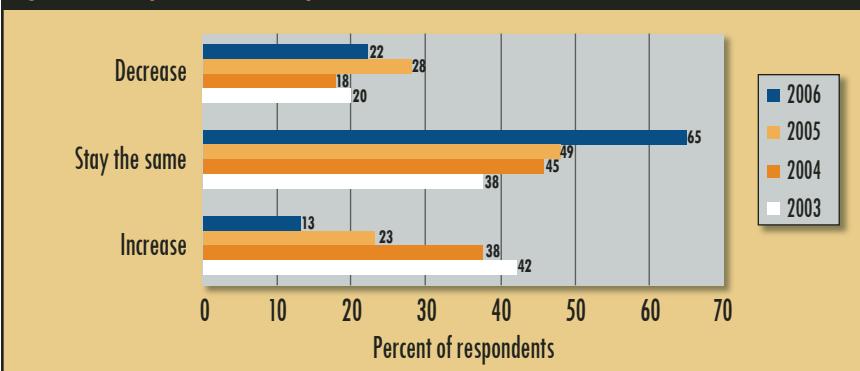


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## What 2007 Has in Store: No Shortage of Challenges and Opportunities

Figure 1. Survey: In 2007 will layer numbers?



By John Todd

The New Year of 2006 was ushered in again with low egg prices and predictions that said they were going to remain this way all year. The various committees of the United Egg Producers (UEP) and the American Egg Board (AEB) addressed the issue continually, asking producers to cut back with production and hatching of new production.

The UEP's Nov. 17 *United Voices*, however, told the good news story that a major export order had been obtained

and approved by the Board of Directors of the U.S. Egg Marketers, and this changed the complexion of the market in a matter of days. When producers started to fill the order of 90 container loads of eggs, prices went from 74 cents to over \$1.05 per dozen and the entire industry got a big smile on its face.

As an example of the change that took place, a producer with 1 million layers enjoyed an \$18,000 per day raise by Nov. 15 over the same number of birds on Oct. 20. Put another way, shell egg producers realized a \$44,000,000 pay

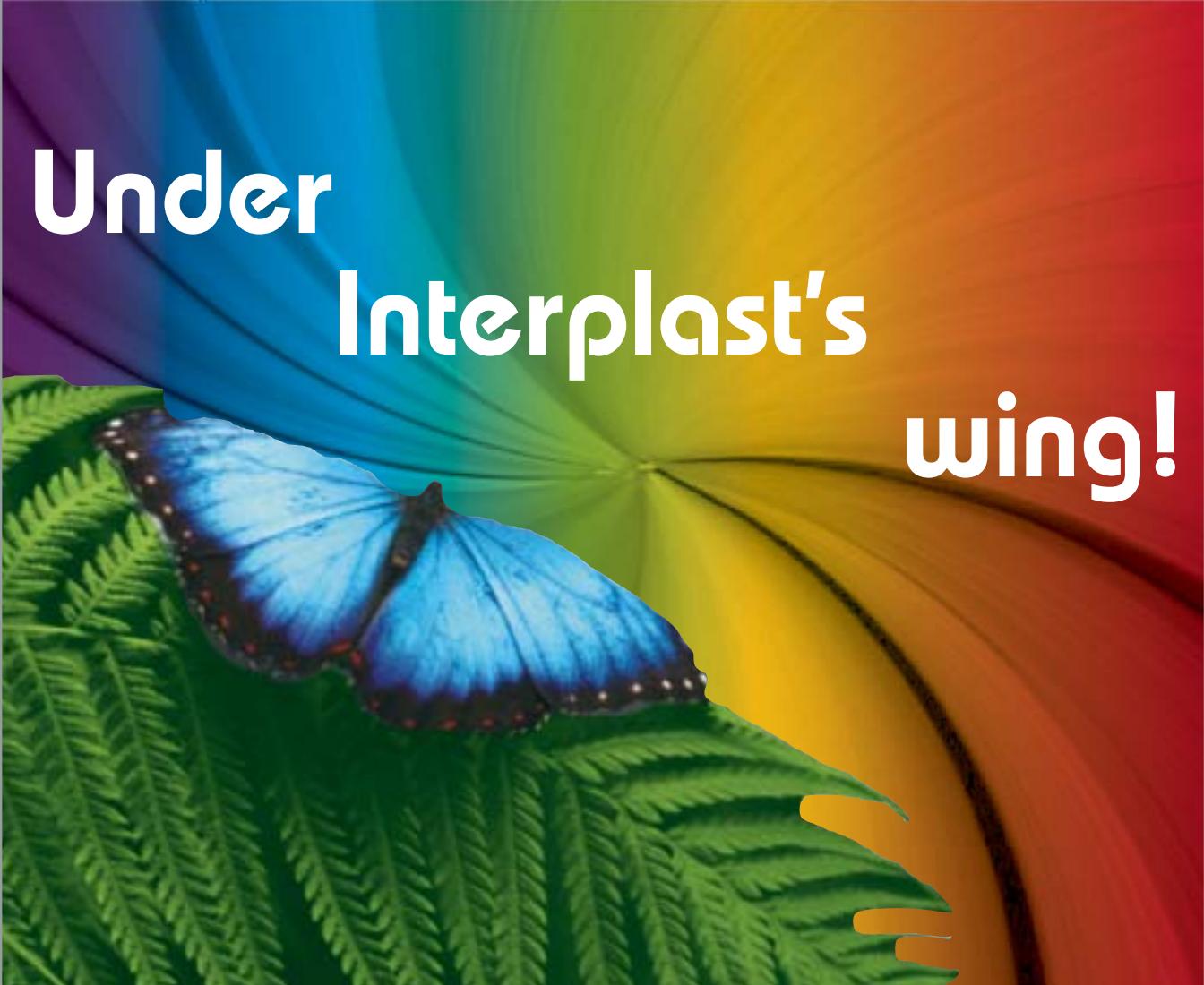
### Producers Optimistic about 2007 Prices

