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The magazine for the integrated poultry industry

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» Editor's Comment BY GARY THORNTON

Poultry positioned to exploit sustainability advantages over red meats



»Poultry is in a unique position among meat proteins to address the sustainability challenges facing food producers as demand rises along with a burgeoning world population. Not only is it one of the most efficient converters of grains and oilseeds to meat, poultry has a compelling story to tell consumers about its environmental footprint.

Poultry's advantage in sustainability is largely genetics-based, and a major poultry breeding company at the National Turkey Federation Convention encouraged producers to tell their sustainability story and capitalize on it.

"At a time when consumers are asking, 'What is the poultry industry doing about its carbon footprint,' we also have a responsibility to produce healthy, affordable food," said Aviagen's Jihad Douglas at a National Turkey Federation breakfast meeting. Now is the time, he said, for poultry producers to capitalize on their capacity to produce healthy, affordable meat with a comparatively small carbon footprint. It's a value proposition that can be backed up with numbers and a convincing narrative.

Chicken and turkey's feed conversions, at 2.1 and 2.5, beat those of beef and pork, at 10 and 5, and poultry's lead in those measures are expected to grow, explained turkey geneticist Paige Glover at the meeting. What's more, she said, modern poultry production systems require less land and less water for the production of a pound of meat.

"Poultry has an even greater advantage when it comes to the genetic improvement being made in yield and efficiency traits due to poultry's generational interval, which is much shorter in poultry than in cattle or sheep or pigs. This allows the industry to continue to further increase our advantage when it comes to the environmental impact," she added.

Glover told listeners that poultry breeding companies are applying genetic selection technologies that will help the industry extend its lead in producing meat that is both affordable and sustainable. The company projects that the genetic improvements in turkeys, alone, will by 2020 save producers over \$120 million a year in feed costs and reduce the industry's carbon footprint by 1.1 percent or 112 pounds of CO₂ per bird per year.

Tell the story. ■

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Next on the Plate: Looking forward farm to fork

Poultry Confidence Index survey continues trend of optimism

Poultry survey respondents report increased confidence in industry, but market analysts say animal feed costs, the US drought and ethanol mandate continue to be problematic.

BY GREG RENNIER

» Optimism in the poultry industry was at a historic low less than one year ago. Since then, confidence has risen above normative levels as key factors have stabilized (for now).



Greg Rennier

The Overall Index for the WATT/Rennier Poultry Confidence Index for the first quarter of 2013 now stands at 113.1 (1996=100), up from 72.8 the previous quarter. The Expectations Index rose to 107 from 60.1, while the Present

Situation Index increased to 117.2 from 81.3

In addition, all five sub-indices showed similar increases, while four of the five eclipsed the 100-point normative level. The exception was the Present Opportunities Index, which stood at 87.7.

However, some respondents noted that even though the industry is not producing any new jobs there was “plenty of opportunity for college-trained individuals to replace those baby boomers that are retiring.”

WATT/Rennier Poultry Confidence Index: Overall Index*

First quarter 2013 113.1

Fourth quarter 2012 72.8

* (1996=100)

Since historic lows less than a year ago, poultry industry confidence has risen above normative levels as key factors have stabilized.

While the Poultry Confidence Index was on the rise, the Consumer Confidence Index was falling. The payroll tax increase that commenced in January - resulting in less take-home pay - led to paycheck shock. It may take awhile for consumers to recover.

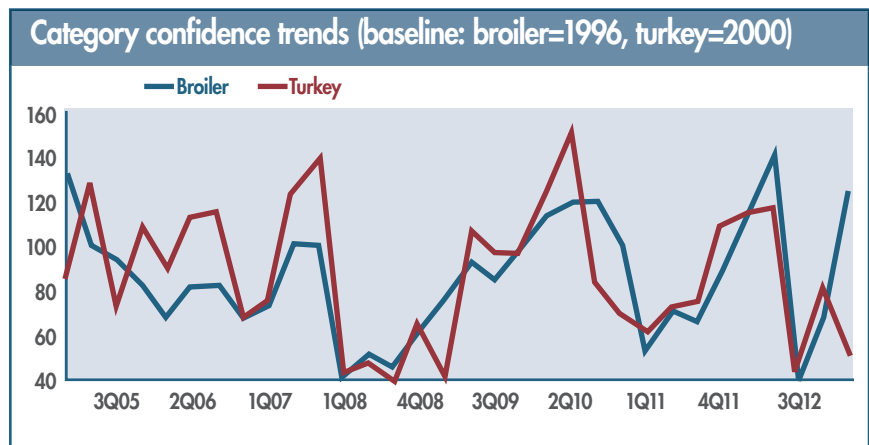
Our poultry respondents were optimistic that:

1. Grain prices have stabilized
2. Beef prices will spike
3. Exports will hold steady or improve
4. Integrators will cut or at least maintain production levels.

Animal feed costs remain problematic

Two of these factors are on shaky grounds.

Thomas Elam, president of FarmEcon LLC, foresees huge animal feed cost risks over the next two years. There is a massive shortage of corn, and soybean stocks are at record-low inventory levels. As if that wasn't enough,



Confidence in the broiler industry was much higher in the most recent Poultry Confidence Index survey than in the turkey industry, likely due to falling prices, stable production forecasts and higher animal feed costs.

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results.

Janet Collins
Specktacular Sweepstakes Winner
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Albertville, AL



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farmers could potentially plant fewer acres of corn due to a continuing drought. The ethanol mandate aggra-

vates these conditions.

Rather than declining, production levels have increased during early

2013. Broiler sets are up 1 percent from a year ago and the USDA is predicting total pounds of broiler meat for 2013 will likewise be up 1 percent over 2012.

As predicted by Heather Jones of BB&T Capital Markets, it appears that higher-than-expected pricing coupled with softer-than-expected animal feed costs have kept poultry integrators from pulling the trigger on cutbacks.

Less optimism in turkey industry

Those in the turkey industry were less optimistic than their broiler counterparts. The aforementioned Thomas Elam - speaking at the 2013 National Turkey Federation convention - said 2013 could be "the worst year in the [turkey] industry." Falling prices due to a weakness in the breast-meat markets, along with stable production forecasts and higher animal feed costs, "could be a real disaster."

Optimism is on the rise in the poultry industry fueled by stable grain prices and a robust export market. However, either of these could change rapidly, leaving the industry in a pinch. The turkey industry may fare less well, as prices are expected to decline. ■

Greg Rennie, Ph.D., is president of Rennie Associates Inc., email greg@rennieassociates.com

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Understanding the fundamental ethanol problem

The use of non-renewable resources is unsustainable, but the production of ethanol does not reduce the use of fossil fuel.

BY PAUL AHO

»Recently, a significant portion of the unsustainable corn grain in the U.S. has been mandated to be transformed into ethanol ostensibly to reduce the use of fossil fuels. Alas, it does not.



