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Production, Processing and Marketing Worldwide **WATT**



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Cairo Poultry Company's hatchery grows through challenging times

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Future directions of poultry production highlighted at World Nutrition Forum

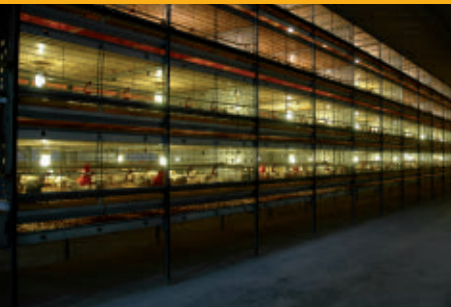
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Rearing systems



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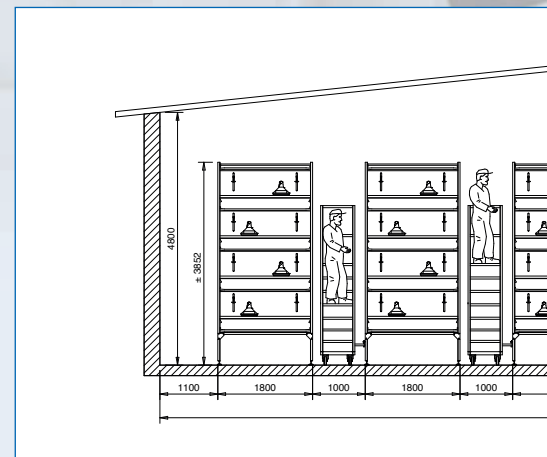
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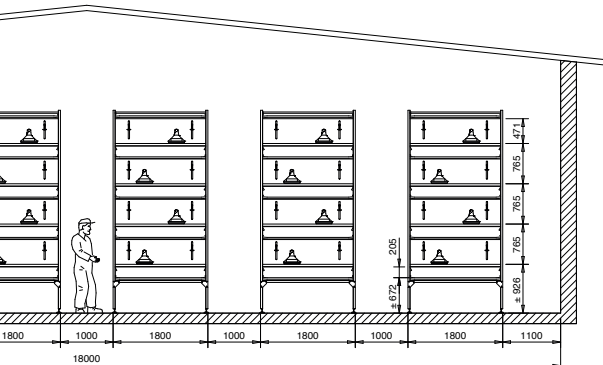
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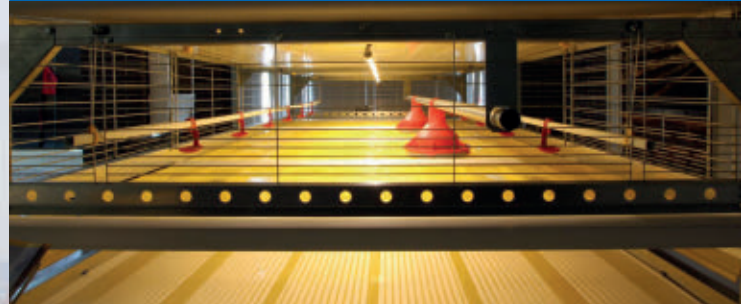
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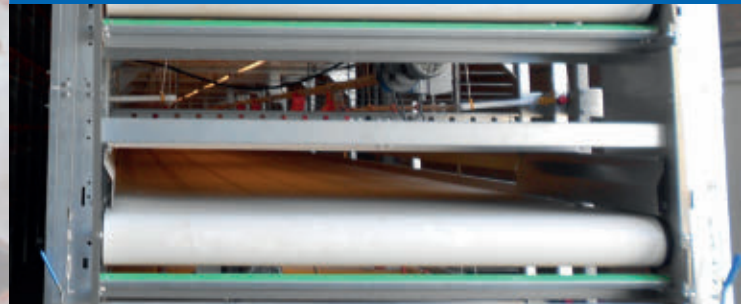
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Poultry International

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by Bruce Plantz

New look for Poultry International, new registration process

We are making major changes to the magazine, the digital edition and our login and registration policies. These will allow us to continue to improve our products by collecting more data on what our readers are viewing and using.

We have made a major change to the distribution of our digital editions and access to stories from the digital editions on www.WATTAgNet.com. This was done to better serve our readers by learning more about them and their information needs.

If you have been reading our digital editions, you will notice some minor changes when we ask you to register on www.WATTAgNet.com or subscribe to our magazines. There is no cost to you, and once you have completed the simple registration process, you will have

full and instant access to all of our products.

Starting with the January editions:

Digital editions are now available only to subscribers of the magazine.

Selected articles from each edition of this magazine will only be available to subscribers in the digital edition itself. Only summaries of these stories will appear on www.WATTAgNet.com.

This is a change from putting all WATT animal agribusiness magazine stories on www.WATTAgNet.com. Publishing all stories in both the magazines and on the website gave us wide distribution, but we often didn't know who was reading what type of stories.

Adding registration to our key stories gives us a much better understanding of the types of stories our subscribers are consuming.

Many stories from the magazines, all news, products, exclusive bloggers and Web-exclusive stories will still appear

Here's how it works



You will see magazine-only stories featured on www.WATTAgNet.com. Simply click on the story, and the website will guide you through the following steps.

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on www.WATTAgNet.com, in addition to our exclusive features, such as Market Data and the Top Companies Database.

Here are some of the changes you will see within the pages of the magazines during the next few months.

features and new



1

1 If you are not logged into the website, you will see a short summary of the article. You will be asked to either register on the website or log in.



2

2 If you are logged into the website and not a subscriber to a magazine, you will see a short summary of the article, with an invitation to subscribe to the magazine. Subscription is free, and signing up only takes a few minutes.



3

3 If you are logged into the site and a subscriber to the magazine, the link will take you directly to the story in the digital edition.

Accessing the digital editions



If you receive a monthly email notice that the new digital edition is ready, you can access the magazine directly from that notice, as you are a subscriber to the magazine.

If you are a subscriber to the magazine and try to access it from www.WATTAgNet.com or directly from www.poultryinternational-digital.com, you will be asked for login information — your email address and password. You will need to register at www.WATTAgNet.com to establish that password.

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New look

We have adjusted our designs to make magazines easier to read in a digital format.

We are eliminating some traditional departments — often referred to as news — in the print and digital magazines. We are still covering important developments and happenings in the industry as stand-alone stories, rather than a collection of short news items.

We have expanded our editorial staff by adding topic-specific experts covering nutrition, food safety and business.

Readers will still be able to easily access magazine-exclusive articles and complete digital editions from the website.

To fully access these new features, simply make sure you are registered at www.WATTAgNet.com. Registration is free and easy. If you are already a subscriber to one or more WATT publications, use the same email



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TIP 3

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address for all subscriptions and registration to the website. That way, the website will recognize you and your magazine subscriptions and pass you immediately to the magazine-only features.

