Egg Industry
News for the Egg Industry Worldwide

May 2007/Volume 111 Number 5

www.wattpoultry.com

2007 Could Be "Banner Year" for Egg Exports

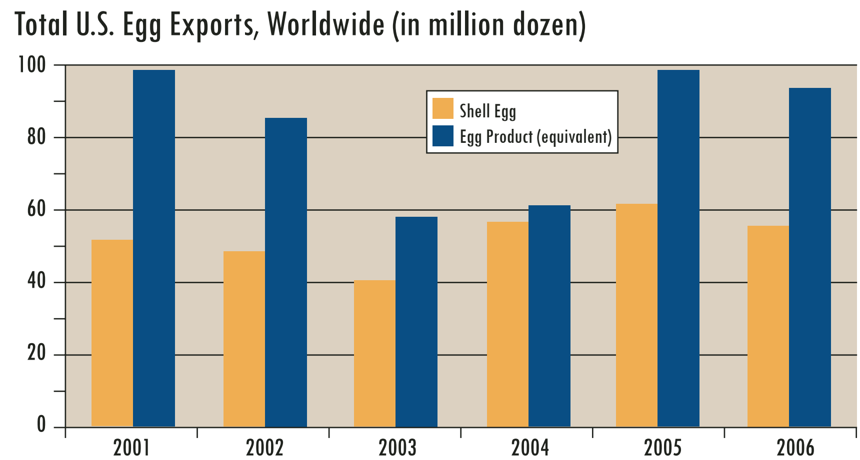
By Edward Clark, Editor

It's still early, but the U.S. egg export picture is looking good for 2007. "If the first two months are any indication, it should be a banner year," says James Sumner, president of the USA Poultry & Egg Export Council, Stone Mountain, Ga.

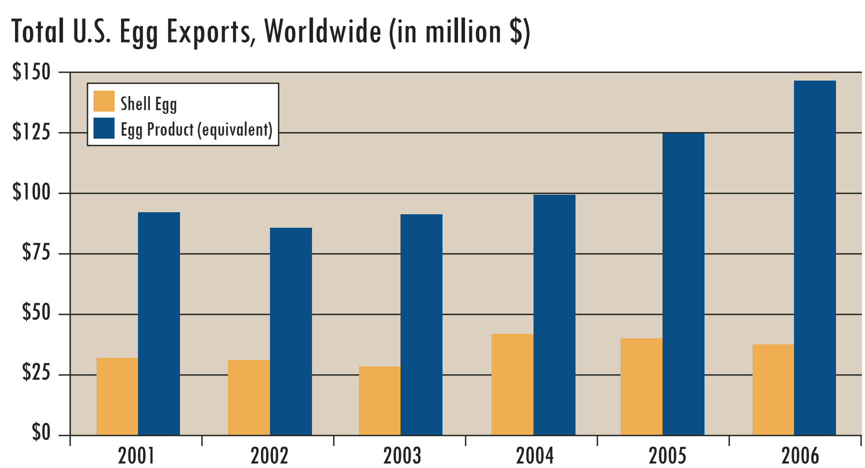
For the first two months of the year, shell egg exports—due to surprising strength of orders from mostly Europe through the United States Egg Marketers (USEM)—were up 147% from the same period in 2006 on a volume basis and a 134% increase on a value basis. That works out to 14.7 million dozen eggs exported in the first two months of 2007 compared to 6 million dozen a year ago.

"While we're very pleased, I'm not sure shell egg exports can be maintained at that level for the remainder of the year, however," Sumner says.

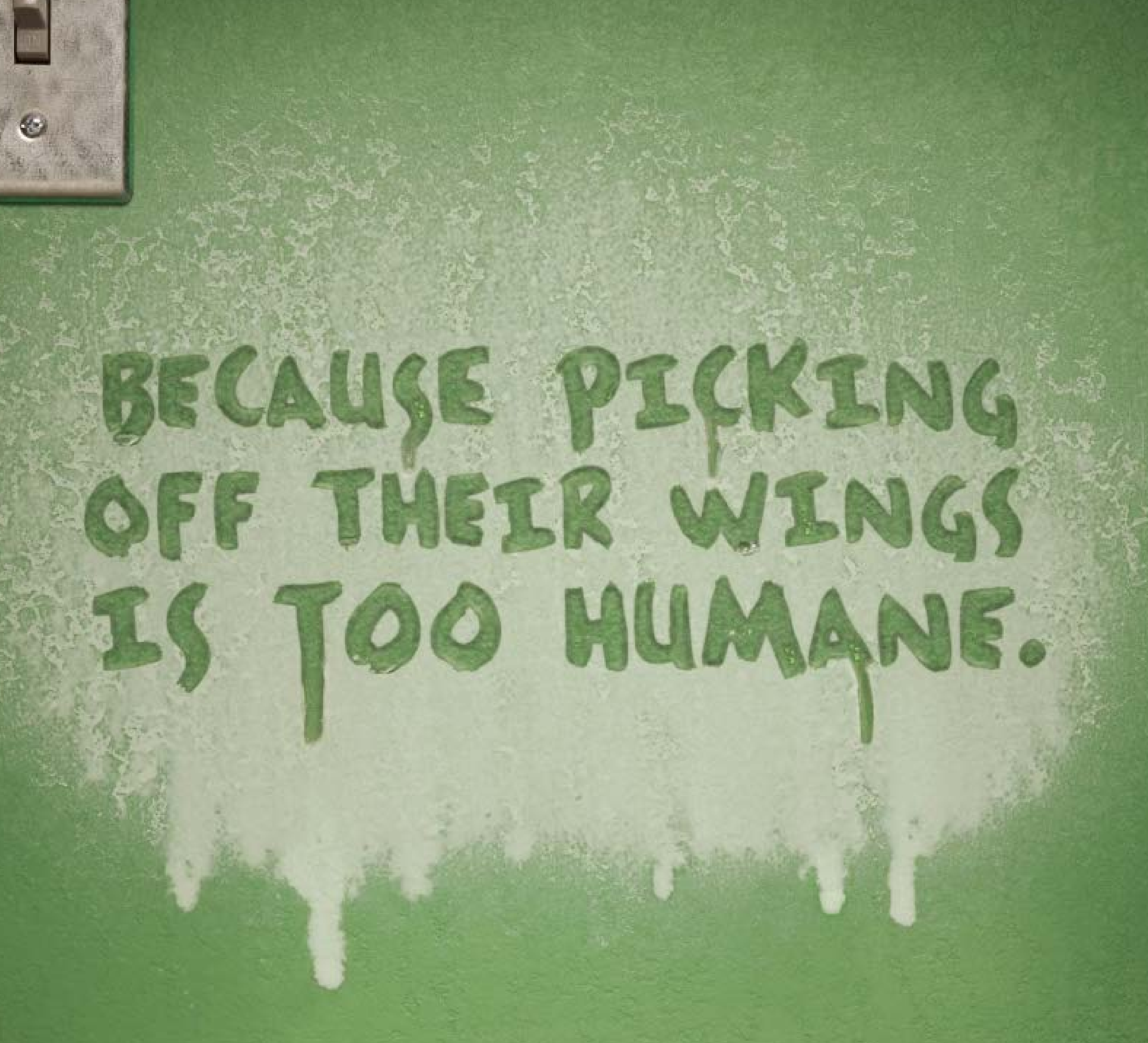
For 2006, exports of eggs and egg products totalled $181 million. Total exports increased 12.5% from 2005 to 2006, with last year's exports 58.8% above 2002 levels. As the charts show, exports of egg products have increased substantially relative to shell egg exports in recent years.