Paul Aho

Over the last century, corn (and other crops) transformed from plants that utilized primarily renewable solar energy to plants that rely on non-renewable fossil fuel. At least half the corn yield can now be attributed to modern inorganic fertilizer. The use of non-renewable resources in this manner is, of course, unsustainable, but nevertheless justifiable to prevent the starvation of billions

of people while we figure out how to make fertilizer in a more sustainable way. It is largely because of the conversion of fossil fuel energy from fertilizer into food that humanity has avoided global famine.

Understanding the history of converting natural gas

To understand why ethanol does not necessarily lead to a reduction in fossil fuel use, it is helpful to go back to 1909 when Fritz Haber discovered the chemistry of converting natural gas into ammonia. This led to inorganic ammonia-based nitrogen fertilizers. Before the invention of inorganic fertilizer, corn yield was around 30 bushels per acre. The use of improved genetics designed to pull most of the energy from fertilizer, not from the sun, caused yields to soar to 150 bushels per acre (200 in the best fields). Modern fertilizer allowed the Green Revolution to feed additional billions of people.

Energy Return on Investment

A well-documented report, written by T.A. Kiefer of the

Waterloo Institute for Complexity and Innovation (<http://wici.ca/new/resources/occasional-papers/#no.4>), discusses how the production of ethanol does not reduce the use of fossil fuel.

Kiefer compares petroleum to ethanol using Energy Return on Investment. EROI is the ratio of energy produced to energy consumed. When producing petroleum diesel and gasoline, the EROI is at least 8 to 1. In other words, the investment of a barrel of energy in petroleum discovery, production, refining and delivery yields 8 barrels of energy.

The EROI of corn ethanol is only 1.25 to 1. In other words, the investment of one barrel of energy in the production of corn and the distillation of ethanol yields 1.25 barrels of energy. The slight

Barrels of energy investment v. barrels of energy return		
	Petroleum	Ethanol
Energy Return on Investment	8:1	1.25:1
Equivalent gain	8:1	40:32
Liquid fuel net gain	8	0
Feed co-product	0	8
Total output CO ₂	9,600 lbs.	37,100 lbs.
Total input H ₂ O	2,500 gallons	2,700,000 gallons

Energy Return on Investment is the ratio of energy produced to energy consumed. The investment of a barrel of energy in petroleum discovery, production, refining and delivery yields 8 barrels of energy.

energy profit is not in liquid fuel (in that area ethanol breaks even). The gain is in the production of a feed co-product, distillers dried grains with solubles.

To produce the same gain of 8 barrels of energy yielded by petroleum with a single barrel of energy requires 8/25 or 32 barrels of input energy for ethanol. After expending the 32 barrels of

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input energy the production of ethanol is considerable, but the net increase in liquid fuel is zero. The gain is solely in DDGS.

It would be more efficient to grow more soybeans to replace the DDGS produced by ethanol production rather than go through a massively disruptive process which, in the end, yields a lot of ethanol but no net additional liquid fuel. The liquid fuel energy equivalent going in is roughly equivalent to the liquid fuel energy coming out of the process. In addition, the process produces three times as much carbon dioxide while consuming 1,000 times as much water.

Ethanol production has led to damage in animal agriculture

The process of producing ethanol has led to well-documented damage to the animal industries as well as the deterioration of food security worldwide and huge environmental costs.

What is not well documented is the utter futility of the policy. Transformation of fossil fuel in the form of fertilizer to corn and back again to a fossil fuel substitute (ethanol) is a bridge too far and represents a willful ignorance of the second law of thermodynamics (some fraction of useful energy irreversibly becomes useless energy every time energy is converted from one form to another). It would be far better to use fossil fuel directly than to transform it twice.

Kiefer concludes by saying, “Trying to biofuel our way to energy independence is like medieval physicians trying to bleed their patients back to health. It is time to stop the bleeding ... An effective energy strategy must exploit rather than defy the laws of nature ...” ■

Paul Aho, Ph.D., Poultry Perspective, Storrs, CT 06268; email paulaho@paulaho.com



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GNP Company, Marshall Durbin win 2013 Clean Water Awards

»»The GNP Company poultry processing plant in Cold Spring, Minn., is the winner of the 2013 Clean Water Award in the full-treatment category, in part because of its membrane biological reactor designed to better handle current and future EPA wastewater parameters.

Poultry processor Marshall Durbin won the 2013 Clean Water Award in the pretreatment category for the company's aggressive water reuse and conservation program. The program has allowed the poultry processor to ensure its water stream is kept clean in an efficient manner.



Learn more about the award winners and honorable mention for Koch Foods in these video interviews:



GNP Company poultry processing plant wins Clean Water Award: www.WATTAgNet.com/157708.html



Poultry processor Marshall Durbin wins pretreatment Clean Water Award: www.WATTAgNet.com/157707.html

Broiler producer Koch Foods wins Clean Water honorable mention: www.WATTAgNet.com/157706.html

DATELINES

Details @ www.WATTAgNet.com/Events.aspx

» National Institute for Animal Agriculture 2013 Annual Conference, April 15-17, Louisville, Ky., www.animalagriculture.org

» Georgia Poultry Federation annual spring meeting, April 19-21, Buford, Ga., www.gapf.org

» 2013 USPOULTRY Human Resources Seminar, April 22-24, Destin, Fla., www.uspoultry.org

» Animal Agriculture Alliance Stakeholders Summit 2013, May 1-2, Arlington, Va., www.animalagalliance.org

» 2013 USPOULTRY National Breeders Roundtable, May 2-3, St. Louis, Mo., www.uspoultry.org

» Turkey and broiler health management school, May 6-7, East Lansing, Mich., www.2013phms.blogspot.com

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PEOPLE & COMPANIES

»**Dr. Charles Olentine**, executive vice president, USPOULTRY, was named USPOULTRY's Workhorse of the Year during the 2013 International Poultry Expo.



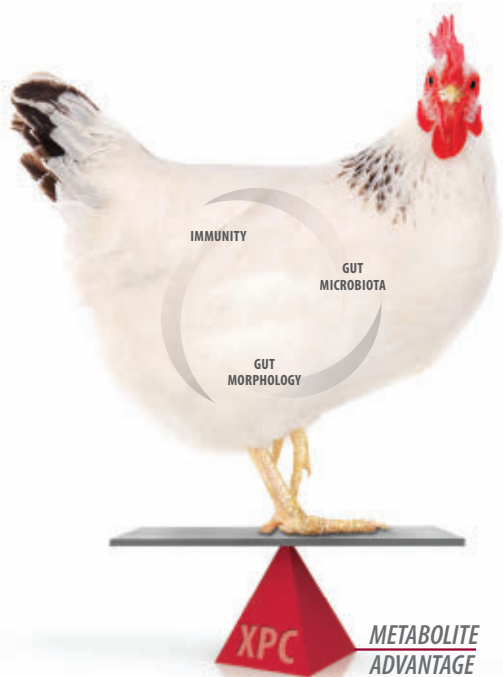
Bill Bradley, 2012 Workhorse of the Year, left, collared 2013 recipient Dr. Charles Olentine.