WATT's editors started working on this concept a year

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ago. We welcome your feedback. You can contact me directly at bplantz@wattnet.net. □

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See us at IPPE booth 2251

Editor's Comment by Mark Clements

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Clements in his blog

[www.WATTAgNet.com/
MarkClements.html](http://www.WATTAgNet.com/MarkClements.html)

Will 2013 be luckier for the poultry industry?

I've been out of the office an awful lot over the recent months. Not only due to the Christmas break but also to visit trade shows, lectures, conferences and product launches. In the closing weeks of 2012, all seemed to be rosy with the poultry industry. And let us hope that it is.

But look a little deeper and things may not be quite as good as they seem. The industry may have become used to living with high feed prices, and certain sectors believe that grain prices will fall, so there is at least some good news, but this is not the end of the story. You can see from watching our EuroTier Tout reporting that opinions on how the industry will develop this year really are mixed.

Light at the end of the tunnel?

To return to the question of high input costs, it must be asked: How long can any company ride out high costs without passing those costs on? This is what is happening for many companies and is not sustainable, but even when costs can be passed on, there is a downside.

Chicken meat is the most affordable animal protein option, so passing costs on to the consumer will press some consumers out of the market, thus reducing volumes.

Lower income consumers exist in all markets, but demand is particularly sensitive in developing markets, which are repeatedly pointed to not only as the savior of the poultry industry but of the global economy as a whole.

For example, Brazil's total poultry output is

thought to have declined last year—the first contraction for 20 years. Producers have been selling at less-than-cost prices, due to a combination of high feed prices and weak consumer demand, a situation that cannot continue for long. The Brazilian economy as a whole, like those of its Russian, Indian and Chinese counterparts, is slowing. Of course, this is bad news for consumers, whose diets are being hit. For the poultry industry, companies are reducing capacity or closing down all together.

Profitability and efficiency

Of course for producers in those markets where demand has been fully satisfied or is weak or tailing off, export markets become even more attractive, but growing competition in this arena can only force prices downward. Some markets that have been strong importers are now trying to foster their home industries.

Cutting production may restore profitability, but this is inefficient from an investment point of view as facilities are made idle, and investment comes to nothing. In the end, we are told, markets correct themselves, but there can only be casualties as this process takes place. There is always a difference between practice and theory—markets are less than perfect. Let's hope that more are lucky in 2013 than unlucky, and there are not too many casualties as equilibrium is found. For those who do survive, profitability should be restored even if volumes are not.

Of course, in the long term, demand will rise. The percentage increases of the future may not be as impressive as those of the past, but overall volumes will go up. □

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NEWS YOU CAN USE

Roy Graber named new WATT business editor



Roy Graber

Graber brings 20 years of journalism experience to WATT and will cover the poultry, animal feed and pig markets.

Roy Graber has been named business editor for WATT Publishing Company. He brings to WATT 20 years of experience in the journalism industry.

He most recently served as the managing editor of the Winfield Daily Courier in Winfield, Kan. Graber grew up on a farm in Reno County, Kan., where he also lives now.

He earned a Bachelor of Science degree in journalism and mass communications at Kansas State University. He has earned numerous awards for his writing, including the Kansas Farm Bureau Golden Wheat Award for Excellence in Agricultural

Journalism, multiple Kansas Press Association Awards of Excellence, and an honorary FFA degree.

As business editor, Graber will cover worldwide poultry, feed and pig business for WATT's agriculture magazines and its website, www.WATTAgNet.com. Graber will contribute news, analysis and business trend stories in all the agriculture markets.

"This is another step in building our editorial team in the animal agribusiness sector," said Bruce Plantz, vice president, director of content at WATT. "We now have three editors concentrating on specific topics — business, nutrition and food safety — supporting our chief editors for each of our magazines. Their expertise in these areas will give our readers and viewers greater range and depth of content."

Graber will work from his Kansas office. After December 1, he can be reached at rgraber@wattnet.net, +1.815.966.5501. □

International Production & Processing Expo update

The 2013 IPPE will bring together over 1,100 exhibitors and an anticipated 25,000 attendees from around the world to the Georgia World Congress Center from January 29-31, 2013.

Hosted by the U.S. Poultry & Egg Association, the American Feed Industry Association, and the American Meat Institute, the Expo will highlight

the technology, equipment, and services used in the production and processing of poultry, meat and feed products, with opportunities for learning and all aspects of business. The tradeshow will cover close to 400,000 net square feet, making it one of the 50 largest tradeshows in the USA.

The 2013 Expo will also mark the International Poultry Expo's 65th year of continual exhibition services to the poultry industry.

Registration closes soon
Attendee and exhibitor pre-registration and hotel

International Production & Processing Expo

- * **When:** January 29-31, 2013
- * **Where:** Georgia World Congress Center, Atlanta, Georgia
- * **Show hours:** Tuesday: 11 a.m.-6 p.m.;
Wednesday: 9 a.m.-5 p.m.;
Thursday: 9 a.m.-3 p.m.
- * **For more information, or to register, visit:** www.ippe13.org

registration for the 2013 International Production & Processing Expo is open through January 11, 2013. Online is the only way to pre-register for the discounted price of US\$40. Visit www.ippe13.org. □

View the 2013 International Expo Guide online or on your smartphone
Access the educational schedule, exhibitor profiles, Atlanta dining information and more with our full-featured app for the Kindle Fire, iPhone, iPad and Android smartphones. Search for "IPPE Guide" in the Amazon Appstore, iTunes or Google Play, or bookmark www.digitalexpo-guide-digital.com on your mobile Web browser.

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by Mark Clements

Cairo Poultry Company's hatchery grows through challenging times



Cairo Poultry Company's Nubaria hatchery operates from a closed compound. Any vehicle entering the premises is automatically sprayed down to prevent the entry of infection.

Despite disease and political instability, the company's largest hatchery continues to produce chicks every day.

Cairo Poultry Company may have opened its Nubaria hatchery only months before Egypt was hit by avian influenza H5N1, but the facility has certainly managed to grow in the face of adversity. It was able to withstand the drop in demand for poultry meat but was ready to respond once the industry started to rebuild.

Located some 40 km from Alexandria, the

Egypt and avian influenza

It has been seven years since highly pathogenic avian influenza was first reported in Egypt. The disease, in addition to resulting in human deaths, reduced the country's poultry flock by 50 percent and wiped out exports. The national flock is, more or less, back to pre-avian influenza levels. However, the virus is now considered endemic, and the sector still has a long way to go to regain the healthy position it enjoyed before the disease hit.