The above chart shows U.S. shell egg exports and egg product export equivalents on a volume basis from 2001 to 2006. Source: Foreign Agriculture Service.



The above chart shows that the export value of egg products gained as a percentage of the total relative to shell egg exports from 2001 to 2006. Source: Foreign Agriculture Service.



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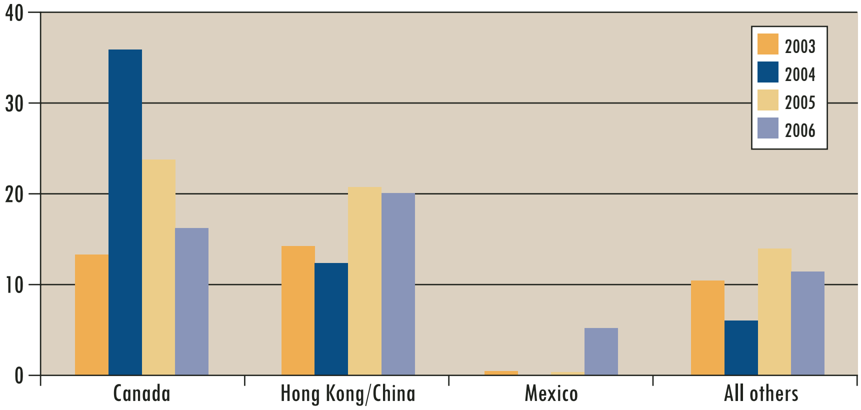
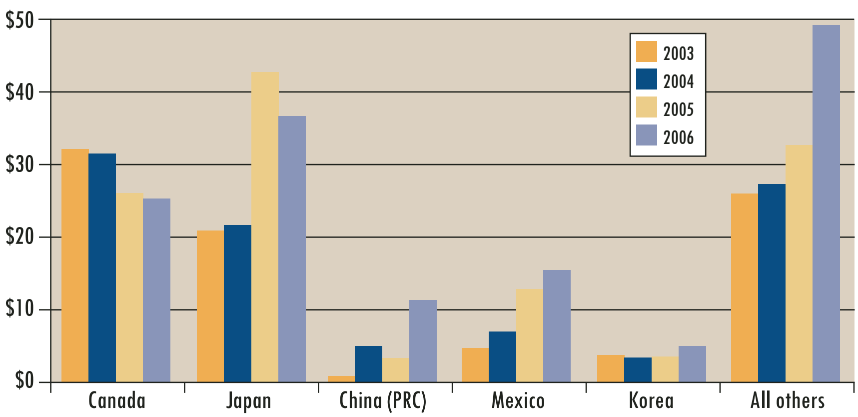
Top Table Egg Export Markets (in million dozen)



The above chart shows that Asia is gaining as an export market for U.S. table eggs. Source: Foreign Agriculture Service.

Top Egg Product Export Markets (in million $)



The above chart shows that Japan and Canada are the top two markets for U.S. egg products, but China has been growing rapidly. Source: Foreign Agriculture Service.

More Deals May Be in Works

Other shell egg deals could be forthcoming this year, says Larry Seger, USEM chairman of the board. One reason why, he says, is that with grain and oilseed prices so high, other countries may be concluding that it makes more economic sense to import eggs and other animal proteins than corn and soybeans.

Increases on the egg products side were also impressive in January and February, though not quite so staggering. Exports on a value basis were up 37%, to $26 million, U.S. Department of Agriculture data show. Because liquid, frozen and dried eggs are all combined, looking at volumes gives an inaccurate read of the data, Sumner says.

