earlier in poultry production, so permitting more targeted treatments.

Ghent University, raised the importance of good internal and external biosecurity, since strong biosecurity will result in less disease.

There is, however, little hard data on what actually constitutes good biosecurity and producers too often put an emphasis on re-



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## HOW TO SAFELY CUT ANTIBIOTIC USE

ducing small risks, failing to address the more important challenges.

To this end, the university has developed a simple and free biosecurity scoring system for pig and poultry producers. External biosecurity accounts for 70 percent of the total score in broiler production, while internal biosecurity — comprised of disease management, cleaning and disinfection, and materials and distance between houses — accounts for the remainder.

The system offers a simple pass/fail result. Dewulf notes that, on some farms that have taken the test and subsequently engaged in counseling to improve biosecurity and reduce antibiotic use, antibiotic treatment days have declined by 29 percent.



**Antibiotic resistance not solved by livestock curbs alone**

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### Keeping birds healthy

Disease threats can come from a variety of sources, including feed, litter, air and water. What is key is to minimize those threats and keep birds in the best possible condition to reduce susceptibility.

Damaged lungs due to a build-up of ammonia in the poultry house, for example, will be more susceptible to infection, so even ventilation can play its part in reducing the need for antibiotic treatments.

### Gut health

Professor Leo den Hartog of Wageningen University looked to nutritional strategies and the gut to aid in the responsible use of antibiotics.

Managing intestinal health can be achieved through preventing intake of bacteria, managing the microbiota, improving the intestinal barrier and immunomodulation.

There are three pillars for antibiotic reduction at the farm level, he argues:

- Good farming management and hygiene practices



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Good nutrition is the foundation for gut health, but functional feed additives can support animal health and growth while reducing the risk of disease. Antibiotics should be used when needed, he said, but improving and stabilizing the gut microbial balance can mean that there may no longer a need for antibiotics to control gut health.

### Importance of welfare

Professor of Animal Behavior Marian Dawkins of Oxford University looked at how animal welfare and disease are connected, noting that good welfare leads to lower mortality, lower injury and disease levels, and reduced risk to humans.

However, welfare is too often evaluated at the end of the production cycle, and she and her team have been trying to look much earlier by using optical flow technology.

Measuring flock behavior has revealed that flocks with poor welfare move more slowly, while flocks with higher welfare move more quickly. The technology measures which flocks will have more hock burns, for instance.

The Oxford team has been looking at several important production diseases, including *Campylobacter*, and optical flow has distinguished positive from negative flocks.

The poultry industry pro-

duces huge amounts of data. Bouke Hamminga, director of international sales and business development with Pas Reform, argues that any data needs to be handled with care,

including where antibiotic usage is concerned.

Despite the poultry industry already having a gold mine of production data, much is still not analyzed. ■

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# Poultry vaccines may control future **avian flu outbreaks**

A leading USDA researcher says vaccines could play a big role in stopping the spread of highly pathogenic avian influenza and be part of an eradication plan.

BY AUSTIN ALONZO

In light of the destruction caused by 2015's highly pathogenic avian influenza (HPAI) outbreak, top U.S. Department of Agriculture scientists are studying the disease and how vaccines could play a

role in containing it in the future.

Dr. David Suarez, research leader for exotic and emerging avian viral diseases research at the USDA Southeast Poultry Research Laboratory, shared the

results of his team's

work studying the virus since

the 2015 outbreak that rocked the U.S. layer and turkey industries. He spoke as part of Animal Health in the Heartland, a symposium on biotechnology's role in emergency preparedness held July 20 in Omaha, Nebraska.

Suarez discussed the Southeastern Poultry Research Laboratory studies of the disease and its spread, effective vaccinations against avian influenza, and possible future innova-



Richard Wozniak/Dreamstime.com

tions that could control the disease and preserve trade relationships.