»Known as the matriarch and co-founder of Cooper Farms, **Virginia June Cooper** passed away recently at home surrounded by her family. Cooper Farms was founded by Virginia and her husband Virgil in 1938.

»More than 230 employees and growers from eight poultry complexes attended the **2013 International Production & Processing Expo** via free bus service. The attendees were pre-registered through the Members to Atlanta (M2A) Program.

»**Midamar Corporation**, based in Cedar Rapids, Iowa, was crowned the winner of the international Gulfood award for "Best New Frozen or Chilled Food" for its newly launched Turkey Deli Meats line.

»**Key Technology Inc.** and **Visys NV**, a provider of chute-fed in-air sorters used by food processors and waste recyclers, have entered into a merger agreement.



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Grain prices and poultry demand: Searching for the new norm

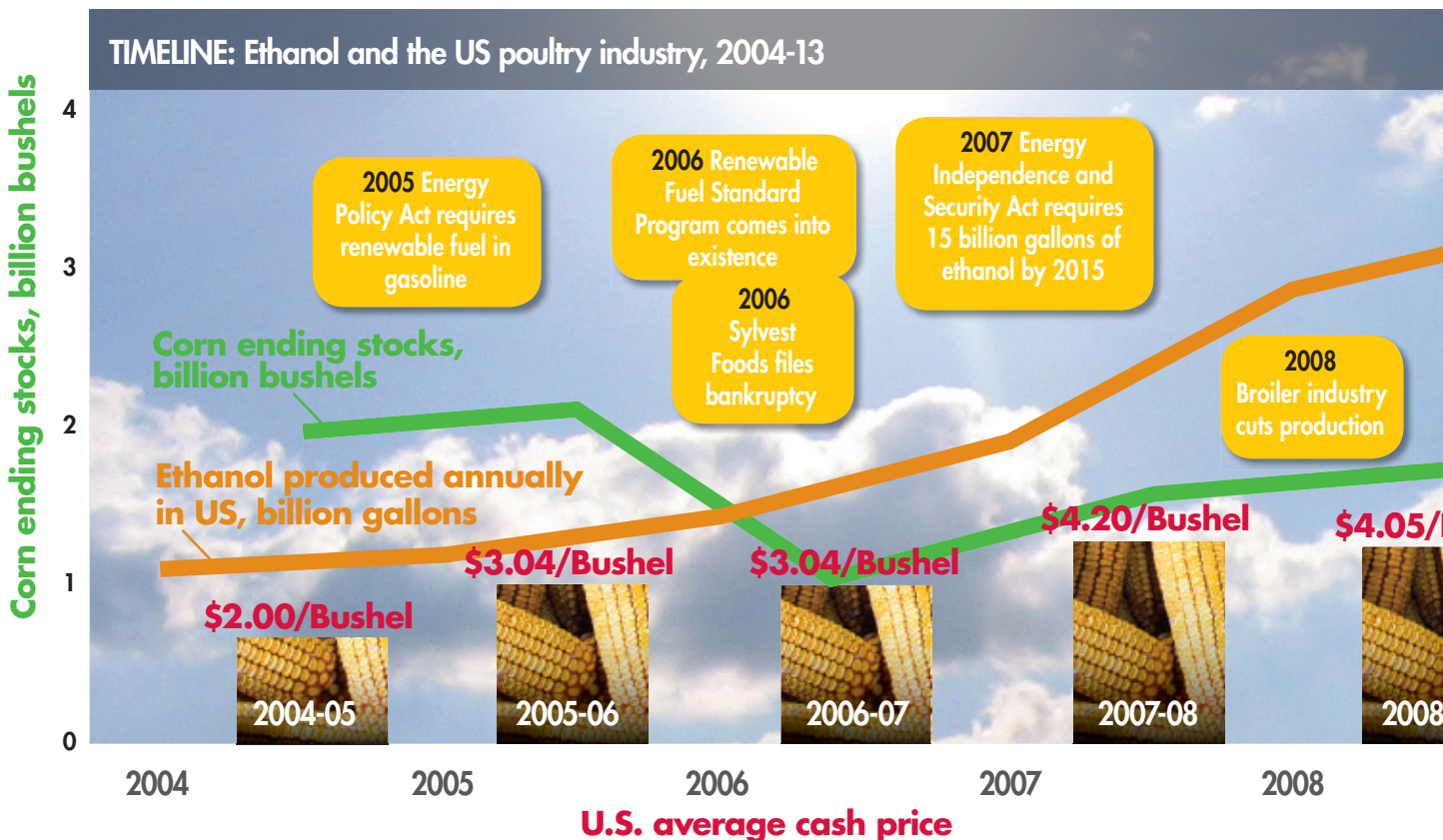
After six years of market turmoil, will poultry producers begin to see a rebuilding of grain stocks and a strengthening of poultry demand in 2013?

BY GARY THORNTON

»Poultry producers face the harrowing economic prospect that in July corn prices could be anywhere from \$4 to \$10 a bushel, largely depending on the weather during the next two months in the U.S. Corn Belt. Not an enviable business environment when animal feed ingredients account for a majority of the total cost of

production, and when the range of possible cost is what would have once seemed unthinkable.

Normalcy in the poultry business died in 2006, however, with the introduction of the U.S. Renewable Fuels Standard, which began the diversion of millions of acres of corn plantings to ethanol fuel production. Since then, with corn in



short supply in the face of rising world demand and droughts in key corn-producing regions of the world, animal feed grain prices have been high and volatile. The financial squeeze on producers was made complete with the recessionary economy and slumping demand for poultry.

Grain and oilseed prices will be key factors in the financial performance of the industry in 2013, to put it mildly. Other factors include the strength of the U.S. economy, which largely depends on the rate of employment and the level of U.S. poultry exports.

Will ending corn stocks rise in 2013?