It's impressive that processed exports were up, he says, with Japan, the U.S. largest processed egg market, down slightly. Helping to offset that were exports to Mexico, which were up 83%, and a 322% increase to the Middle East.

One reason Sumner gives for the increases "is that food service is realizing that a lot of labor can be saved by buying processed eggs." As a result of this and high grain prices, which favor U.S. egg producers, he sees the 3% total of U.S. egg production that is exported "going up."

Europe Cage-Free Aids U.S. Exports

Another reason for the trend of increased exports of U.S. egg products to Europe is the movement to cage-free production there is limiting production, says Dave Cisneros, vice president of Sparboe Cos., Litchfield, Minn. "And Asia offers good prospects," he says. Cisneros agrees that high grain prices favor the United States. "South America has the advantage on soybean meal, but egg production is more corn-based," and the United States is self-sufficient in corn, he says.

The trend in egg product exports, Cisneros says, is going to be more value-added egg products. And while demand is not there now, he sees omelettes and egg patties offering export potential.

EggIndustry

published monthly by Watt Publishing Co.
122 S. Wesley Avenue, Mt. Morris, Illinois 61054-1497 USA
Tel: (815) 734-4171, Fax: (815) 734-5649, http://www.wattpoultry.com

SUBSCRIPTIONS:
Subscription print edition prices: USA $84.00/yr, Canada $102.00/yr, Outside USA & Canada via Airmail $144.00/yr; $14/copy unless marked. Digital edition sent by e-mail: $36.00/yr. Prices in US Dollars. Business or occupation information must accompany each subscription order.

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2007 Could Be "Banner Year" for Egg Exports

Bret Jenkin, food service business manager for Primera Foods, Cameron, Wis., says that the big increase in shell egg exports, which could be processed by other countries, could hurt exports of processed egg products this year. On the positive side for the United States, he says, is that the country does not have avian influenza, and has a reputation for product safety and quality—although it's nothing that can be taken for granted.

Jenkin adds that U.S. processors "have to be better, because there's new competition out there on frozen whole eggs and powders—from China, India, and Australia." **EI**

CORRECTION

The contents box in *Egg Industry's* April issue contained a mistake. An article related to American Egg Board was listed in the contents box as "AEB Votes Against Funding Egg Nutrition Center." It should have read "AEB Votes Against Funding Egg Industry Center." The headline and story on page 8 are correct. Obviously, the American Egg Board is supportive of the Egg Nutrition Center, an official says, as AEB provides its funding and directs its programs.

INDUSTRYNEWS

Cage-Free Legal Efforts Falling Short

Measures in states to ban cages appear to be falling short. In New Hampshire, cage-free measures were voted down in committee and then by the entire legislature; in Connecticut, a cage-free measure was defeated in committee; in Washington, a committee considering a measure decided not to take a vote; and sponsors of a measure in Arizona pulled the bill after visiting an egg farm there.

The outcome of measures in California and Delaware were still undecided at press-time.

Federal legislation has also been introduced that would require the federal government to use animal welfare guidelines in making purchasing decisions for the school lunch program and other government purchase programs that is in excess of current industry practices.

Egg Prices Increased 33 Cents in First Quarter

Retail egg prices increased 33 cents to $1.51/dozen in the first quarter 2007, the largest increase of any of the food items in the American Farm Bureau Federation market basket survey.

"For the past several years, eggs have typically increased modestly in retail price from the fourth quarter of one year to the first quarter of the next and this year is no different," says AFBF senior economist Terry Francl.

The informal survey shows the total cost of 16 basic grocery items in the first quarter was $41.34, up about 4% or $1.65 from the fourth quarter of 2006. Of the 16 items surveyed, 12 increased and four decreased. A 5-lb. bag of flour increased by 30 cents to $1.90; bacon increased by 24 cents per pound to $3.44; and pork chops rose 22 cents per pound to $3.41.

One pound of cheddar cheese showed the largest average retail price decrease, down 10 cents to $3.69.

The share of the average food dollar that America's farmers and ranchers receive has dropped over time, despite gradual increases in retail grocery prices. "In the mid-1970s, farmers received about one-third of consumer retail food expenditures on average. That figure has decreased steadily over time and is now just 22%," Francl says.

Chicago Hospital First to Go Cage-Free

Chicago's Swedish Covenant Hospital is the first hospital in the country to use only fresh cage-free eggs. "We wanted to provide the best food source we could and be involved with the humane treatment of animals," patient food services manager Maria Simmons, says in the *Chicago Sun-Times*. "It has a lot to do with doing the right thing," she adds.

But patients were mixed on whether cage-free eggs tasted better. "Not a bit of difference," says Robert Souvigny, after trying scrambled eggs made from both cage-free and conventional eggs.

USEM Completes a Fourth Export Deal

The United States Egg Marketers completed its fourth export order since last fall, with 200 containers to be shipped to Europe, Japan, and other nations. The total of containers now has reached 890 since last fall. Each container contains approximately 800 cases.

"The most before we've had is one or two a year, and now we've had four within six months," says Gene Gregory, President and CEO of United Egg Producers, Atlanta. There were no USEM exports from February 2003 until October 2006. "My gut feeling is that yes, there is more to come," he says.

Gregory lists several reasons why he thinks the export deals have recently occurred: flock reductions due to animal welfare issues in Europe; the fact that most countries look to the U.S. eggs as being high in quality; and "our producers are willing to sell at a discounted price."

Egg Executives Discuss Top Industry Concerns

While some argue for supply management to avoid summertime losses, others say a new pricing system is needed to take out volatility for producers and customers alike.