### Looking back on the 2015 outbreak

After researching the disease in chickens, turkeys and other bird species, it was concluded that ducks were likely the source of infection in the U.S. Suarez supports the theory that wild birds introduced the disease to domestic flocks and later outbreaks were transmitted from farm to farm. As the virus moved from bird to bird, Suarez said, it became more adapted, making it increasingly harder to control. This result supports the urgency of stamping out the disease quickly to prevent another large-scale outbreak.

Suarez said he believes the disease could persist in wild birds for three to five years, but so far there isn't any evidence of the virus circulating among wild birds. That's a positive, he said, but there is another migration season coming and, while the USDA tests a large number of birds, it's only a small segment of the wild bird population.

### Vaccine can control HPAI

As part of its research mission, the lab studied vaccines as a possible outbreak control measure. Suarez said if the outbreak becomes large enough, a vaccine could be administered to control the disease's spread. The lab set out to see which currently available or developing vaccines might

be useful against the disease.

In general, Suarez said, vaccines can be used to control the scale of an outbreak. If used as part of a larger plan, vaccines can greatly reduce disease shed-

ding and cut the links of the disease transmission chain and, possibly, play a role in eradication of a disease. He said some countries, like Mexico, China and Vietnam, have vaccination

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## AVIAN FLU OUTBREAKS

programs but don't use a comprehensive biosecurity strategy, and that can lead to avian influenza becoming endemic.

Even if an effective avian influenza vaccine is available, it would suffer the serious drawback of creating a possible trade barrier. Suarez said about 20 percent of U.S. poultry is exported and the country can often export the product cheaper than other countries can produce it. Many countries are looking for any reason to block U.S. poultry exports and protect their domestic industry, he said. An avian influenza vaccination program could be seen as evidence the disease is present in the U.S. and create a powerful non-tariff

**Dr. David Suarez, representing at the USDA Southeast Poultry Research Laboratory, speaks at the Animal Health in the Heartland symposium in Omaha.**

trade barrier.

After studying commercially available and emerging vaccines and biotechnology, the lab concluded the newer vaccines are better than the ones it started working with in early 2015, but they are still far from where they need to be.

As for practical vaccination, the best times for vaccination vary depending on the bird. For broilers, a single vaccination *in ovo* or at one day of age is needed; for layers and



turkeys, vaccination at one day of age and then a booster at three to four weeks of age is needed. Layers may need an additional booster later in life. Suarez said there is substantial interest in developing vaccines for game birds, waterfowl, zoo birds and hunting raptors.



**Read more online:** Avian flu vaccination doesn't mean ignoring biosecurity, [www.WATTAgNet.com/articles/26303.html](http://www.WATTAgNet.com/articles/26303.html)



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## DIVA and the future of vaccines

Suarez said there is significant interest in developing DIVA (differentiate infected from vaccinated animals) vaccines, or vaccines that demonstrate the difference between vaccinated animals and vaccinated and then infected animals.

The vaccines would allow the U.S. to demonstrate to its trading partners that vaccinating birds does not mean they are exposed to the virus and give farmers the ability to remove exposed birds from the export market. Suarez said the country's trading partners want clean birds with no chance of moving the virus through poultry products. Suarez said the vaccines would also need inexpensive tests to complement them. Ideally, the DIVA strategy would allow U.S. farmers to protect their flocks from HPAI and provide enough data to prove trade won't spread the disease.

Beyond DIVA, other biotechnology improvements can be applied to poultry at a cost-competitive rate with vaccines currently being used. However, any vaccine will need to closely match the field strain to be effective. Commercial interest in developing avian influenza vaccines, however, remains low because a single vaccine produced year after year will likely not be effective against avian influenza consistently.