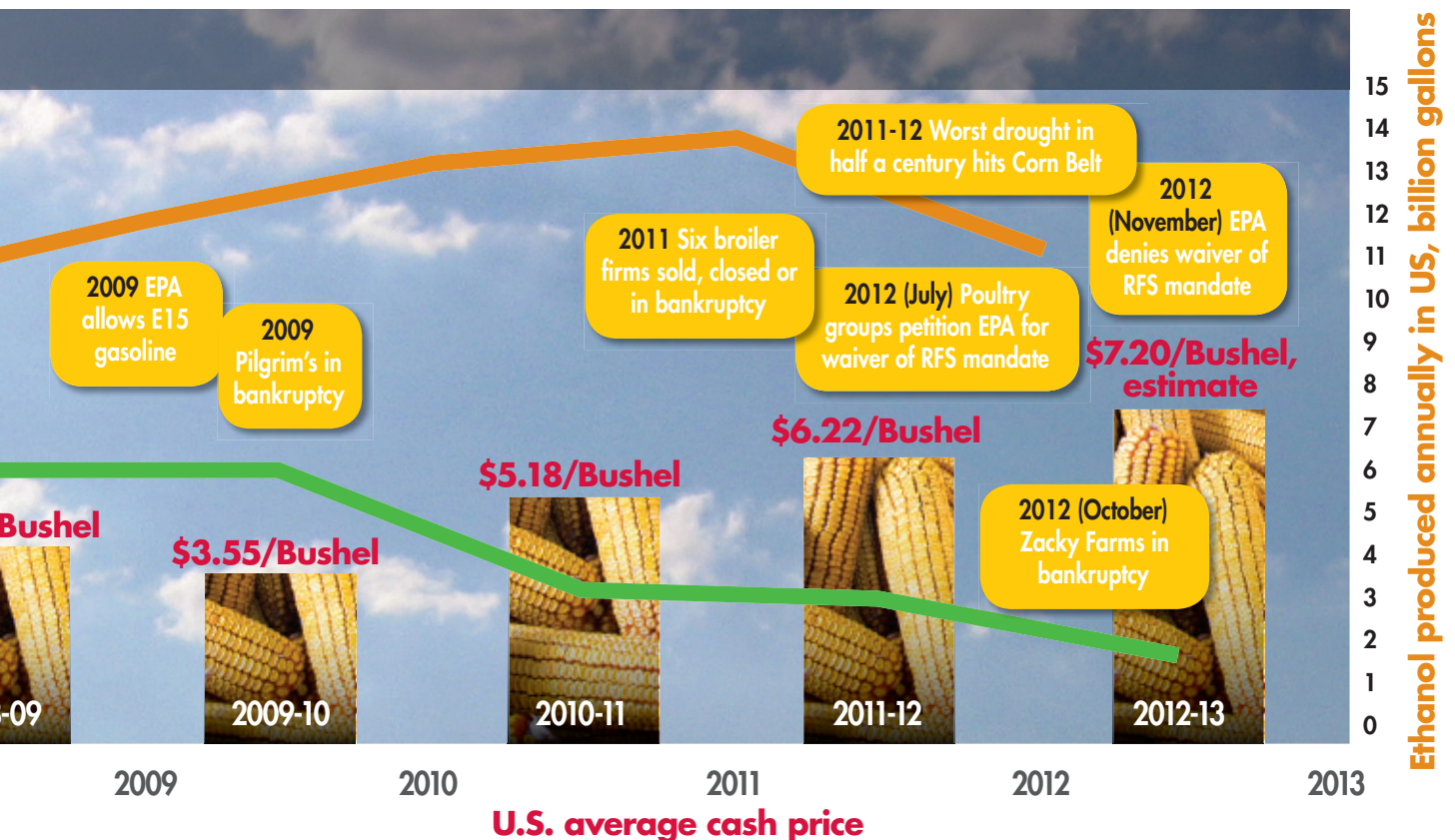
Will there be the beginning of a rebuilding

VOLATILITY IN GRAIN PRICES POSES AN EVEN GREATER MANAGEMENT CHALLENGE FOR POULTRY COMPANIES THAN THE HIGH PRICES.

of grain stocks in 2013? Will corn prices moderate? The outlook varies with different analysts.

USDA's February 8 forecast for the season-average farm price for corn was \$6.75 to \$7.65 per bushel. That's based on a projection of 97.2 million acres being planted and a yield of 123.4 bushels per harvested acre.

Low corn stocks, which have helped drive up all animal feed ingredient prices, are in their third year of decline. Droughts in key grain-producing regions of the world in 2008, 2010,



■ POULTRY INDUSTRY OUTLOOK

2011 and 2012 have contributed to successive years of lower corn stocks, with USDA projecting an all-time low of 632 billion bushels at the end of the 2012-13 marketing year.

Risk related to grain stocks is under valued

Tight grain supplies led Rabobank to warn in a recent Agri Commodity Monthly, “Agricultural markets appear to under value risk, with [grain and oilseed] stock levels reduced and production outlook uncertain, while price uncertainty has fallen to multi-year lows. Record-low levels leave grain and oilseed prices vulnerable to the upside and with the potential for intense volatility.”

Industry economist Dr. Thomas Elam, in fact, says rebuilding corn stocks in 2013 is a tall order. He told an audience at the National Turkey Federation convention, “A corn yield of at least 145 bushels an acre is

needed this year just to keep prices relatively flat or down a little. In order to fulfill the 15 billion gallon [Renewable Fuel Standard] mandate for ethanol, to produce to meet the potential demand for meat and dairy products in this country, and to restore U.S. supply for export markets to about 2.2 billion bushels a year, we need corn crops of 95 million-plus acres at 165 bushels an acre in every year as far as the eye can see. That’s not going to happen. There is not the potential in corn agriculture to make it happen.”

Turnaround may come sooner, say some analysts

Other economists see the possibility of corn markets moderating in the nearer term. John Anderson, deputy chief economist, Farm Bureau Federation, said at the International Production and Processing Expo, “I have seen projections for corn planting of 99 million acres. I do not believe that many acres will be

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■ POULTRY INDUSTRY OUTLOOK

planted, but a lot of corn will be planted. If there is good corn production this year, there will be a dramatic turnaround in corn prices.”

Terry Barr, senior director of industry research at CoBank, also sees the possibility of a near-term reduction

management challenge for poultry companies than the high prices. In the Poultry Q1 Quarterly, Rabobank advised, “The performance of poultry companies in 2013 will depend, to a large extent, on how well they are able to deal with volatility from grain and oilseed

RECORD-LOW ENDING STOCKS LEAVE GRAIN AND OILSEED PRICES VULNERABLE TO THE UPSIDE AND WITH THE POTENTIAL FOR INTENSE VOLATILITY.

in grain prices. “Significant amounts of new production of coarse grains are beginning to come into the market, so inventories may be rebuilt faster than thought,” he told listeners at the International Poultry Scientific Forum.

Prepare for volatility in grain prices

Volatility in grain prices poses an even greater

prices. Although the current outlook suggests a slowdown in feed price increases, uncertainty remains due to low stock levels and an uncertain production outlook for grains and oilseeds. The industry should therefore be prepared for any change in input prices.”

Elam shared corn price projections for three different corn yield scenarios — \$7 a bushel at his baseline



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FACT: This innate immune response diverts energy away from growth and performance.^{2,3}

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POULTRY INDUSTRY OUTLOOK

projection of 145 bushels per acre, \$8 a bushel at a lower production of 130 bushels per acre, and \$6 a bushel at a higher production of 155 bushels an acre. He totally discounted any possibility of a trend-line yield of 165 bushels due to the lack of soil moisture in the major corn-growing areas west of the Mississippi River.