By Edward Clark, Editor

For Cal-Maine Foods president Dolph Baker, the No. 1 challenge facing the egg industry is the need for supply management during low demand periods to take some of the volatility and loss cycles out of the business. This is particularly important, he says, if per capita egg consumption is leveling off.

"We can do a better job," he says, "with molting and emptying houses."

Escalating Costs

He adds that "we've had only one profitable summer in the last 20 years."

That said, Baker, of Jackson, Miss., is optimistic that "with costs where they are, we'll do a better job with supply this summer. That doesn't mean shell egg producers will be making money this summer," he says, "but maybe our losses won't be as big."

Larry Seger, president of Wabash Valley Produce, Dubois, Ind., says the No. 1 challenge facing the industry is "how to deal with the escalating cost structure in the business from rising corn and other inputs that go into the price of feed." He notes that egg production costs have gone up 10 to 15 cents per dozen at retail or food service. "Will we lose demand? I don't think demand will ratchet down another 5%" with the cost of eggs going up, he says.

On summer economics for the industry, Seger does not rule out profitability in some months, even though Easter through Labor Day "is the worst time of the year." He says that prices did not crash post-Easter to the extent they usually do, because it appears the industry is doing a better job than typically with molting and other ways to keep supplies in check. In addition, Seger says he "doesn't see a lot of new construction going on."

Consolidation in the egg business will continue with market participants fewer and larger, executives say, although most do not believe the industry will ever get down to just the handful of players that the broiler industry has.

Rob Harrington, chief operating officer and executive vice president of marketing for Golden Oval Eggs, Renville, Minn., says the industry faces two big challenges. The first "is to keep up with good humane animal practices," and the second is to deal with egg price volatility. Golden Oval, an egg products company, has seen prices as high as 70 to 80 cents and as low as 20 cents for liquid unpasteurized eggs over the past three years," Harrington says, "This is a very big challenge and we're not alone." The solution, he says, is to use risk management tools with customers "to help us even out the highs and the lows."

Echoing the theme, Bob Krouse, president of Midwest Poultry Services, Mentone, Ind., says, "the biggest problems facing the industry are price volatility and profit and loss cycles."

It's important for the industry to come up with ways to level out price volatility and if the industry doesn't, customers will come up with their own plans, Krouse says. One possible solution, he says, is for eggs to be priced based on the cost of production—cost/plus pricing, to replace the current "commodity" pricing approach that treats eggs like No. 2 yellow corn. Looking at this summer, Krouse looks for the losses "to be a little more than 2006," due largely to such high corn prices.

At the top of the list of one Southeast egg president, meanwhile, are efforts by "non-caged animal welfare advocates" and regional pricing issues.

Egg Demand Growth

Executives interviewed say they expect continued growth in specialty eggs and value-added egg products, but disagree on whether that will create new overall per capita demand, or rather cannibalize traditional egg and egg product sales.

Specialty eggs—organic, free range, and Eggland's Best—are growing at a double-digit rate at Cal-Maine "and are an important part of our bottom line," says Baker. "We have been in the cage-free business the past 15 years," he notes, "and it continues to grow."

Specialty eggs give the industry "a shot at increasing total growth," he says.

Seger, however, thinks specialty eggs will just cannibalize traditional egg sales. "The more we put on the shelf, the more we confuse consumers," he says. "Specialty eggs are a niche, but we have to be careful," Seger says. He also says that there is the possibility that several national restaurant chains will increase the use of eggs nationally, noting that "this type of thing will help us."

Harrington looks for shell eggs to be flat to up 1% over the next few years, while processed egg products will increase far more rapidly. He looks for processed products to increase 2% to 3% per year, while specialty products—nutritionally modified, low fat, low cholesterol and prepared meal concepts—will increase by 4% to 6% per year. While he largely sees a switch in consumption from shell egg to processed products at both the retail and food service levels, Harrington nonetheless thinks both categories of processed products will increase overall egg consumption slightly.

Krouse does not believe demand has hit a plateau, and says that "specialty eggs seem to increase overall egg sales." He also says that he believes egg demand is inelastic—unrelated to price. "We've proven that. A 40-cent swing doesn't change demand at all."

Consolidation

Consolidation in the egg business will continue with market participants fewer and larger, executives say, although most do not believe the industry will ever get down to just the handful of players that the broiler industry has. "I hope we never look like those guys and I don't think we will," Krouse says. The reason why: the egg business does not require the level of investment that broilers—as meat processors—require, he and others say. "I don't think we'll get down to three or four producers," he adds.

Krouse says that the industry is now down to about 250 major producers and that will continue to change, "but for us to get to fewer than 10 there would have to be an economic advantage to doing so, and it's just not there in the egg business."

Neither does Seger see the industry becoming like broilers, and says that the industry is far too independent to get down to just one or two major national players.

One executive says, however, that there is no reason to believe the egg business structurally will not eventually look like broilers, and it could happen in as few as 10 years. Just look at the number of egg companies paying into the American Egg Board in 1980 versus 2000, he says.

> ***Specialty eggs—organic, free range, and Eggland's Best—are growing at a double-digit rate at Cal-Maine "and are an important part of our bottom line."***
> ***—Dolph Baker, Cal-Maine Foods***

Cal-Maine's Baker says that "there is no question we will continue to consolidate, but I have no idea if we will ever get to where the broiler industry is. If we do, it will take 15 to 20 years."

Golden Oval's Harrington says "yes, we will move in the direction of broilers, but it will take quite a bit of time."

Animal Welfare

Krouse, of Midwest Poultry Services, says he believes "it seems likely that some states will ban caged production," although it's unlikely that cage bans will become a national trend. "It's far too expensive and the benefits aren't there," he says. In Krouse's view, it will be left up to the consumer to choose cage-free eggs, but not legislated on a national scale.