Avian influenza was first reported in Egypt in February 2006 and has resulted in some 160 human cases, with at least 55 fatalities. When the disease hit, there was little understanding of how to halt its spread. Egypt's large number of outdoor chicken and duck flocks, along with live markets, provided ideal conditions for virus spread.



Fertilized eggs enter the premises, day old chicks are shipped out.

The company vaccinates day-old chicks against Newcastle disease or avian influenza depending on where in Egypt they are to be reared.

✦ See CPC's performance over the last three years:

www.WATTAgNet.com/Cairo.html

site is used to supply day-old chicks both to the company's rearing sites, one of which is nearby, and to external customers.

Production started in 2005, with 22 million day old-chicks, and since then the facility has been gradually expanded and updated. Capacity was doubled two years later, and increased again by 22 million in 2009. The hatchery produces 66 million chicks each year, accounting for some two-thirds of the day-old chicks produced by the company. The Cairo Poultry Company



Cairo Poultry Company at a glance



Cairo Poultry Company is a fully integrated investment group in the food industry, which started operations in 1977. The company is active in broiler and day-old chick production, slaughtering and processing. Its key brands are Koki and Americana and has captured 22 percent of the local market for processed and frozen poultry meat.

The Cairo Poultry Company has local, regional and overseas investors, and serves most of the large quick-service restaurant chains, and international hotels and retailers in Egypt.

The company produces compound feed for its own use and for sale. Production stands at 960,000 tons per annum, and the Cairo Poultry Company has captured 10 percent of the Egyptian feed market.

- ✦ Number of birds produced: 45 million
- ✦ Slaughter plants: 2
- ✦ Processing plants: 2 (40 million actual, 90 million capacity, birds per annum)
- ✦ Hatcheries: 2 (90 million day old chicks capacity)
- ✦ Employees in poultry business: 7,000
- ✦ Revenue 2011: US\$325 million

Although some zones remained disease-free, its impact was felt nationwide. For example, the country's breeder flock declined by 50 percent and the layer flock in excess of this figure, while the broiler flock is thought to have been reduced by at least 50 percent.

The Egyptian poultry industry is worth EGP18 billion (US\$3 billion) and employs some 5 million people. Despite per capita poultry consumption in the country being relatively low at 10 kg, the meat is the main source of animal protein. This, combined with the threat to human life, resulted in the government initiating various control strategies.

Culling and vaccination were started with vaccination being extended to backyard flocks in 2007, however coverage proved difficult due to the fragmented nature of the industry, and

Cairo Poultry Company



With careful planning, the date and time of hatch is controlled, meaning that chicks can be shipped during the coolest part of the day.

produces 90 million day-old broiler chicks each year, accounting for 13 percent of the Egyptian market.

The hatchery is run by two managers with the help of nine shift engineers and 60 other employees. In addition, there are support staff and drivers.

Infection control

The Nubaria hatchery is the larger of the fully integrated company's two hatcheries, and although at a relatively isolated location, biosecurity is high on the agenda.

Vehicles entering the premises are automatically washed down and disinfected and visitors must shower. All internal processes run from clean to dirty and static air pressure follows the same course. Strict protocols for disinfection are followed and the building is regularly swabbed.

And this attention to preventing possible infection extends to the chicks that the hatchery sends to the Cairo Poultry Company's farms.

« *The facility achieves 83 percent hatchability* »

Avian influenza/continued

particularly in slums and rural areas and, it was accepted, in 2008, that the disease was endemic. There are ongoing initiatives to vaccinate initiated by universities and animal health companies, but success with vaccinating on farm has been limited.

What makes Egypt so complicated?

Egypt lies on the one of the main migratory routes for wild birds, so there is a constant risk of the disease being spread. In addition, there is a significant duck population, which has been found to be a common factor across those countries where avian influenza has become endemic. A further complication is that various avian influenza virus strains have been found to be circulating in the country.

While Egypt has around 16 large-scale integrated producers, there is also a high

Hatcheries Sector Manager Aysar Abu El-Enen explains that day-old chicks are either injected or spray vaccinated against avian influenza or Newcastle disease, with vaccines varied depending on where in the country they are to be reared.

While adamant that it is up to everyone to protect themselves against disease, he is critical of the consequences resulting from the fragmented nature of the Egyptian poultry industry, saying he wished rooftop rearing would "disappear" but adding that there is greater risk from small farms than backyard rearing.

In and out

Eggs are delivered from breeding farms to the hatchery's storage room, and some come marked with a blue cross to indicate if

there is doubt over their hatchability. Storage at the reception room, where the temperature is held at 18-19C, is for a maximum of one day, before eggs are moved off to one of four storage rooms with a combined capacity for 1 million eggs.

number of small-scale producers. Keeping chickens on roofs in slums is also common.

In addition, most chickens are bought as live birds at markets, meaning that live birds are transported, further increasing the risk of disease. It is not simply that there is a preference for live birds; Egypt has less than 30 percent of the slaughterhouses that it needs.

And despite efforts to control the disease, important elements in the control program have been missing. For example, restrictions on bird movements were introduced in 2009 but were poorly implemented. Vaccination strategies have relied on single doses, without boosters, and post-vaccination monitoring has been poor for large producers and non-existent for backyard flocks. In addition, there is no compensation available to farmers with infected flocks, meaning there is little incentive to report infection.

Eggs are separated by farm and date, and information on fertility per house is fed back to breeder farms once eggs have hatched. The hatchery uses Chickmaster equipment and the time of hatch is carefully controlled, depending on the ideal time for chicks to be transported, like in the evening when the temperature is lower. The facility achieves 83 percent hatchability.

In addition to producing day-old chicks, the hatchery also offers training to others within the Cairo Poultry Company group. According to Adel Al-Alfi, the company's general manager, people are the company's most important asset, so the Cairo Poultry Company has a strong interest in increasing their level of skills, expertise and efficiency.

Despite the rapid expansion of the hatchery since its opening, there are currently no public plans to expand capacity. However, while running seven days a week, there is certainly plenty to keep the staff busy. And like the country as a whole, there is the difficulty of working in an unstable political climate. However, as El-Enen says: "A hatchery is like a big plane: it's very complicated, and it never stops." □

A new tool in the fight against avian influenza

Egypt's poultry producers now have a new tool in the fight against avian influenza. Animal health company Ceva chose the country to launch its new avian influenza vaccine Vectormune AI. Egypt is the second country to approve the vaccine following the U.S.