Coupled with effective biosecurity measures, a vaccine — bio-

engineered or not — could be an important part of an eradication strategy. The U.S. will need a DIVA strategy in place if it begins

vaccinating against avian influenza, so developing the vaccine and the use plan is a long-term goal for the industry. ■

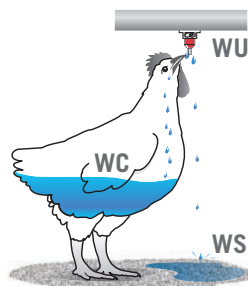
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# Climate change spurs rise in mycotoxin contamination

World Mycotoxin Forum lectures point to common threat to human, animal health and global trade

BY JACKIE ROEMBKE

Lectures at the 2016 World Mycotoxin Forum (WMF) addressed aspects of the event's theme, "Mycotoxins in a changing world"; however, the consensus among many speakers touched on the undeniable impact climate change has had — and will increasingly have — on mycotoxin contamination in the global food and feed supply.

In coming years, agriculture will need to deal with a varied group of issues related to climate change and

its residual effects: Grain producers may need to adjust how they plant, what they plant and when. Warmer weather will usher in more insect and fungi infestations which, in turn, will result in increased use of pesticides and fungicides. And, as the representatives from European stakeholder agencies reported, climate change is likely to increase the prevalence of mycotoxins in many countries — affecting animal and human health, feed and food quality, and global trade.



Issues related to climate change mean grain producers may need to adjust how and what they plant and when they plant it.

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## MYCOTOXIN CONTAMINATION

**Mycotoxins,  
climate change and health**

“All of us know the temperature is increasing, and this means there will be more incidents of mycotoxin contamination in certain areas,” said Dr. Mari Eskola, science officer on the biological hazards and contaminants team with the European Food Safety Authority (EFSA).

accept lower quality? Will we need to accept that there are more fungicides and pesticides in our food and feed?”

“Climate change is one of the key emerging issues — not just with mycotoxins — but with risk exposure in general,” said Dr. Vittorio Fattori, Food & Agriculture Organization of the United Nations (FAO) and FAO/WHO Joint Expert Committee on

**CLIMATE CHANGE WILL FORCE  
the food and feed industries to  
review the risks and benefits**

She went on to point out that new mycotoxins may emerge, mycotoxins may appear in regions where they had not commonly been found before, and the food supply chain will encounter more modified mycotoxins and an increase in co-occurrences — defined as more than one type of mycotoxin working together to create adverse health effects.

According to Eskola, climate change will force the food and feed industries to review the risks and benefits in the future: “We may need to accept there will be more mycotoxins in our food, that the concentrations are higher. Do we need to

Food Additives (JECFA).

On this note, the number of speakers suggested that food shortages may be caused by high levels of mycotoxin contamination in parts of the world. And, in areas where high levels are consumed, there will be an increase in certain types of cancer, chronic illnesses and long-lasting impacts on the development of children and infants. In food-producing animals, farmers will experience lost productivity and more mycotoxin-related deaths.

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economic impacts**

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- The Council on Agricultural Science and Technology (CAST) Report “Animal Feed vs. Human Food: Challenges and Opportunities in Sustaining Animal Agriculture Toward 2050”
- National *Salmonella* Feed Sampling Project
- “How Will We Feed Livestock as Agriculture Evolves in the 21st Century” national study conducted by the Council for Food and Agricultural Resource Economics (C-FARE)



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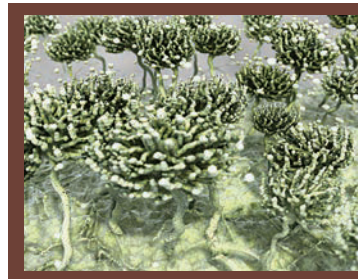


## MYCOTOXIN CONTAMINATION

feed safety, increased mycotoxin contamination will also take a tremendous toll on the economies of the countries most impacted, specifically as it relates to their ability to export commodities to markets with low mycotoxin thresholds.