"I sure hope states don't legislate cage-free production. We will be working hard to make sure that doesn't happen," says Baker, who also is the chairman of the board of the United Egg Producers, which is active in battling cage-free legislative efforts.

Harrington says it's too early to know how the cage-free issue will be resolved, but he notes that some of Golden Oval's biggest customers "are moving in that direction." EI

Invest in Brand for Premium Prices

Editor's Note: Articles on the next several pages are reports from the recent International Egg Commission conference in London.

By Terry Evans

To supermarkets, the egg category is a commodity and unless the egg industry does something about this, nothing will change. That's the view of Peter High, High Marketing Ltd., New Zealand, who spoke at the recent International Egg Commission conference in London.

"Our customers, consumers and competitors have become more sophisticated (on branding) over the years, but in general, our industry has been left behind," he said.

Egg producers all over the world have spent large sums of money on equipment, he said, but virtually nothing on establishing a brand, which, if treated properly, would secure them a profitable business and everlasting success.

High said that the first step to achieving brand success is to be an innovator; there is a need for egg companies to distinguish their products from their competitors. "If you don't, then price will always be the purchasing factor," he added.

Supermarket customers need to be convinced that eggs are different. But the consumer struggles to differentiate among eggs, which is understandable, High said, because in general, producer/marketers have never really tried to do this.

In the supermarket, the consumer scans approximately 11.5 products per second and if there is little difference in the appearance of packaging over competitors, then the egg purchase becomes a commodity buy.

"Packaging is important," he said. "Research has proven that people will identify with color first before brand or logo." High continued, "fortunately we now have packaging that can help us achieve this." However, he stressed that it is never enough to have only a visual point of difference. "This only amounts to you owning a label and not a brand," he added.

"While a label will attract the consumer, a brand will keep the consumer," he asserted. To move from a label to a brand, a product has to be perceived to be better by the consumer. "The product must perform in reality or perception, to achieve repeat sales," he said. For example, research in Australia has shown that yolk color is perceived as an indication of egg quality.

"As the flavor of an egg can be influenced by the chickens' feed, are there possibilities to produce a savory flavored egg, or a sweeter tasting egg?" he asked. "We have gourmet tomatoes, mushrooms and potatoes, why not gourmet eggs? Why not sell your small eggs at a premium price under a gourmet brand?"

A large number of shoppers do not buy the cheapest cage eggs in the store, he said, so egg marketers should fragment their offerings.

Consumers are influenced by emotion to varying degrees, High said. This emotive influence could be based on many things such as animal welfare (kind to animals), quality (a trusted performer), environment (kind to the planet), versatile (many applications), healthy (good for me and my family).

Regarding free-range eggs, he said that the people who buy them tend to be middle-class to wealthy. They believe that the free-range egg is healthier because the hens are happier or that the eggs are of better quality. Obviously, these shoppers can afford the higher prices and are generally those who care about the environment and the well being of their families, he said.

Peter High

These customers do not need convincing about the merits of free range, and his advice is that the industry should embrace the concept, brand it, market it and make some money. "If there is an oversupply, then market even harder and grow the market," he added.

Rene Boender

'Haute Convenience'

"We are not in the egg business, we are in 'haute convenience', the fast moving egg goods business, said Rene Boender, of Great Opportunities, the Netherlands. "We need to outsmart the food competition and, most importantly, better understand business to business relationship and the eventual consumer," he said.

An egg-marketing audit has revealed that eggs are losing their momentum, he said, and yet it also showed that people love eggs. "We are working in the 'get-ready market' and now, faster growing 'on-the-move market', as people don't cook any more," he said.

Among his ideas for giving eggs a new momentum are:

➤ Promoting the fact that top athletes maintain that they need eggs to get in the right shape,

➤ Produce an egg (candy) bar that would be better and healthier than a candy and could be sold at petrol stations,

➤ Use a color code as a branding device,

➤ Promote eggs with added health,

➤ Launch an annual worldwide Top Chef's Egg Recipe Award.

He pointed out that women increasingly decide when, where and what to buy. He added that women (and the new men) were 'cash rich but time poor'. So, they would exchange money for time, which allows the industry to market products that save time at a premium.

Branding Opportunities are Not Without Challenges

Marketing of eggs is likely to change as much in the next 10 years as it had in the past 10 in the United States, said Beth Schnell, Sparboe Farms, Litchfield, Minn. In 1987, there were 2,500 U.S. egg companies owning 75,000 or more layers and there was no attempt to brand eggs nationally, individual companies' branding success being limited to local markets, she said.

Beth Schnell

Looking at branding in 2007 she said that two key factors had changed everything. The first was consolidation in the industry. Just 260 companies have flocks of more than 75,000, of which 11 have over 5 million birds. And second is the introduction of specialty eggs such as Omega-3, organic, and cage-free.

However, in 2006, private label/store brands still had a retail market share of over 76%. Of the 53 largest markets in the United States, only 10 had branded eggs with a more than 10% market share. The larger pack sizes (18 eggs per carton or more) were the key to the branded market share in eight of these 10.

Only two companies have successfully developed market shares of over 10% with 12-egg packs leading the way. Larger-sized eggs dominated the branded sectors in the Super Center and Club Store markets, in particular 18- and 60-egg packs.