The vaccine can be used in broilers, layers and breeders, and combines new technology with a 50-year-old frozen Marek's vaccine. The new vaccine bypasses maternally derived antibodies that prevent day-old chicks from responding to vaccines and developing immunity to strains of avian influenza at an early age. The frozen Marek's vaccine (HVT) expresses a key protective H5N1 avian influenza antigen, the Haemagglutinine or HA protein. Once injected, the Marek HVT vaccine replicated and the HA gene is expressed inducing immunity against the field virus. It prevents clinical signs and mortality, and reduces shedding of the challenging virus.

Vectormune AI is injected into day-old chicks subcutaneously on the back of the neck at 0.2 ml per bird. Prior to use, it needs to be reconstituted with a Ceva sterile diluents, specific for Marek's vaccines. The vaccine must be stored in frozen form in a liquid nitrogen Dewar.

Vectormune AI's protection has been evaluated against various strains of the avian influenza H5N1 virus, isolated from around the world and belonging to various categories and strains. It ensured a survival rate of 80-100 percent of flocks within tests, no matter what the provenance of the strain. Once vaccinated, the vaccine remains within the chick.

Work developing the product began in Japan in 2002; it entered the regulatory approval process in the U.S. in 2008. Following four years of trials, all USDA requirements for the registration of a genetically modified organism-type vaccine were met. Authorization in the Egyptian market was obtained in 2012.

by Mark Clements

Future directions of poultry production highlighted at World Nutrition Forum

Broiler and egg producers alike were privy to the latest thinking about how agriculture must develop as a whole, as well as specific production techniques.

The Biomin World Nutrition Forum, held in Singapore in October 2012, looked at broad issues of relevance to meat production as a whole and focused on aspects of production of particular interest to the poultry industry.

Speakers were drawn from across industries to look at issues along the whole production chain right through to the final consumer.

What do consumers want?

Randolph D. Mitchell of Perdue Farms posed the question, "What do consumers want?"

Quoting Steve Jobs, he said: "You can't just ask customers what they want and then try to give it to them. By the time you get it built, they'll want something else."

In addressing the question, he stated that what consumers want from food is fairly simple in one context — they want safe, affordable and nutritious



Randolph D. Mitchell of Perdue Farms noted that we must truly think differently to solve today's problems.

More reporting from the WNF:

Animal agriculture producers must make efficient use of resources
www.WATTAgNet.com/154930.html

Key points for future poultry production highlighted at World Nutrition Forum
www.wattagnet.com/154959.html

food that tastes good.

Affordability, however, is most important to the large proportion of the global population that struggles with food insecurity. Yet, the growth in food categories such as "raised without antibiotics" demonstrates that consumers' views on nutrition and food safety are complex, to say the least.

Consequently, poultry producers should not ignore these societal trends; rather, they should work to incorporate better practices into efficient systems, and so maintain affordability while meeting consumer expectations and demands.

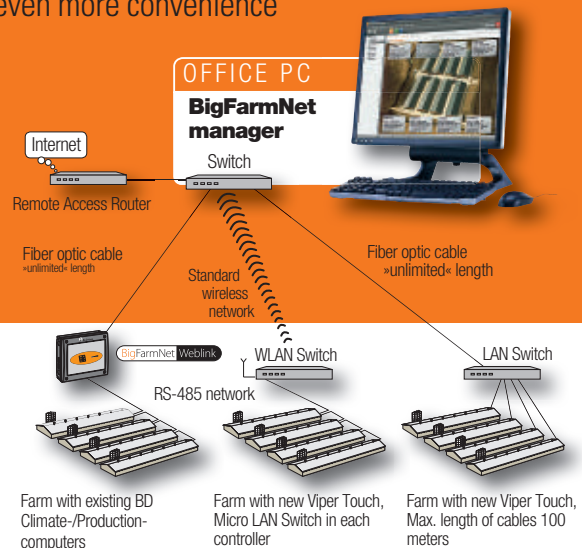
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As food safety is now a given for most consumers, agricultural sustainability is a growing expectation. Yet, the term means different things to different people.

A report from the US National Research Council, entitled "Towards Sustainable Agriculture in the 21st Century," defines four goals for sustainable agriculture. They are:

- * Satisfying the human needs for food, feed, and fiber and contributing to the need for biofuels;
- * Enhancing environmental quality and the resource base;
- * Sustaining the economic viability of agriculture; and
- * Improving the quality of life for farmers, farm workers and society as a whole.

Mitchell continued that this was not only broad-based, but possibly the best definition that he had read.

Re-think the future

Perhaps the most daunting task is to feed the more than 9 billion people expected to inhabit the earth by 2050, he continued. The United Nations estimates that, by 2050, we will need 70 percent more food than is produced today. Under any reasonable scenario, the only way to meet this challenge is to increase agricultural productivity.

"While I believe that technology can get us a long way toward achieving the first goal and partially toward the second goal of sustainability, the last two goals will need better policies toward agriculture and the people that have devoted their lives to it," he said, continuing: "Albert Einstein once said: 'We can't solve problems by using the same kind of thinking we used when we created them'. To reach all four

of the goals stated above for sustainability we must truly think differently."

For the most part, single discipline incremental research has brought us to the point we are at today. This type of research will continue to be needed. However, truly transformative research will require an interdisciplinary, holistic and agroecological approach. To achieve truly transformative research

will require scientists, farmers, policy makers and institution leaders, both public and private, to rethink their approach to research.

Optimizing bird health and nutrition

Tightening the focus of the presentations, Todd J. Applegate of Purdue University noted that within and between genetic strains of poultry,

immunocompetency can fluctuates considerably, adding that selection for rapid growth in broilers has long been criticized for reducing adaptive immunity while increasing cell-mediated and inflammatory responses.

Recent meta-analysis has shown that selection for growth compromises both cellular and humoral immune measures, while conversely, selection for immunity does not have the same effect on growth, he noted.

Variation in immunological response within a genetic strain varies extensively. In the past, identifying resistance to a particular insult/challenge was accomplished with slow, resource-intensive sibling tests. However, with the advent of novel selection tools, such as *in vitro* heterophil capacity, pro-inflammatory markers, etc.; genetic progress in immunocompetency can be accomplished at an unprecedented scale.

Looking at the recent focus of research, he added that it has solely looked at the initial response of the



Todd J. Applegate of Purdue University said that better understanding of feed additives is imperative.



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World Nutrition Forum

bird to a particular challenge and/or acquired immune capacity. Largely, it has lacked the dynamics of the responsiveness required to fully grasp the productive “cost” of the response, encompassing immunological reaction, reduction and recovery of food intake, as well as restoration and healing of damaged tissue.

The long-term consequences of this response have been noted on the intestine due to delayed placement after hatching or due to stressors such as early weaning in pigs. Recent work at Purdue University also suggests that recovery from an early stressor is different between commercial broiler strains, such that partial compensatory growth is plausible in some, but not all strains.