“The price differences due to even minor changes in supply are significant,” he said, “because there are virtually no ending stocks of corn.”

The Rabobank report echoed Elam’s point about corn price sensitivity: “Feed cost remains the wild card for 2013. The current outlook is fragile due to low [feed grain] inventory levels, but output from South America looks set to recover.”

Poultry producers, however, should not depend on the feed ingredient markets to improve. “The message to the poultry industry is that hope is not a good strategy to address volatile feed costs. Producers need to take aggres-

sive risk management strategies with regard to pricing.”

Consumer demand for meat and poultry

High grain prices are not the only issue facing poultry producers in 2013. Meat and poultry production and disappearance is down, and there are questions about consumer demand at higher prices. Record retail meat prices appear to be meeting consumer resistance, Anderson said, and higher prices exacerbate the problem of stagnant income for U.S. consumers.

“Real meat prices have outpaced increases in personal disposable income,” he said. “That has important implications for the meat sector as we look ahead and think about how consumers deal with these higher prices. As consumers economize in their household budgets, this is a real demand challenge for the meat sector. This is coming at a time when consumers are not in a good position to deal with the higher prices.

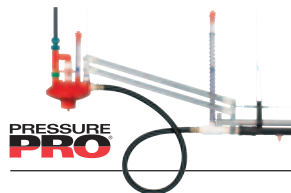
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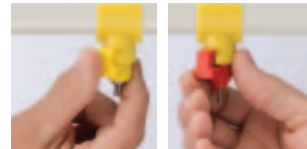


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■ POULTRY INDUSTRY OUTLOOK

“That challenge is evident in the U.S. per capita meat consumption figures, which have dropped dramatically. This does not nec-

essarily say anything about real demand for meat and poultry. The consumption numbers have more to do with the amount of product

available. One must dig a little deeper to determine whether the demand is strong or weak.”

Price advantage for poultry

The poultry industry is better positioned than its red-meat competitors to meet the consumer resistance to higher prices, according to Rabobank. The poultry industry’s pricing power should improve, it said, with continuing high prices for competitor meats such as pork and beef leading consumers to choose the cheaper poultry option.

Positive but fragile poultry outlook calls for production restraint

The poultry industry continues to operate in a challenging market place, but conditions for 2013 are improving, said Rabobank analyst Nan-Dirk Mulder.

“Despite the positive picture, this outlook is very fragile and dependent upon risks related to feed costs and supply discipline,” he said. “As grain and soybean stocks remain low, supply discipline will be a key tool for the industry to maintain margins. This has been demonstrated in Brazil where production cutbacks have paid off in improved margins.”

Although the current outlook suggests a slowdown in animal feed price increases, Rabobank concluded, uncertainty remains due to low stock levels and an uncertain outlook for grains and oilseeds. The industry should therefore be prepared for any change in input prices. ■

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The future of antibiotics in poultry and the Veterinary Feed Directive

An expert panel discussed the poultry industry's use of antibiotics, the importance of veterinarians under the Veterinary Feed Directive and the public's perception of the issues.

BY BRUCE PLANTZ AND LINDSAY BEATON

»Antibiotics are a necessary part of a comprehensive poultry health and welfare program,

but the use of antibiotics in food-producing animals has become a concern among the general public. This concern can be alleviated by cooperation among poultry producers, pharmaceutical companies and the FDA to educate consumers on how antibiotics can be used safely in both humans and food animals.

A recent panel discussion, “The future of antibiotics in poultry:

The role of the Veterinary Feed Directive,” presented by www.WATTAgNet.com and sponsored by Zoetis, examined the role of the Veterinary Feed Directive, VFD, in meeting the expectations of the public and addressed the directive's proposed changes and their effects on the poultry industry. You can view the entire 90-minute panel discussion in five segments, starting with part one, at www.WATTAgNet.com/157949.html. Here are some highlights from the five parts of the discussion.

Video 1: The role of the Veterinary Feed Directive

The Veterinary Feed Directive, including upcoming regulatory changes, should have a

WATCH THE ENTIRE PANEL DISCUSSION IN THIS VIDEO SERIES

“The future of antibiotics in poultry: The role of the Veterinary Feed Directive” can be viewed online in five segments.

Video 1: The role of the Veterinary Feed Directive www.WATTAgNet.com/157949.html

Video 2: The role of the veterinarian www.WATTAgNet.com/157948.html

Video 3: Where are we today? www.WATTAgNet.com/157947.html

Video 4: The role of science www.WATTAgNet.com/157946.html

Video 5: The role of public perception www.WATTAgNet.com/157945.html

The panelists refer to two FDA-CVM documents during their discussion, Industry Guidance 152 and 209, both of which deal with antimicrobial drug use in animals. To learn more about these guidance documents, visit www.WATTAgNet.com/157959.html





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positive impact on public perception of antibiotic use in the food chain.

Veterinary Feed Directive regulations outline the requirements for the sale and distribution of a product designated as a VFD drug, as well as the obligations



Watch this brief video: www.WATTAgNet.com/157950.html

In this brief video from the panel discussion, Dr. William Flynn, Center for Veterinary Medicine, FDA, explains the positive impact of the Veterinary Feed Directive on public perceptions of antibiotic use in animal agriculture.

of a veterinarian issuing the order of a drug in terms of what information must be included on the order. The regulations also specify the requirements for record-keeping by all parties, including feed mills filling drug orders and others in the feed industry.

“We’ve gotten feedback that the existing process is a bit onerous, and is fairly resource-intensive in terms of maintaining the level of detail to track the information and maintain the records,” said Dr. William Flynn, deputy director for science policy at the Food and Drug Administration’s Center for Veterinary Medicine.

According to Flynn, the FDA CVM is looking to streamline the process so it’s as efficient as possible, because more products will be joining the VFD designation. “Our vision is that a number of products now that are available over the counter will be gradually phased in from their over-the-counter status to this VFD status,” said Flynn.

This expansion of VFD-status drugs will increase public confidence in the use of antibiotics by bringing veterinarians more firmly into the process. “Zoetis research has shown that the veterinarian is very trusted by the public,” said Dr. Stephen Sutherland, DVM, senior director of regulatory affairs at Zoetis. “They have a tremendous amount of confidence in the veterinary profession. And if they know that the veterinarian’s involved in the use of these antibiotics and the decision-making process, it’s going to increase their confidence in how these products are used in the marketplace and in the food supply.”

» Watch part one of the panel discussion at www.WATTAgNet.com/157949.html

Video 2: The role of the veterinarian

Antibiotics play a positive role in poultry production, and veterinarians will play an important role in conjunction with the Veterinary Feed Directive.