“In the perfect scenario, maximum levels are set so they are protecting public health, but also achievable through good management practices,” said Frans Verstraete, M.Sc., directorate general of health and food safety European Commission (EC), the agency responsible for setting maximum levels (ML) for mycotoxins in the EU. “However, the last few years we have been comforted situations where extreme weather conditions made it impossible to achieve the threshold even with good practices.”

In Africa, for example, \$670 million in trade is lost due to mycotoxin levels consistently exceeding the



Read: Aflatoxin feed contamination: What you need to know  
[www.WATTAgNet.com/articles/26832](http://www.WATTAgNet.com/articles/26832)

maximum levels of export countries, reported Ranajit Bandyopadhyay with the African Union Commission.

### Mycotoxin risk mitigation

Building off research conducted in 2003, an updated USDA economic research report suggests the impact of revenue lost to mycotoxins will increase in the short term — and the effects of climate change will likely push these losses higher in the future.

“The increased prevalence of high mycotoxin levels are a fact and the major cause is climate change,”

Verstraete said. The EC concluded that in order to have a sustainable situation a comprehensive approach needs developed, one that takes into account “constraints from an agricultural point of view and from an environmental perspective.” The EC plans to develop this “comprehensive strategy” for mycotoxin risk mitigation in the future.

The 2016 World Mycotoxin Forum, a biennial joint meeting of The World Mycotoxins Forum and IUPAC International Symposium on Mycotoxins, was held in Winnipeg, Canada, June 6-9. ■



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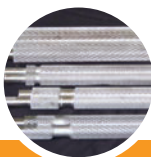
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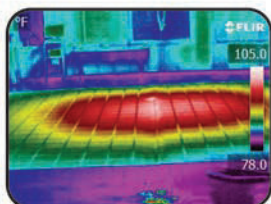


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## What's behind FDA's updated veterinary feed directive?

An interview with LLOYD KECK, DVM, senior technical services veterinarian, Zoetis



“  
Judicious use means administering an antimicrobial medication appropriately and only when really necessary.”

**Q: What's the reasoning behind the updated veterinary feed directive (VFD) rule that takes effect January 1, 2017?**

**LK:** FDA recognizes the important role antimicrobials play in maintaining the health, performance and welfare of poultry and livestock. At the same time, it wants them used in ways that address public health concerns, specifically antimicrobial-resistant infections in people. FDA is, therefore, encouraging more “judicious” use of antimicrobials in food animals if the medications are considered medically important to human medicine.

**Q: What does this mean in practical terms for poultry producers?**

**LK:** It means FDA is requiring increased veterinary oversight when medically important antimicrobials are used in food animals. Before *feeding* a medically important antimicrobial to poultry flocks — chlortetracycline, tylosin or virginiamycin, for example — producers and their feed mill will need to obtain a VFD from a licensed veterinarian. If a medically important antimicrobial is to be administered *in water*, a traditional prescription from a licensed veterinarian — an Rx — is required as of January 2017.

Fortunately, this new process should prove to be relatively seamless for integrated poultry companies that have full control over production, feed and veterinary care.

**Q: Why has FDA focused on oral medications?**

**LK:** Because they are well suited to mass administration — and therefore of greater concern than, say, injectable medications, which have to be given to one animal at a time and typically only for therapeutic purposes.

**Q: What does FDA mean exactly by “judicious” and “non-judicious” use of an antimicrobial?**

**LK:** Judicious use means administering an antimicrobial medication appropriately and only when really necessary. An example would be using an antimicrobial for treating clinically sick birds, to control a spreading disease or to prevent a prevalent disease like necrotic enteritis in flocks at risk, according to FDA.

Non-judicious use would be using a medically important antimicrobial without veterinary consultation or

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ISSUE

1

What's behind FDA's updated veterinary feed directive?

a VFD or using any antimicrobial — medically important or not — for a purpose not on the label.

**Q: How does FDA determine which antimicrobials are medically important to humans?**

**LK:** Medically important antimicrobials fall into three different categories: important, highly important and critically important.