Dietary influence on health and genetic potential

The gastrointestinal tract, GIT, comprises a large nutrient digestive and barrier functionality. The functions of the intestines are vast and adapt to changing needs and demands. Stressors to the intestine increase the demands put on it to maintain barrier, digestive, and absorptive roles. For example, when exposed to coccidial challenge, the energetic efficiency of birds greatly declines.

Recent research at Purdue University has also demonstrated an energetic and nutrient “cost” model, utilizing sub-clinical challenges with a coccidial vaccine. In this model, up to a 39 percent reduction in apparent metabolisable energy, a 25 percent reduction in apparent dry matter retention, and a 48 percent reduction in apparent nitrogen retention five to seven days post-inoculation was measured. Responses of the animals to intestinal challenges, therefore, encompass a large loss, mainly due to nutrient and maintenance needs. In the pig, for example, digestive bacterial infections, can reduce growth by up to 40 percent,

of which 74 percent is due to change in maintenance rather than losses in feed efficiency.

Beyond the intestine, other factors may be influencing the variability in bird response. For example, factors such as toxicological responses may influence the efficiency to which individual birds respond.

Different feed additives and nutritional strategies have shown promise in changing and mediating the response and recovery of the bird to various stressors and challenges and so influencing flock performance and uniformity. Better understanding and application of these strategies is imperative in order to reduce the variability in maintenance and/or feed efficiencies.

«The poultry industry in the future should be more encompassing and responsive to change.»»

Probiotic supplements

It has been noted that the acute phase response induced by *E. coli* lipopolysaccharide diverted a large portion

of consumed nutrients from tissue accretion. Probiotic supplementation, however, lessened the duration of the anorexic effects of the challenge, resulting in improved weight gains. The improved partial recovery of feed intake when birds were supplemented with the probiotic, substantiates the role of probiotics not only within the intestine, but also when faced with recovery from and dealing with a systemic immunological response.

Supplemental zinc

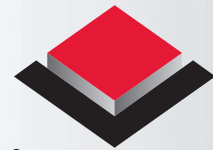
Recent work from Purdue has shown that, when comparing coccidial vaccine challenged versus unchallenged birds, intestinal tissue from broilers consuming a chelated zinc source was able to maintain resistance/and integrity, maintain a better relationship between inflammatory and anti-inflammatory cytokines, and lessened chloride secretion into the lumen of the intestines. This reduction in the inflammatory and anaphylactic response may alleviate the severity of symptoms observed by sub-clinical infections.



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World Nutrition Forum

Phytogenic extracts

Phytogenic extracts have largely been considered as feed additives for their immune-modulatory and antimicrobial activity. However, additional physiological benefits of phytogenic extracts have been noted in the intestine. For example, broilers

« *We can't solve the problems by using the same kind of thinking we used when we created them.* »

supplemented with an additive containing essential oils from oregano, anis and citrus peel had 30 percent more mucin-producing goblet cells.

To further explore the plausible effects

of phytogenic additives on the quantity and characteristics of intestinal mucal production, studies have found that supplementation with carvacol or thymol altered mucin transcription and mucin glycosylation or sulfation, particularly when birds were fed wheat-based diets. These physical and chemical modifications altered the mucin's hydration capacity. Essential oil supplementation may help alleviate digesta viscosity changes induced by non-starch polysaccharides from wheat-based diets.

Pace of change — vitamin D supplementation

The poultry industry has had specific cases where it has been slow to respond or adapt. A case in point is changes to vitamin D3 supplementation. Historically, the industry has



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supplemented vitamin D3 at concentrations well above what is typically reported as required. Studies have led many producers to supplement at up to four times what is now seen as necessary.

More recent evaluations of sources of vitamin D3 have resulted in variation in broiler bio assay. This, coupled with much improved methods of chemical analyses, has greatly improved confidence in the level and bio-potency of vitamins received by birds. However, where there has not been regulatory intervention, the level of supplementation used by the industry has not changed.

The dynamics of the response to environmental stressors and recovery from these stressors encompasses a bird's ability to reach its genetic potential. The goal of the nutritionist

is to predict the varying maintenance needs of the bird, and its varying ability to absorb and effectively utilize dietary nutrients, while fully understanding they are feeding individuals within a population that may be responding differently.

Formulation targets is therefore a balancing act of not losing too much feed cost due to "over-formulating," while realizing where shifts in maintenance needs or inefficient use of feeds may result.

Closer attention should be given to feed additives that maintain the intestinal barrier, reduce the variability of nutrient utilization within and between flocks, and improve the bird's ability to cope with and recover from immunological insult. The poultry industry in the future should be more encompassing and responsive to change, rather than being mired in tradition. □



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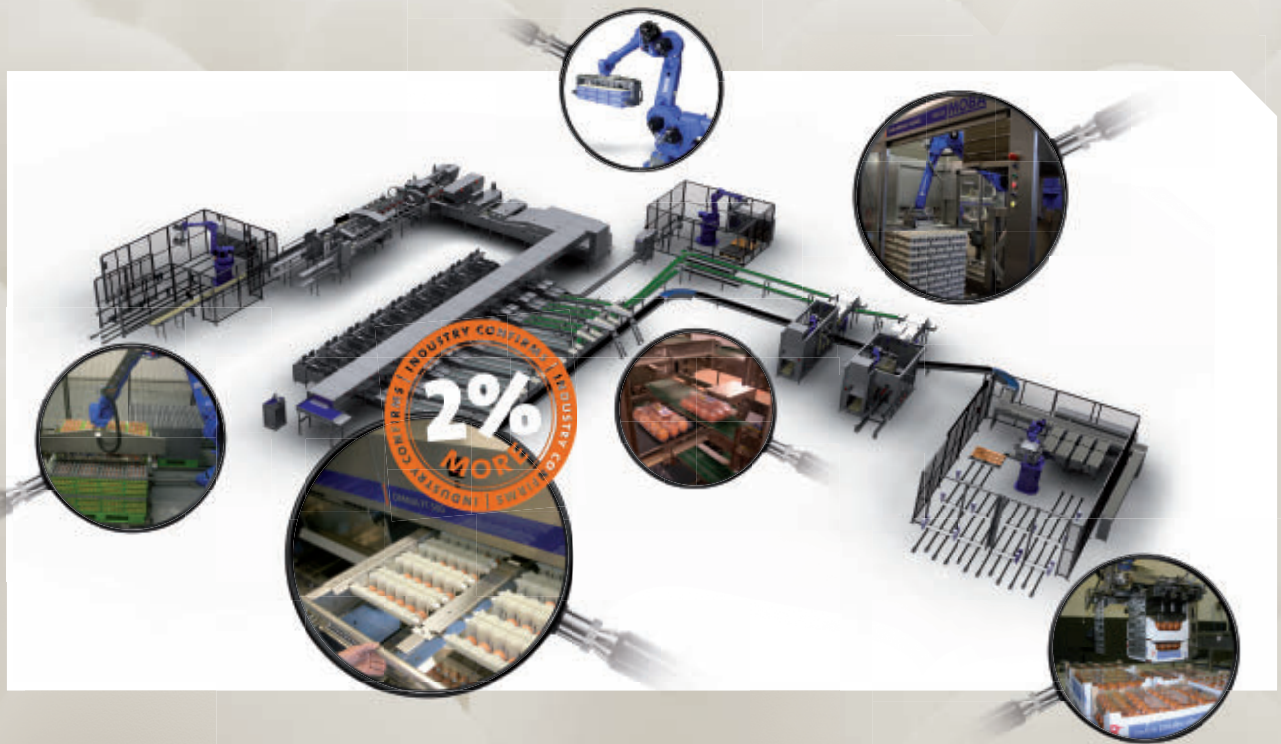
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by Ioannis Mavromichalis, Ph.D.