While Land O'Lakes introduced branded eggs nationally some six years ago they currently have only a 0.7% share of the supermarket sector, she said. However, recent years have witnessed successful marketing of specialty eggs with Eggland's Best, currently having a market share of 4%, and Horizon and Organic Valley also marketing nationally. These specialty eggs included: organic, cage free, Omega-3, lutein, free range, vegetarian diet, hormone free, no antibiotics, pasteurized and combinations of these, such as cage-free, organic brown with Omega-3.

There are also a number of regional producer brands such as her company, Hillandale, and Manhard.

A factor which has aided branding is an increase in the availability of different pack types which now include foam, fiber, clear plastic, corrugated sleeves, overwrap and boxed.

In 2006, supermarkets accounted for 72.8% of retail egg sales, Super Centers 13.9%, Club Stores 6.7% and others, 6.6%.

Regarding egg size, 74.2% were large, 11.2% extra large, 8% medium and 6.3% jumbo.

In terms of pack size, 61.3% of eggs were purchased retail in 12-egg cartons, 28.1% in 18-egg packs, 5.5% in 30-egg, 1.9% in 60-egg containers, with just 1.7% in 6-egg packs.

However, she said the most successful food brands that were household names in the United States had not only a long heritage, but had spent billions of dollars on promotion. **EI**

Biofuel Growth Drives Up Feed and Food Prices

By Terry Evans

At present, bioenergy production is not yet a threat to the egg industry, but possible climate change to the end of this century will lead to a fast expansion of the bio-energy industry. That's the view of Dr. Hans-Wilhelm Windhorst, director of the Institute of Spatial Analysis and Planning (ISPA), the University of Vechta, Germany, who spoke at the recent International Egg Commission conference in London.

"After several years of moderate growth rates, biofuel production has begun to increase rapidly. This has resulted in an increasing demand for arable land on which corn and oil crops are cultivated for ethanol refineries and biodiesel plants," he said.

Windhorst added that the future biofuel production in the United States, the European Union, Brazil, China, India, and several other countries in Southeast Asia shows that the demand for arable land will further increase.

Dr. Hans-Wilhelm Windhorst

"This will lead to higher feed costs for the livestock and poultry industries, but also to higher food costs," he said.

Positive impacts of this trend are that it would:

➤ Reduce the dependence of industrialized countries on oil imports,

➤ Contribute to the protection of the environment and reduce the risk of continuous global warming,

➤ Initiate the development and use of advanced technologies such as "biomass to liquid" or "flexible fuel vehicles",

➤ Offer new income possibilities for farmers, and

➤ Create new jobs in the supply industry.

But among the negative impacts, more biofuel production would:

➤ Reduce the available land for food grains and feed production,

➤ Lead to a considerable increase in feed costs for animal production,

➤ Lead to higher food costs,

➤ Initiate a "fight for arable land" which would eventually result in serious land use conflicts in areas with intensive animal production, and

➤ Reduce the area of tropical rain forests and cause ecological problems because of large monocultures.

Bioenergy Production Will Accelerate

Political instability in the Near East, one of the main oil exporting regions of the world, and the fear that oil might be used as a political weapon, as well as the threat of continuous global warming, will further accelerate global bioenergy production, he said.

The projected increase of global ethanol production from 2005 to 2015 will more than double the demand for arable land required for corn, sorghum and other grains in the United States and almost triple the demand in EU member states.

In addition, the demand for arable land needed for biodiesel production would increase by 314% between 2005 and 2010, with the largest increase projected for the EU followed by Malaysia and the United States. In Brazil, the sugar cane area would have to expand by 39% to meet forecast production increases.

After two decades of moderate growth, U.S. ethanol production has expanded quickly since 2000. In 2007, ethanol refineries will use almost one quarter of the corn harvest.

Since 2005 on, similar development

has occurred in biodiesel production, although the demand for arable land is still much lower.

Far Reaching Impacts

"The Energy Policy Act of 2005 will have far reaching impacts on the development of biofuel production in the United States," Windhorst said.

According to this law, production will have to be increased from 15.1 billion liters in 2006 to 28.4 billion in 2012. However, in his State of the Union Address, President Bush set a new target of 132 billion liters for 2017, in order to reduce the dependence on fossil fuel imports. Such a dramatic increase in the production of biofuels will result in drastic increases in the production costs for meat, eggs and other foods," he added.

The projected increase of global ethanol production from 2005 to 2015 will more than double the demand for arable land required for corn, sorghum and other grains in the United States and almost triple the demand in EU member states.

In the EU, biodiesel is still dominating biofuel. In 2005, about 1.2% of total fuel consumption came from biofuels. By 2010 the EU wants to push this figure to 5.75%, by which time, around 7-8% of the arable land in the EU (of 27 countries) would be needed to produce the required corn and oil crops. There is a new target of 20% by 2020, which would require 26-27% of all the arable land. "Such a target is not realistic and could only be reached by using new materials (straw or ligno-cellulose) or new techniques (biomass to liquid)," Windhorst said.

Co-products from biofuel production, such as corn gluten feed and dried distillers grain with solubles from ethanol refineries, and oil crop expellers from biodiesel plants, could be used in the poultry and other livestock industries.

The expected increase in biodiesel production would make more oil crop expellers available, rape and sunflower expellers in Europe, palm oil expellers in Indonesia and Malaysia and soybean expellers in the United States.

"These products can be used in the poultry industry and may, at least, partly compensate for the foreseeable increase in feed costs," he said.

"We will have to decide whether we want to buy the crops produced on our land, in a supermarket or at a filling station, for the land, at least under the climatic conditions of the mid-latitudes, can only be used once," Windhorst said. **EI**

New Technology Promoted Efficiency, Quality at Convention

By Dr. Simon M. Shane

Leading scientists presented updates on research relating to quality, efficiency and food safety at the 2007 Midwest Poultry Federation Convention. This annual event in St. Paul, Minn., provides a forum for the industry to review innovative concepts with an emphasis on commercial application.