An antimicrobial is *important* if there is cross-resistance within its drug class, or linked resistance with other drug classes. These types of resistance occur when disease-causing bacteria become tolerant to one drug through exposure to another similar drug.

An antimicrobial is *highly important* if it's used to treat enteric pathogens that cause food-borne illness, or if there are no or few other alternatives for treatment of human disease.

Finally, if it satisfies both of these criteria, FDA considers it *critically important*.

**Q: Under the updated rule, can any in-feed antimicrobials be used to enhance the performance of poultry flocks?**

**LK:** Not if they are deemed medically important by FDA. However, indications such as “increased rate of weight gain” and “improved feed efficiency” will still be approved for poultry antimicrobials that aren't considered to be medically important. Examples are BMD (bacitracin

methylene disalicylate) and Flavomycin 4 (bambermycins).

**Q: As a poultry veterinarian, what are your thoughts on FDA's updated VFD rule?**

**LK:** I fully support government initiatives to promote more judicious use of medically important antimicrobials. Sure, it will mean a little more paperwork and recordkeeping for veterinarians, feed mills and producers, but it's a minor inconvenience if it helps ensure long-term antibiotic efficacy for both humans and animals.

Furthermore, the new rule applies to less than 15% of the feed medications used in US poultry. The rest — ionophores, synthetic anticoccidials, bacitracin and bambermycins — are not deemed medically important by FDA and therefore won't require a VFD.

**Q: How will the industry know if the updated VFD rules have been a success?**

**LK:** That remains to be seen. We know FDA and USDA are collaborating with other scientists to develop a new mathematical model that'll provide a more complete picture of the relationship between antimicrobial use in food-producing animals and resistance. It will be important for all industry stakeholders — veterinarians, producers and feed-mill managers — to pay close attention to this evaluation process and make their voices heard.

“...FDA is requiring increased veterinary oversight when medically important antimicrobials are used in food animals.”

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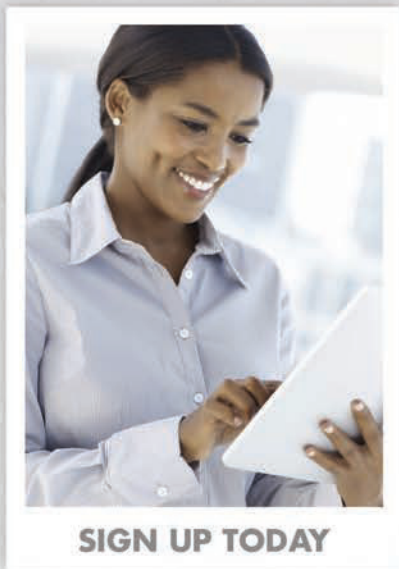


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## AD INDEX

Adisseo Animal Nutrition Inc .....	34, 40
Alltech Inc .....	31
American Feed Industry Assn.....	38
BASF Professional and Specialty Solutions .....	C3
Binkley & Hurst.....	38
BMO Harris Bank National Association .....	29
CEVA.....	C4
Chore-Time .....	23, 25
Cumberland Div of GSI Group.....	33
DeLong's Gizzard Equipment.....	42
Detroit Radiant Products.....	42
Diamond V.....	5
Diversified Imports DIV Co Inc .....	17, 30
Evonik N Amer (GA) .....	10
Gas-Fired Prods Inc/Space Ray .....	26
Georgia Poultry Equipment Co .....	41
H J Baker & Bro Inc.....	13
Hubbard LLC .....	8
Jones-Hamilton Co .....	39
Kemin Industries.....	7
Liphatech Inc .....	C2
Live Oak Bank .....	18
Merck Animal Health/USA.....	3
Merial Inc .....	11
Meyhen Intl Corp .....	37
Neogen .....	27
Novus International Inc .....	6
Pacific Vet Group.....	9
Walinga Inc .....	18
Ziggity Systems Inc.....	35
Zoetis Global Poultry .....	19-20, 43-44