12 ways calcium prevents cracked eggs

The following checklist verifies layers receive the calcium they need to maintain high levels of production and eggshell integrity.

The feed nutrient calcium is often associated with eggshell quality problems, which is not surprising considering eggshells contain 94 percent calcium carbonate. A single eggshell weighs about 5-6 grams and at least 2 grams are pure calcium.

A marginal deficiency in calcium will first reduce and then cease ovulation in order to protect a hen's bone integrity. The immediate result of inadequate calcium intake is a rapid increase in cracked eggs and eggs with very thin eggshells. When such problems occur, part of the evaluation process involves monitoring factors that affect hen calcium intake and calcium use. The following 12 nutritional tips can be used to verify layers receive the calcium they need to maintain high levels of production and eggshell integrity.

1 Calcium hen feed concentration must be at least 4 percent. This should be adjusted according to hen age and feed allowance. In general, hens require at least 4 grams of calcium per day at the beginning of their cycle and as much as 4.5 or more towards the end.

2 A feed's major source of calcium is usually calcium carbonate (limestone) composed of medium (less than 1mm) and large (2-5 mm) particles in a 50:50 mix. This ratio can be switched to larger particles as hen age increases.

3 Adding an organic acid may increase calcium absorption in hens at the end of their production cycle.

4 Oyster shell (coarse) can quickly remedy problems caused by feeding limestone that is too fine. This feed additive is more expensive, but it is preferred for its superior quality.

5 Hens must have access to calcium in the late afternoon (when eggshell calcification peaks and calcium appetite increases) to ensure maximal and continual eggshell integrity.

6 Feed chloride levels should not exceed 0.4 percent as excess chloride aggravates calcium deficiency, especially during the summer months. Excess metabolic chloride



depresses a hen's carbonate production, which is required for the formation of calcium carbonate during egg calcification.

7 Saline water contributes to excess salt intake (chloride is again the problem here). This should be taken into account when checking sodium and chloride total intake levels.

8 If total chloride intake from water and feed is considered marginally excessive, then any sodium deficiency can be corrected using sodium bicarbonate instead of salt.

9 Excess phosphorus also will reduce calcium absorption. Total phosphorus should not exceed 0.4 percent in the finished feed.

10 Vitamin D is integral in calcium absorption and adequate levels should be added to the feed. Adding at least 3,000-4,000 units per kg of finished feed should be adequate for most situations. Adding 25-OH-D3 (calcidiol), the first internal metabolite of vitamin D, has been shown to increase calcium retention in hens.

11 Certain mycotoxins (zearelanone) are known to bind vitamin D in feed. Water administration of vitamin D is recommended in acute phases of mycotoxin contamination.

12 A larger egg does not contain more calcium carbonate than a smaller one. A hen deposits around 2 grams of calcium per egg regardless of size. As a result, larger eggs will invariably have thinner eggshells. This problem cannot be resolved by increasing calcium intake. □

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Asia 2013 focuses on entire animal production, processing supply chain



VIV sees today's meat business as being about improving yield, traceability, profitability, quality, portioning, efficiency, hygiene, performance and transparency.

VIV Asia 2013 will focus on animal feed and animal health as being vital for meat quality and safety. The show will be held March 13-15 in Bangkok, Thailand.

VIV Asia will showcase the industry's developments with this feed-to-meat concept. Feed to meat brings together supply and demand within the complete animal protein chain.

Animal health will be one of the main topics covered at the event, as consumer attitude and behavior about food is rapidly changing on a worldwide scale. In a related topic, the event will also focus on meat safety. After mad cow, classical swine and avian influenza, consumers are skeptical and want guarantees about the meats they eat. The demand for convenience food products, in smaller ready-to-eat portions, also is on the rise. Consequently, the importance of delivering fresh and safe meat products with an extended shelf life is increasing and will be another focus of the show.

To stay current with these developments, VIV sees today's meat business as being about improving yield, traceability, profitability, quality, portioning, efficiency, hygiene, performance and transparency.

Educational programs

To address these focus topics, the event will feature conferences and

seminars, including the following three programs.

MeatTech

MeatTech is a new program for VIV Asia, and it aims to educate about the slaughter and processing of pig and poultry meat. The audience for this program are those involved in integrated poultry and pig production companies and processors and packers in the meat and poultry industry. This new program is in response to the growing interest from show attendees in meat slaughtering and further meat processing.

VIV Animal Health Summit Asia

The VIV Animal Health Summit will focus on the use of antibiotics in animal feed. It will give decision makers an understanding of the European trends and developments in animal health and the impact in Asia. There will also be hands-on input on the possibilities to solve problems that arise. The summit includes a two-hour CEO-level conference and seminar sessions by exhibitors.