According to Dr. G. Donald Ritter, director of health services for Mountaire Farms, most large poultry companies already have a direct veterinarian relationship, and those that don’t are going to have to get one. “Where all this is going is that antibiotics are



Watch this brief video: www.WATTAgNet.com/157952.html

Dr. G. Donald Ritter, Mountaire Farms, explains in this brief video how the veterinarian’s involvement can increase transparency and communication between poultry producers and customers.

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POULTRY HEALTH

going to be used in a targeted manner under veterinary supervision in a valid veterinarian-client/patient relationship,” said Ritter. “The veterinarian’s going to have to own antibiotic use in food animals. It’s not going to be up to the production manager, the feed mill manager, the producer — it’s all going to come back and the onus is going to be on the veterinarian.”

» Watch part two of the panel discussion at www.WATTAgNet.com/157948.html

Video 3: Where are we today?

The public’s concerns over antibiotic use in poultry production today could negatively impact the availability of antibiotics for use in poultry in the future. The panel discussed perception versus reality in antibiotic use.

“[A poultry house] is a house of many individuals, but you treat them as a flock,” said Dr. Randy Singer, associate professor with the Department of Veterinary and Biomedical Sciences at the University of Minnesota. “And yet, there seems to be this assumption that since you don’t go out and give individual [antibiotic] treatments, that you are [doing] something wrong, or there’s something bad about how you’re using the antibiotic — you’re just giving it indiscrimi-



Watch this brief video: www.WATTAgNet.com/157951.html

Dr. Stephen Sutherland, Zoetis, explains in this brief video what is needed for success in terms of having the necessary antibiotics and other health resources to care for poultry flocks.

nately to many individuals [in] that house who could be healthy at the time.”

Singer said that antibiotic use in disease prevention and control is critical to maintaining flock health.

The future of poultry antibiotics as a result of the Veterinary Feed Directive is of some concern, said the panel. “I think from an R&D, investment perspective [the industry] is going to be hard-pressed to invest in anything that will be from a medically important category because of the regulatory uncertainty,” said Sutherland.

Poultry producers are concerned that there will not be the needed antibiotics approved for use in poultry. “We won’t have enough products down the road, especially if we keep eliminating them one by one,” said Ritter.

» Watch part three of the panel discussion at www.WATTAgNet.com/157947.html

Video 4: The role of science

The general public does not understand the science behind antibiotic use in poultry production. A better link between the scientific community and the public was one of the solutions put forth by the panel.

“When you have some event that makes the news — somebody got sick and died from a bacterium that is resistant to antibiotics and treatment failed — it’s really easy to start to point fingers, and the media likes that kind of story,” said Singer. “So it’s hard to stay balanced, and talk about what I think is most important, which is attribution. If you have this relationship between human health and animal health, the question becomes, how much of what we do on the animal side is impacting human health?”

Within the poultry industry, the FDA would like to find ways to gather a broader range of information on antibiotic use, as well as ways of making that information more meaningful. Flynn said that while the FDA tracks annual quantities of antibiotics going into the sales and distribution pipeline, they don’t know how the product is used or what species it is used on.

“It’s very problematic to track usage,” said Flynn.

Poultry companies themselves have been reluctant to report usage.

» Watch part four of the panel discussion at www.WATTAgNet.com/157946.html

Video 5: The role of public perception

In summary, the panel discussed what success in the industry might look like five to 10 years down the line, as regards antibiotic usage.

They key to the issue is developing standards for judicious use of these antibiotics. “What we need to do is stop trying to defend this idea that the use of antibiotics has no effect on resistance,” said Singer. “All antibiotics have an effect on resistance development. What would be better, more effective, is trying to determine which uses, and how to use them to minimize that development of resistance.”

The FDA is trying to get all parties involved to work together to move ahead in a collaborative way, according to Flynn.

“We want sound science to be involved in making these decisions, not political science,” said Ritter.

The panel pointed to the availability of antibiotics as an important indicator of success down the road. Better consumer education, improved technology and

optimal cooperation and communication among the pharmaceutical industry, poultry industry, veterinarians and the FDA were also given as key indicators of long-term success.

» Watch part five of the panel discussion at www.WATTAgNet.com/157945.html


The panel

▼ Dr. William Flynn, deputy director for science policy at the Food and Drug Administration’s Center for Veterinary Medicine


Dr. G. Donald Ritter, director of health services for Mountaire Farms

Dr. Stephen Sutherland, DVM, senior director of regulatory affairs at Zoetis

Dr. Randy Singer, associate professor with the Department of Veterinary and Biomedical Sciences at the University of Minnesota




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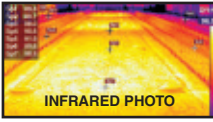
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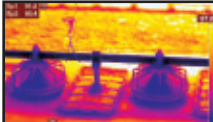
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■ ANTIBIOTIC-FREE POULTRY PRODUCTION

Fieldale Farms overcomes cost barriers with 100 percent antibiotic-free operations

Company went from 100,000-150,000 antibiotic-free broilers weekly to beyond 2.8 million

BY ROY GRABER, BUSINESS EDITOR

»After easing its way into antibiotic-free production, Fieldale Farms made the move in 2011 to raising 100 percent of its broilers antibiotic-free. Doing so has presented a few challenges, including increased costs of production and greater risk for certain avian health problems, but the company has met those challenges head-on.

Dr. David Wicker, vice president of live opera-

tions for Fieldale Farms, told of how the corporation has dealt with the ongoing issues involved with delivering poultry raised without the use of antibiotics during the 2013 International Production and Processing Expo's Meat and Poultry Research Conference in Atlanta, Ga. Wicker said Fieldale Farms began looking at the antibiotic-free movement in the early 1990s.

At the time, there was not enough grain without antibiotics available for an operation of Fieldale's size. But as the decade progressed, they began making the switch. In 1998, the company started producing between 100,000 and 150,000 antibiotic-free broilers per week. It was mainly a trial, Wicker said, "to see if we could do it, and do it economically enough that we could supply some of our consumers what they were asking for."

The operation went 100 percent antibiotic-free in 2011, and went from raising 100,000 to 200,000 antibiotic-free broilers a week, to 2.8 million to 3 million a week.

Economic challenges

"Raising broilers antibiotic-free has issues," said Wicker. "Especially since the veterinarian tells me every day that antibiotics work." The most significant issue is it costs more money to raise poultry in an environment free of antibiotics. Wicker



In 1999, Fieldale Farms founded its Springer Mountain Farms brand, a line of poultry raised antibiotic-free. In 2011, the company began raising all of its broilers antibiotic-free.



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said the company is still tabulating the added cost for the most recent fiscal year, but he added expenses are more than the public thinks.

Some consumer reports say it only costs about one cent per pound more to raise antibiotic-free broilers. Others say it is between 3 and 5 cents. "I can't give you what it costs, but it's more than that," he said.

Poor feed conversions are one problem. When you go to a 100 percent antibiotic-free, feed conversions will become worse. Part of this is due to the ingredients in the feed, but it also is partly because of the birds in the operation, he said.