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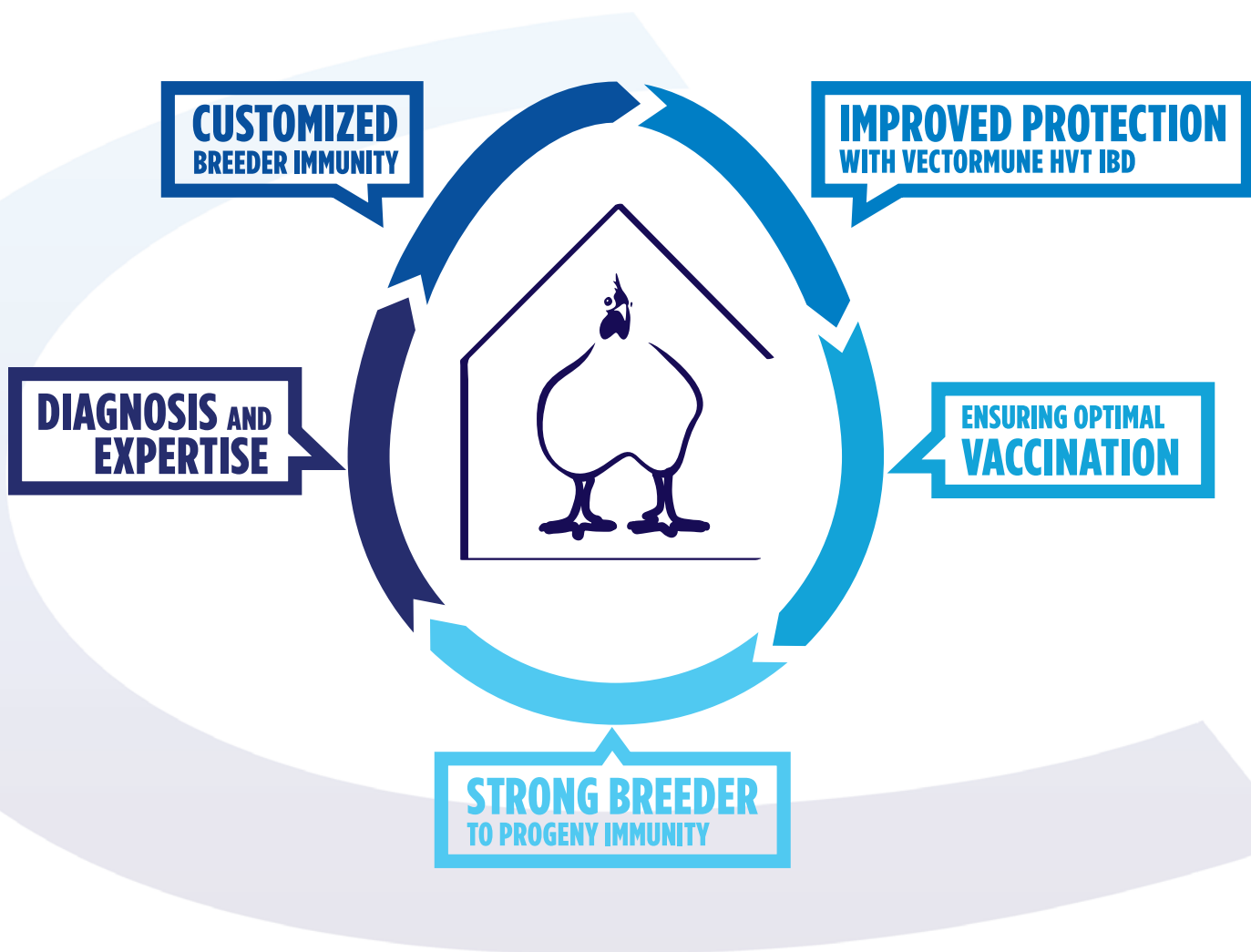
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