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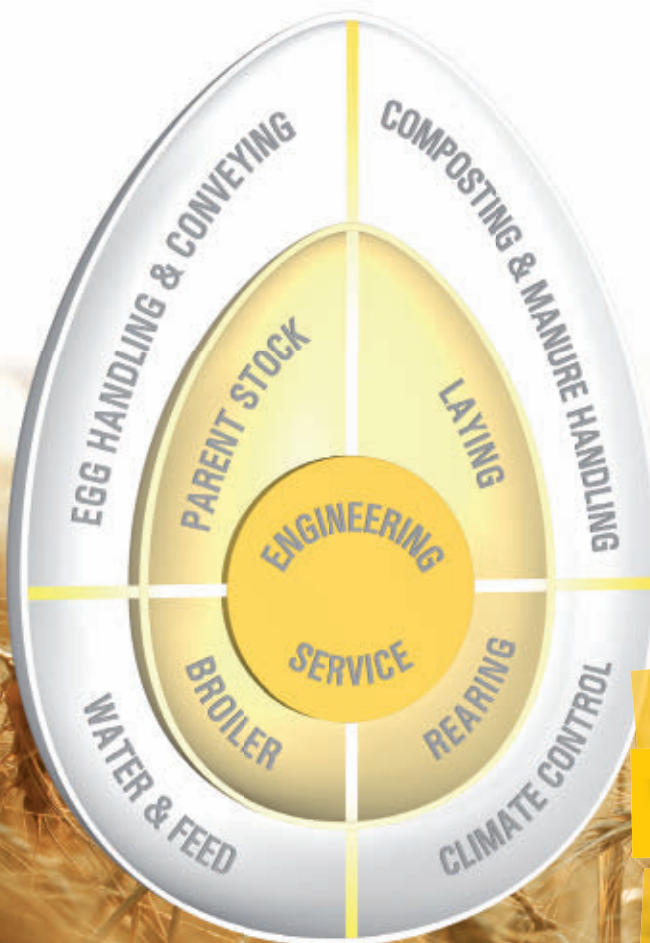
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VIV Asia 2013

Fast facts

What: VIV Asia 2013

Where: Bangkok International Trade & Exhibition Centre, Thailand

When: Wednesday, March 13: 10 a.m. to 6 p.m.
 Thursday, March 14: 10 a.m. to 6 p.m.
 Friday, March 15: 10 a.m. to 4 p.m.

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CropTech-FeedTech

Companies in the animal production sector are becoming more integrated, causing large companies to have a growing interest in the animal feed business.


CropTech-FeedTech addresses that trend and is an event for those involved in the milling, processing, storage and handling of crops and animal feed. The program focuses on the primary processing phases of crops.

On March 13, a poultry nutrition conference will be held, cosponsored by WATT. Christos Antipatis, of DSM, will address "The future of enzymes in poultry feed" from 2:00 p.m. – 3:00 p.m. □



Educational schedule: Visit the VIV website for the most up-to-date conference program schedule.
www.vivasia.nl/en/Bezoeker/Conference-Program.aspx

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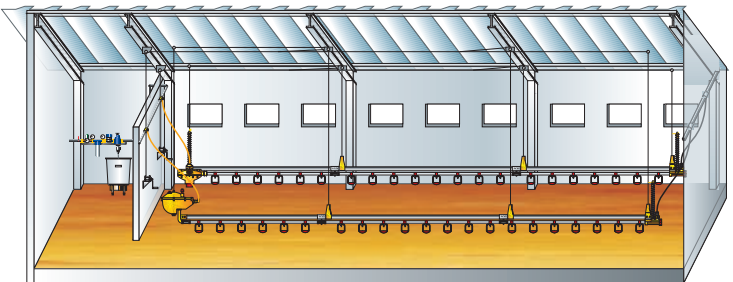
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Successful poultry processing needs teamwork across farm and plant

When the various actions along the production chain from farm to processing are carried out in isolation, the consequences can be reduced yield and quality.

Integrated broiler production is sometimes less integrated than its name may suggest. The coordination and seamless processes that should lead to the production and marketing of as much high-quality poultry meat as possible do not always work as smoothly as they could.

And when processes and procedures do not work as they should, or are missing, then the final yield is lower than what it could be. When systems are not implemented as they should be, there can be a need for each of those responsible for them to change their way of thinking and to take greater account of the process as a whole, rather than simply attending to specific areas of responsibility.

In addition to ensuring that birds have reached the desired weight for slaughter, the following activities must be carried out to ensure smooth slaughter and processing.

Feed withdrawal

If this is not properly carried out, birds will arrive at the processing plant with the digestive



This is the correct way to handle birds by pressing the wings to the body, which prevents flapping and possible trauma.

Read: The importance
of ergonomics in poultry
processing plants

www.WATTAgNet.com/155161.html

tract full of feed and fecal material. The following should be carefully reviewed:

Withdrawal period. The feed withdrawal period should be for some 8-12 hours preslaughter.

Water. Adequate supplies of water must be available in drinkers. Facilitating drinking not only helps to moisten food, aiding its passage through the digestive tract and expulsion, but also keeps birds hydrated.

Movement. Birds should be active and not static to help with the passage and expulsion of the digestive tract's contents.

Capture. Catching birds should be carried out after 5:00 p.m. to allow the full passage of food through the digestive tract.

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Successful poultry processing

Environment. Some environmental conditions encourage birds to eat. When these occur, capture should be delayed by three hours.

Quantity. Irrespective of the number of birds to be sent to slaughter, feed withdrawal should be staggered to prevent the problems that arise with an overly long feed withdrawal period—in excess of 12 hours.

Communication. Those responsible for preslaughter duties must be in regular contact with the processing plant, passing on information about the quality of feed withdrawal of incoming birds.

Care at capture

The aim of this stage is to capture and cage the birds that will be transported to the plant, ensuring that they experience as little bruising as possible. A number of points are worth considering:

Trapping procedure. It has been shown that the best way to handle birds is to hold them by the body with the wings pressed gently to it. This way, the birds cannot flap their wings and harm each other.

Condition of cages. Cages must be in a good state to avoid harming the birds. Broken cages should not be used, and cage doors must function properly so that they do not fall inwards or open on their own.

Quantity of birds. The number of birds per cage should depend on their size and weight. On the whole, only one size of cage tends to be used for transporting chickens, be they under 2.4 kg or over 3 kg. When birds are larger than normal, the result is often that they are forced into cages with insufficient space for the journey to the slaughter plant.

Transport to the plant

Chickens should be transported in comfort, so as to reduce to a minimum that the number that die from heat stress. There should be sufficient airflow, and the following points are worth considering:



The correct alignment of the breast comforter will reduce stress and flapping and prevent blood being pumped to the breast and wings, which can result in blood spotting.

The design and placing of the cages must allow continuous airflow to dissipate heat and prevent suffocation

In hot climates, birds need to be protected from the sun. Failing to ensure this can result in suffocation increasing the number of dead on arrival.

Birds should only be loaded onto Lorries once all the cages are full. While waiting to be loaded and during loading, fans in the poultry houses should remain on to keep the birds cool.

At the slaughterhouse

At the final stage of the process, a number of factors need careful consideration to ensure that there is no loss of yield or quality.

If birds are not to die from heat stress, the waiting area should have the necessary infrastructure to ensure the removal of heat that is generated by the filled cages.

There must also be an adequate circulation of air at the reception area to ensure that birds remain calm prior to slaughter. In addition, ensuring a smooth work flow at this stage is essential to prevent birds from remaining there for an overly long period resulting in an extended feed withdrawal.