Reducing Ammonia Emissions

Dr. Hongwei Xin of Iowa State University reported on both laboratory studies and field evaluation of emissions on farms in the Midwest. Depending on house design, ventilation rate, depth and age of manure, ammonia production can range from 0.01 to over 1 g/hen/day. Studies have shown that belt manure batteries produce only one-tenth the level of ammonia generated in a deep-pit house of similar capacity. Supplementation of diets with gypsum reduces ammonia emissions by up to 40%. Formulating diets to satisfy critical amino acid content and reducing crude protein lowers release of ammonia.

Sanitation of Water Lines

Dr. Susan Watkins of the University of Arkansas is a proponent of chlorinating water supplied to flocks at a level of 2 to 4 ppm to suppress potentially pathogenic bacteria. During the interflock interval, water lines should be cleared of mineral deposits using citric acid followed by decontamination with a hydrogen peroxide solution.

Molting Programs

Dr. Kevin Roberson of Michael Foods described the latest molting program used by his company. Successful programs require integration of the principles of nutrition with the control of feed intake and management of lighting and house temperature. Flocks are conditioned for molting for a 10-day period using a diet of relatively low energy density, achieved by the addition of wheat middlings and soy hulls.

Addition of zinc sulphate (2,500 ppm) and withdrawing salt from a diet comprising wheat middlings, corn and soybean hulls, together with reducing day-length to 8 hours results in virtual cessation of production within three days of initiating molt. Restricting feed intake to 12 lbs. per 100 hens per day achieves a 20% weight loss over 14 days.

The second molt diet fed from 14 to 21 days comprises corn, wheat middlings and soybean hulls supplemented with limestone, synthetic amino acids, and fat.

During the seven-day post-molt period, light is increased to 12 hours a day and intake of an enriched diet is increased to 20 lbs. per 100 hens per day.

FDA Involvement in Prevention of SE

Dr. Gerardo Ramirez of the Federal Drug Administration outlined monitoring requirements for SE, which have been circulated in the agency's Proposed Rule. Many of the provisions follow the requirements of state EQAPs with regard to sourcing chicks from an NPIP hatchery, maintaining biosecurity and pest control programs and ensuring refrigeration from the time of packing through to delivery. The additional requirement relates to sampling the environment of flocks between 40 and 45 weeks of age. A second test is required 20 weeks after onset of production during the second cycle.

If SE is detected, four consecutive tests of samples of 1,000 eggs are mandated at two-week intervals to confirm that a flock is free of SE. In the event that the flock is SE-positive, eggs must be diverted to breaking and pasteurization or some other process such as immersion or microwave heating, which can result in a five-log reduction in SE.

Bacterial Levels in Processing Plants

Dr. Deana Jones of the USDA-ARS Egg Safety and Quality Research Unit, Russell Research Center, reviewed surveys conducted in processing plants in the Southeast. There are evidently deficiencies in decontamination since pre- and post-production samples were similar with respect to levels of *Enterobacteriacae* which include *Salmonella, E. coli* and related Gram-negative bacteria.

High levels of contamination were noted on floors, pre-wash belts and vacuum loaders. The packer head brushes represent a significant source of contamination since bacteria are transferred to previously washed shells.

A disturbing finding was the high level of *Listeria* in in-line, off-line and mixed plants. However, only one of the numerous isolates was actually identified as *Listeria monocytogenes* for which there is a zero tolerance as it is a potential pathogen to consumers. The findings in this study may result in a higher level of oversight by FDA. **EI**

Cage-Free Production Was Focus at Midwest Trade Show

By Dr. Simon M. Shane

Increased demand for eggs from non-caged flocks represented the principal focus of equipment, exhibitors, and producers at the 2007 Midwest Poultry Federation Trade Show in St. Paul, Minn.

Non-confined production requires one of four options:

➤ Erection of new housing with litter and slatted areas, feeding, and drinking installations and communal mechanical nests.

➤ Erecting a new house equipped with an aviary system incorporating multi-tier perches, feeding systems and communal mechanical nests for egg collection.

➤ Removal of obsolete cages from existing housing with installation of either a floor or an aviary system.

➤ Conversion of obsolete broiler breeder facilities, which remains a popular option in the Southeast and Mid-Atlantic regions.

Capital, Labor

Considerations in selecting among the alternatives relate to availability of capital for either a new house or modifying an existing structure, availability of labor and above all, access to a market. Many small-scale producers contract their production to a plant packing branded eggs off-line. This allows the producer to concentrate on efficient flock management and to optimize quality which is important in the context of specialty products. Most of the components for floor-housing of flocks are based on European designs, since demand for cage-free eggs preceded the development of the U.S. market.

A review of products displayed at the show demonstrated similarity in basic design of aviary systems, communal nests and feeders as offered by the major manufacturers.

Nest systems are available in single or two-tier configuration and have either front or central roll-away collection onto belts. Nests are usually equipped with expellers activated by time clocks to prevent roosting and broodiness. Nest floors incorporate pads or have a perforated plastic liner which prevent soiling of eggs and are designed for ease in assembly and decontamination.

Modern floor systems incorporate either chain or auger distribution of feed in troughs and nipple drinkers. Systems are available for either accumulation of manure in storage pits or require regular removal on belts.