Producers are optimistic that egg prices will improve in 2007, according to *Egg Industry's* annual survey of the nation's egg producers. Fifty-six percent of respondents said they believe prices will improve, 38% expect prices will remain the same, with only 7% expecting weaker prices in 2007 (only 2% said liquid eggs and processed egg prices would be lower in 2007).

On expansion, 65% said they expect layer numbers to remain the same, with 22% looking for numbers to actually be lower, while only 13% said they believe layer numbers will increase this year.

Over the past 12 months, 10% of respondents said they have expanded production through new construction, with 2% saying they have done so through the acquisition of operations.

The survey also asked participants to rank issues of importance on a scale of 1 to 5. Overproduction (too many birds) topped the list of egg producer concerns, and has become a growing concern in recent years (Figure 5) followed in order by environmental issues, price discovery issues, bird welfare, and with capital availability being the least important issue listed by egg producers.

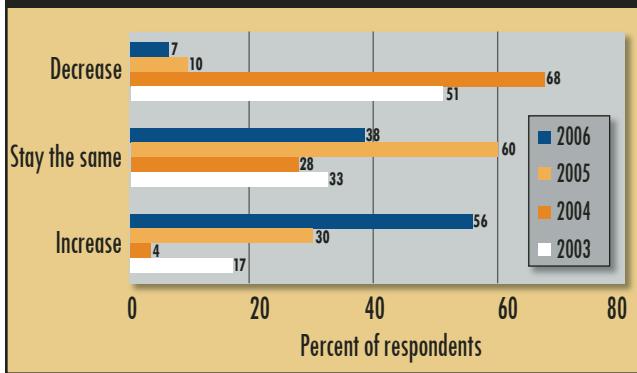


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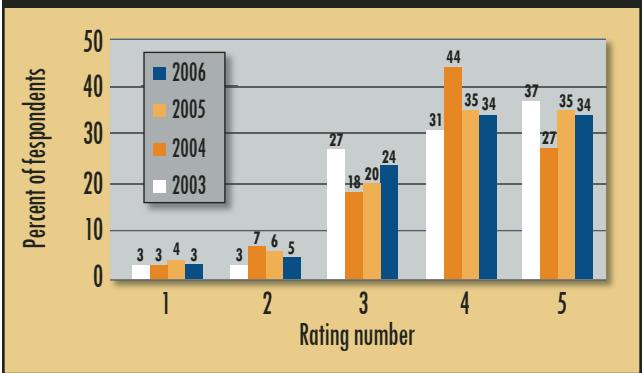
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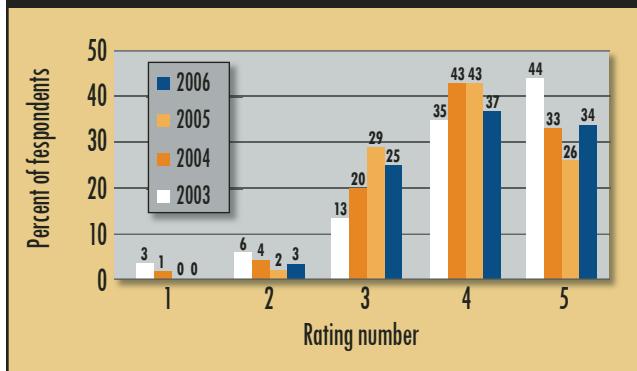
**Figure 2. Survey: In 2007 will shell egg prices?**