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Equipment must be properly adjusted to ensure that birds do not become agitated. For example, the hanging area must be kept dark, and if there are fans they should be as quiet as possible to not disturb the birds.

The breast comforter should be stable and aligned with the shackles to ensure proper contact with the hung birds and to discourage flapping, which increases the blood flow to the breast and wings. If this does not happen, then following bleeding, there will be blood residues in those parts of the carcass making it less attractive.

The time between hanging and arrival at the stunner should not exceed 30 seconds to prevent the build-up of blood in the neck and wings.

Bleeding time should not be more than three and a half minutes to avoid the onset of rigor mortis or muscle tightening, which would require an increase

in the temperature of the water in the scalding.



Scalding and plucking operations must be synchronized. One of the factors that leads to successful plucking is conserving the heat in the carcass that has resulted from scalding.

Given that feed withdrawal can never be perfect, use of warm water is recommended when peeling the gizzard to reduce adhesion, which can reduce its quality and yield.

To ensure that all the above are properly met, both staff on the farm and at the processing plant must work together in real time. Acting in isolation can have a negative impact on yield and quality and should be discouraged for the benefit of all. □

► *Eduardo Cervantes Lopez is an international consultant based in Colombia. He can be contacted at: icproave@hotmail.com or via www.icproave.com*

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NEWS YOU CAN USE

Jamesway opens incubator production facility in China

Facility is dedicated to the production of Jamesway's latest offering in the Single Stage series

Jamesway Incubator Company held an open house at their new production facility in the business district of Beijing, China, September 22. Visitors from across China and Malaysia came to walk through the clean, organized aisles and view the production equipment and

the incubation systems being readied to ship on Jamesway's latest order to a local customer.

At the open house, visitors learned that this facility is dedicated to the production of Jamesway's latest offering in the Single Stage series, known as the Gold Line machine. The Gold Line has been designed in answer to the requirements the Chinese market – a Chinese-made machine with Canadian craftsmanship. Cost savings will be passed on to the customers

by supplying welded racks, which require no assembly at the hatchery and local supply of the Gold Line machines to save customers on shipping costs.

During the open house, products such as incubator racks and environmental control units were on display. This facility has been fitted with the latest equipment, such as the newly purchased laminator from Europe, so that Gold Line machines will be made to the exacting standards that are maintained at Jamesway's

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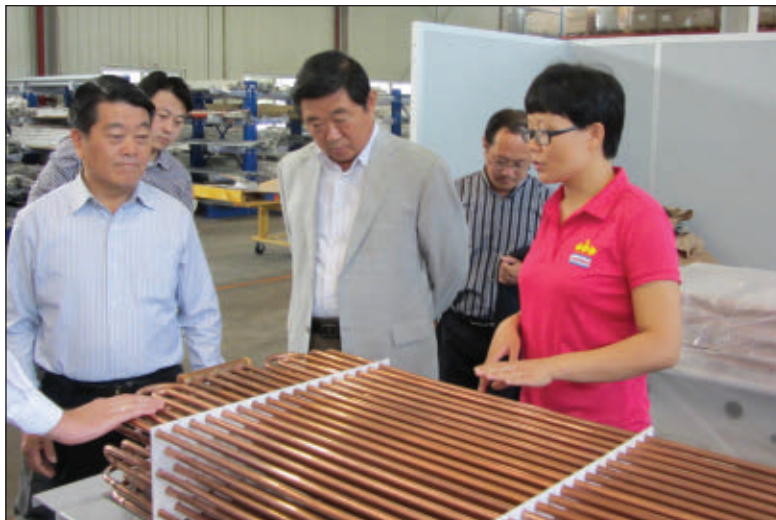
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Customers inspecting the heating coils of the Gold Line environmental control unit in Jamesway's new production facility in Beijing, China

main production facility in Cambridge, Canada.

For more information, visit the company's website. [□](#)

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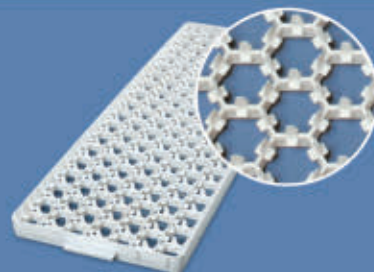
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Jansen Poultry Equipment developed the BroMaxx colony

system for broiler farming to solve the problems of breast blisters and other injuries. The BroMaxx colony system is designed with special slatted floors and manure belts to separate the broilers from their manure. The floor is designed with a grid to let the manure fall easily through on the manure belt.

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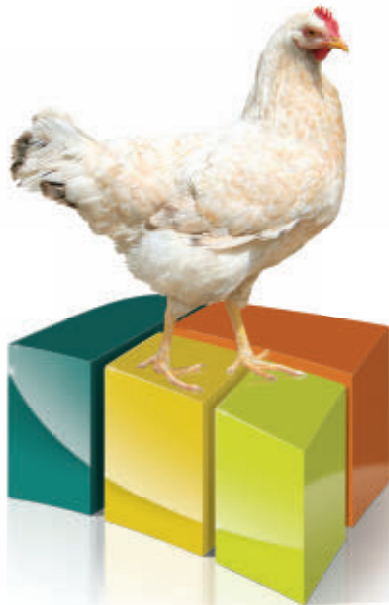
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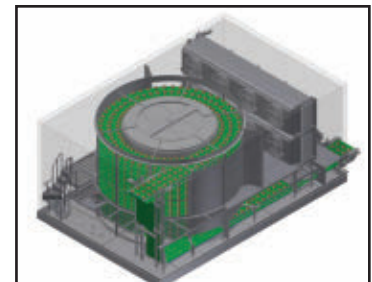
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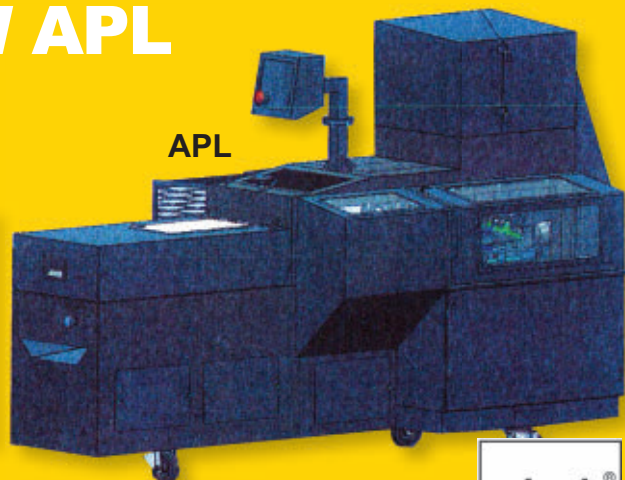
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