In an operation of Fieldale Farms' size, one lost point of feed conversion can cost beyond \$20,000 per week. Broilers in an antibiotic-free environment tend to gain weight more slowly, Wicker said. At certain times of the year, it takes two or three days longer for a chicken to grow to an average weight of 6 ¼ pounds. Growth rates tend to be seasonal, he said, as the period from January to April is when the weight gain is the slowest. During the summer and fall, growth rates are not affected as much.

Wet litter problems are also increased without the use of antibiotics, and taking corrective measures to prevent this from happening and subjecting the birds to burns and other health issues as a result, also takes away from the grower's

budget. "When you put all of this together, it does cost more to produce," he said.

Changes in consumer demands

Ever since Fieldale Farms began its foray into the antibiotic-free movement in the 1990s, the company has seen new definitions to the term antibiotic-free. Wicker said those definitions have changed along with consumer demands. Wanting to deliver the type of product the customers want, Fieldale has adapted to all of those industry standards.

Fourteen years ago, the main concern was that there were no antibiotics in the chickens' feed. The early focus was grain with no antibiotics, but it soon shifted to no animal fat or protein mixed with the grain product. As time progressed, the consumer desire was that the birds' water supply also had no antibiotics.

The next step was that the birds or the soon-to-be hatched eggs not be injected with any antibiotics. The biggest obstacle here, Wicker said, was that injecting the eggs on day 19 of incubation had been a good move to vaccinate for Newcastle disease. But Fieldale Farms adapted to that consumer request as well. The company still has incidents when a chicken gets sick from a lack of vaccinations, and those birds are treated and removed from the antibiotic-free flocks, Wicker said. ■

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Will tougher *Salmonella* standards for poultry reduce human illness?

FSIS analyzes Salmonella trends in HACCP samples using data the agency has described as ‘no longer useful as an indicator of trends.’

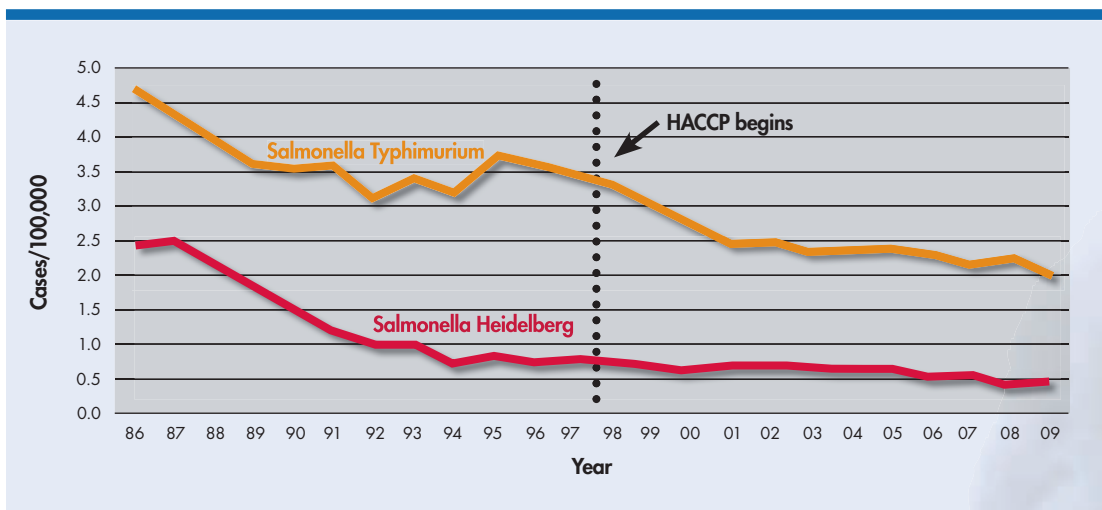
BY JOHN CASON

»In response to the New Performance Standards for *Salmonella* in poultry announced by Food Safety and Inspection Service in May 2010, several comments pointed out that *Salmonella* prevalence in chickens had been reduced by about 60 percent since the introduction of HACCP without any change in the rate of human salmonellosis. There was no reason

to believe, according to critics of the new standards, that a further lowering of the *Salmonella* standard for chickens would produce any reduction in human illness.

In its May 2011 response to comments in the Federal Register, FSIS argued that it was not appropriate to compare FoodNet salmonellosis rates to *Salmonella* prevalence trends in

Human illnesses caused by *Salmonella* Typhimurium and *Salmonella* Heidelberg since 1986



Salmonellosis due to *Salmonella* Typhimurium and *Salmonella* Heidelberg has been trending downward for 25 years, with no sign of a HACCP effect.

individual commodities, because a reduction in salmonellosis due to one commodity might be obscured by an increase in another commodity. FSIS asserted it was possible, however, to analyze trends by comparing FoodNet serotype data to serotypes isolated from chicken HACCP verification samples. FSIS appears to discount the possibility that a decrease in a serotype from one commodity might be offset by an increase in the same serotype from another commodity.

Estimating *Salmonella* prevalence in raw products

In 2012, the Data Coordination Committee of FSIS ruled that it is not possible to estimate *Salmonella* prevalence in raw products from *Salmonella* HACCP verification testing because of methodological and sampling issues. Intact raw products failed three of eight requirements and raw ground products failed five of eight requirements for HACCP verification samples to yield a valid estimate of national prevalence. Serotype data suffer from the same statistical problems.

The ruling by the committee was not completely unexpected because FSIS publications in recent years have cautioned against use of HACCP data to look for trends in *Salmonella* prevalence in raw chicken and other commodities. Changes in *Salmonella* sampling policies introduced in 2006 make comparisons to earlier data “inappropriate” and “prevent valid comparisons over time.” The last 26 issues of the Quarterly Progress Reports on *Salmonella* Testing of Selected Raw Meat and Poultry say that the “percentage of positive samples is no longer useful as an indicator of trends.”

FSIS uses the same *Salmonella* verification samples to identify serotypes found in chicken. The FSIS website presents quarterly serotyp-



■ FOOD SAFETY

ing results with statements such as, “Data reported here are not intended to be reflective of national trends in prevalence of se-

rototypes,” and, “The collection of serotype data is not designed for trend analysis.”

Despite these valid caution-

ary statements about the limitations of *Salmonella* prevalence and serotype data, FSIS argues that a weight of evidence approach permits a comparison of FoodNet salmonellosis rates to *Salmonella* serotype prevalence trends in individual commodities. The FSIS website has an analysis comparing *Salmonella* serotype incidence in FSIS-regulated products and human salmonellosis cases. The document compares FoodNet salmonellosis numbers with broiler chicken HACCP samples for serotypes *Enteritidis*, *Typhimurium*, *Heidelberg*, and two others using data from HACCP verification samples from 2000 to 2009, thus crossing the 2006 trend barrier.