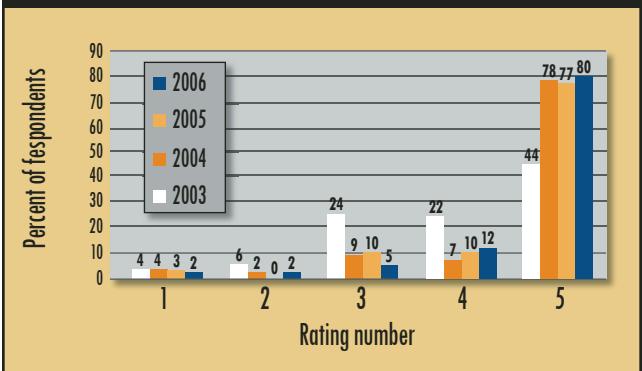
**Figure 3. Survey: Rank the impact of Bird Welfare**



**Figure 4. Survey: Rank the impact of Environmental Issues**



**Figure 5. Survey: Rank the impact of Too Many Birds**



hike. The entire industry, including those selling eggs to breakers, benefited from the timely export order. Excellent prices were holding through November and should do well into 2007. According to a memo from Don Bell, University of California-Riverside, the sudden spike in egg prices tended to offset the bad losses of the first three quarters of the year and could, in fact, reduce the losses to 2 to 3 cents per dozen for the year. Bell estimates the good times should continue into 2007 and hopefully, keep the year in the black.

**News Not so Good on Costs**

On the cost side, however, there could

be a real increase in the cost of feed as the New Year progresses due to the increase of corn used for the rapidly growing ethanol industry. Unfortunately, if there is a sizable cost increase in feed due to the corn situation, any predicted increased egg price could be wiped out.

Two other factors could also become part of the equation. First, egg consumption in this country is not going up as in the immediate past. This obviously needs to be kept in mind and considered during the planning process. Second concerns the breaking end of the business. As reported in the Bell memo, egg breakers have leveled off and only processed the same numbers

in 2006 as in 2005. Challenges and opportunities again are there for 2007.

While a big export order for shell eggs created a wonderful price increase towards the end of 2006, other export efforts continued through USDA Poultry & Egg Export Council (USAPEEC). The egg section of USAPEEC is funded by producers through the American Egg Board. Although shell egg sales by USAPEEC remain about the same as in prior years, the growth is in egg products sales to foreign countries. The organization has been very active in the promotion of both shell eggs and egg products from the U.S. and it is proving successful. Promotional activities

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## Top Company Ratings (Million layers in production on 12/31/2006)