Floor-Reared Pullets

Expansion of non-confined egg production has created a demand for floor-reared pullets conforming to both conventional and organic systems. In some areas of the country, demand exceeds the supply of pullets, resulting in the need to transport flocks over long distances. This imposes additional stress and requires compatibility between vaccination programs and the strains of pathogens to which mature flocks are exposed. Problems that are encountered in newly transferred flocks include coccidiosis, worm infestation, histomoniasis, variant strains of infectious bronchitis, mycoplasmosis and *E. coli* septicemia-peritonitis complex.

Organic production including the use of the USDA logo is constrained by clearly-defined regulations. Unfortunately, there is no official label for cage-free eggs. This has resulted in considerable confusion among consumers with product descriptions including "free roaming," "non-confined," "natural" and variations using the term "free." Validating the origin of eggs will become important as the market expands. The recent revelations in the United Kingdom of imported eggs from caged flocks being misbranded have adversely impacted consumer confidence in that country. EI

Salmonella Incidence in Layer Feces Higher in Younger Hens

Most laying operations are in high-rise poultry houses. Manure from these houses generally is removed during molting or at the time flocks are changed. Manure is used primarily for fertilizer and is spread on fields. If contaminated with *Salmonella*, the manure can contaminate ground and surface waters.

Li *et al.*, 2007 (*Poultry Science* 86:591-597) investigated *Salmonella* populations and incidence in laying feces as affected by age of hen and molting. They also serotyped *Salmonella* isolates and looked at antibiotic resistance.

The investigation was conducted in 12 houses each containing approximately 77,000 White Leghorn hens. *Salmonella* samples were collected at 18, 25 to 28, 66 to 74 and 75 to 78 weeks of age across each of the six rows in each house. At each of these ages, *Salmonella* populations and serotyping were determined.

Salmonella populations at all ages were not significantly different with an average of log 1.21 MPN (most probable number) per g. The 18-week-old laying hens had the highest incidence of *Salmonella* (55.6%) followed by 25- to 28-week birds (41.7%), and 75- to 78-week birds (16.7%). *Salmonella* incidence was lowest from molted hens (5.5%). The birds in these flocks were forced-molted using a low-protein diet rather than fasting. These results indicated that this forced molting program did not increase *Salmonella* shedding problems. Other non-fasting diets also have shown similar results.

The major *Salmonella* serotypes identified in the fecal samples included *Salmonella Kentucky* (62% of isolates), *S. montevideo* (11%), *S. typhimurium* (4%), and *S. senftenberg* (2%). As pointed out by these authors, *S. Kentucky* is not among the most common serovars found from human sources. It is interesting that *S. enteritidis* was not isolated. These authors indicated that previous work has noted that *Salmonella* serovars isolated from poultry may be different than that reported from human sources (USDA report January, 1999).

Antibiotic Resistance

Thirty-five percent of the *Salmonella* isolates were reported to be resistant to at least one antibiotic. Egg producers sometimes utilize antibiotics to treat certain diseases. However, egg producers do not routinely add antibiotics to their rations. There is continuing concern about increased bacterial resistant antibiotics.

This research provides a better understanding of *Salmonella* contamination in layer fecal material. Further studies looking at a cross-section of several high-rise production units from several producers would be of interest. With the recent outbreak of *Salmonella* in spinach, this data are of particular interest since manure is often spread on fields. Controlling *Salmonella* in fecal contamination is a challenge since the contamination can come from several sources (e.g., air, feed, rodents, flies, etc.).

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INDUSTRY CALENDAR

June

6–8: National Safety Conference For The Poultry Industry

Savannah Marriott Riverfront Hotel, Savannah, Georgia. Contact: Kristi Spivey, Food Processing Technology Division, Georgia Tech Research Institute. Tel: 404-894-3412. E-mail: kristi.spivey@gtri.gatech.edu.

20-22: NC/VA Egg Industry Conference and Mid-Atlantic Layer Management Workshop

St. Simons Island, Georgia. Contact: Kenneth Anderson. Tel: 919.515.5527. E-mail: ken_anderson@ncsu.edu.

July

8–12: PSA • ADSA • AMPA • ASAS Joint Annual Meeting

San Antonio, Texas. Contact: Poultry Science Association, 1111 North Dunlap Avenue, Savoy, Illinois 61874. Tel: 217-356-5285. Fax: 217-398-4119. Website: www.poultryscience.org or www.adsa.org.

October

3-4: National Chicken Council Annual Conference

JW Marriott Hotel, Washington, D.C. Contact: National Chicken Council, 1015 15th Street, NW, Ste. 930, Washington, D.C. 20005-2622. Tel: 202-296-2622. Fax: 202-293-4005. E-mail: ncc@chickenusa.org. Website: www.nationalchickencouncil.org.

2008

January

23–25: International Poultry Exposition 2008

Georgia World Congress Center, Atlanta, Georgia. Contact: US Poultry & Egg Association, 1530 Cooledge Road, Tucker, Georgia 30084-7804. Tel: 770-493-9401. Fax: 770-493-9257. E-mail: expogeneralinfo@poultryegg.org. Website: www.poultryegg.org.

March

18–20: Midwest Poultry Federation Convention 2008

St. Paul, Minnesota. Contact: Midwest Poultry Federation, 108 Marty Drive, Buffalo, Minnesota 55313. Tel: 763-682-2171. Fax: 763-682-5546. E-mail: lara@midwestpoultry.com. Website: www.midwestpoultry.com.

2009

January

28–30: International Poultry Exposition 2009

Georgia World Congress Center, Atlanta, Georgia. Contact: US Poultry & Egg Association, 1530 Cooledge Road, Tucker, Georgia 30084-7804. Tel: 770-493-9401. Fax: 770-493-9257. E-mail: expogeneralinfo@poultryegg.org. Website: www.poultryegg.org.

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