Enteritidis risk

For *Enteritidis*, FSIS reports a 0.81 correlation between relative risk indicated by FoodNet cases and isolates from broiler chicken HACCP samples. FSIS serotype reports from 2006 to 2011 show a mean percentage of *Enteritidis*-positive samples of 1.70 for the winter months and 0.94 for the summer months. The peak in FoodNet *Enteritidis* cases is consistently in the summer months. “The Agency recognizes that serotyping information alone does not provide definitive associations,” according to some FSIS serotype reports. If serotype data are available by month, with further characterization by gel



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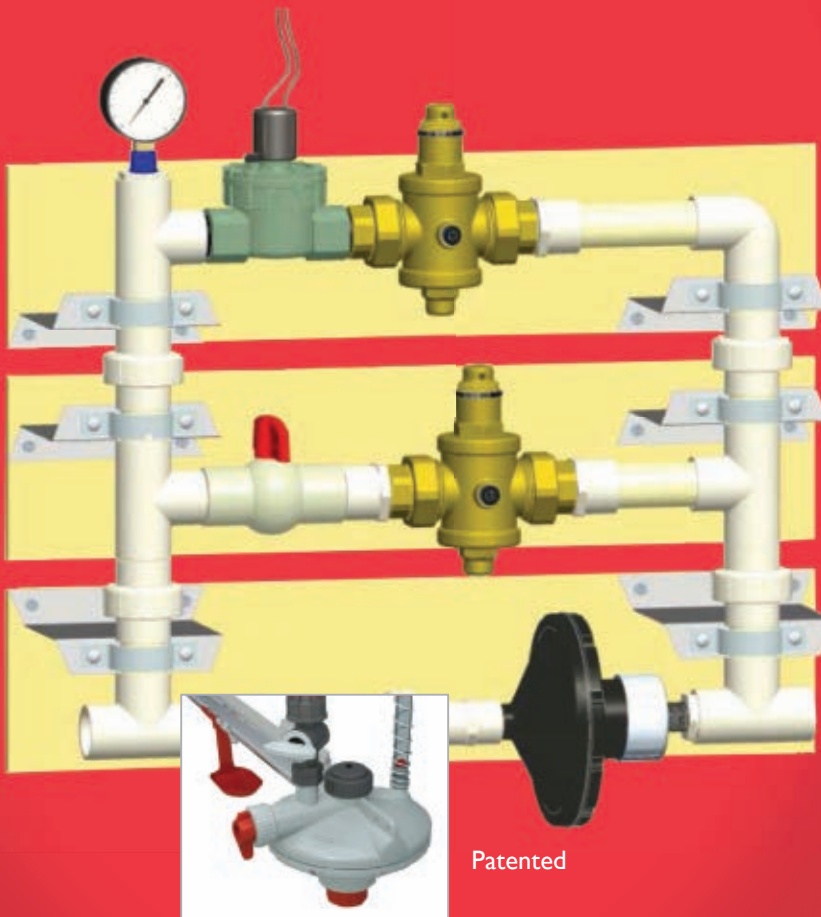
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electrophoresis and antibiotic resistance patterns for both commodity and human isolates, why are gross yearly numbers being compared?

Typhimurium, Heidelberg risk

For *Typhimurium* and *Heidelberg*, FSIS compares relative risk from FoodNet against a two-year moving average of vol-

ume-weighted percent isolations of those serotypes from HACCP samples. The 0.57 correlation for chicken is not significant, but the correlation for ground turkey is 0.86. Using a two-year moving average likely gave higher correlations than using the actual numbers.

The original comment about HACCP not reducing the rate of human salmonellosis is still accurate, however. The accompanying graph shows the rate of *Typhimurium* and *Heidelberg* cases reported by state health departments for the last 25 years divided by national population estimates. Both serotypes show a variable but steady decline in cases since 1986, with no indication whatever of any change caused by introduction of HACCP in 1998. *Enteritidis* is more variable, but also shows no change caused by HACCP.

Despite all of the *Salmonella* data collected by different agencies, there is no clear evidence that HACCP has reduced the incidence of human salmonellosis or that a further tightening of HACCP standards will produce an improvement in the future. ■

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John Cason retired from the Agricultural Research Service of USDA in December 2011 after 40 years in poultry-related jobs. He spent the last 21 years investigating poultry processing and food safety issues.

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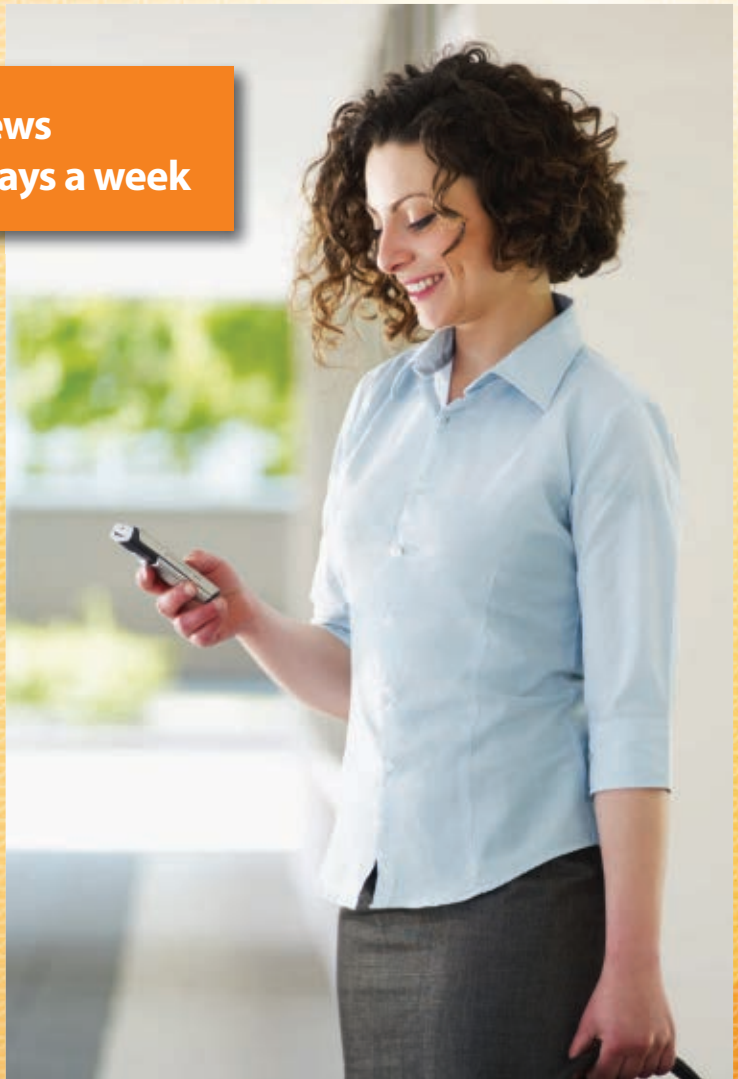
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