Company Name	City	State	Layers
Cal-Maine Foods, Inc.	Jackson	MS	22,836,000
Rose Acres	Seymour	IN	20,500,000
Moark, LLC	Carthage	MO	14,200,000
Michael Foods Egg Prod.	Minneapolis	MN	14,000,000
Sparboe Summit Farms Inc.	Litchfield	MN	12,500,000
Decoster Egg Farms	Turner	ME	10,500,000
Golden Oval Eggs	Renville	MN	7,400,000
Ohio Fresh Eggs	Croton	OH	7,000,000
ISE America DBA	Lamar	SC	6,931,000
Dutchland Farms LP	Lancaster	PA	6,900,000
Daybreak Foods	Lake Mills	WI	6,800,000
Fort Recovery Equity	Ft. Recovery	OH	6,800,000
Midwest Poultry Services, L.P.	Mentone	IN	6,100,000
Fremont Farms of IA	Malcolm	IA	5,200,000
Rembrandt Enterprises	Rembrandt	IA	5,000,000
National Food Co.	Everett	WA	4,000,000
Wabash Valley Produce	Dubois	IN	3,800,000
Herbruck Poultry Ranch	Saranac	MI	3,700,000
Tampa Farm Service Inc.	Dover	FL	3,600,000
Hillandale Farms of PA	North Versailles	PA	3,500,000
Maxim Egg Farm	Boling	TX	3,500,000
Sunrise Farms, Inc.	Harris	IA	3,500,000
Mahard Egg Farm	Prosper	TX	3,373,781
Creighton Brothers LLC	Atwood	IN	3,150,000
Ebshade Farms	Mt. Joy	PA	3,000,000
Kreider Poultry Farm	Manheim	PA	3,000,000
Valley Fresh Foods Inc.	Turlock	CA	3,000,000
Weaver Bros.	Versailles	OH	3,000,000
Crystal Farms Inc.	Chestnut Mtn.	GA	2,700,000
Hickman's Egg Ranch	Buckeye	AZ	2,400,000
Daylay Egg Farm, Inc.	West Mansfield	OH	2,312,000
Gemperle Ent. & Nulaid Foods	Turlock	CA	2,200,000
Zephyr Egg Co.	Zephyr Hills	FL	2,200,000
Center Fresh Egg Farm	Sioux Center	IA	2,050,000
Demler Enterprises	Wasco	CA	2,000,000
Hamilton Farm Bureau	Hamilton	MI	2,000,000
Pilgrim's Pride Corp	Dallas	TX	2,000,000
R.W. Sauder	Lititz	PA	2,000,000
Willamette Egg Farms	Canby	OR	2,000,000
S & R Egg Farms, Inc.	Whitewater	WI	1,900,000
Braswell Milling	Nashville	NC	1,750,000
J.S. West Milling Co.	Modesto	CA	1,675,000
United Egg Marketing Corp.	Blackshear	GA	1,650,000
Dixie Egg Co.	Jacksonville	FL	1,600,000
Mountain Hollow Farms	Watertown	MA	1,600,000
Sunrise Acres	Hudsonville	MI	1,500,000
Hemmelgarn & Sons	Coldwater	OH	1,500,000
Cooper Farms	Ft. Recovery	OH	1,500,000
Berne Hi-Way Hatchery	Berne	IN	1,400,000
Konos, Inc.	Martin	MI	1,400,000
Delta Egg Farm	Delta	UT	1,345,000
Dorothy Egg Farm	Winthrop	ME	1,300,000
Wilcox Farms, Inc.	Roy	WA	1,200,000
IVA, Inc.	West Union	IA	1,125,000
Creekwood Farm	Lake Mills	WI	1,100,000
Morning Fresh Farms	Platteville	CO	1,100,000
Pearl Valley Eggs, Inc.	Pearl Valley	IL	1,100,000
Pine Hill Egg Ranch	Ramona	CA	1,100,000
Ritewood Egg Farms	Franklin	ID	1,070,000
We-Three-Eggs LLC	Sibley	IA	1,030,000
George's Inc.	Springdale	AR	1,000,000
Feather Crest Farms	Dallas	TX	1,000,000
Sunrise Farms LLC	Petaluma	CA	1,000,000
<b>Total</b>			<b>252,597,781</b>

## What 2007 Has in Store: No Shortages of Challenges and Opportunities |

include seminars, workshops, advertising, and food related trade shows.

### Avian Influenza

Egg producers continue to be alert to the challenge of Avian Influenza that has hit hard in some Asian markets and has even been fatal to a number of people. Since the news was announced in foreign places, the American egg industry has taken steps to prevent, warn, anticipate an outbreak and make plans should a disaster hit in the U.S.

Unlike the Asian poultry raising practices, the U.S. industry can certainly control the bio-security of farms in a much better way using enclosed housing and basic policing of the facilities from outside influences. In Asia and other areas overseas, birds are much closer to the environments and are susceptible to wild bird contact.

A very proactive plan has been established by the Egg Safety Center to establish rules and regulations pertaining to this issue. In addition, the egg industry is working with other poultry industries to attack this potential problem. The industry also is working on communication and advertising programs to inform the public should a need arise. Recently, the USDA published a ruling which, among other positive parts, provided for a 100% indemnification to producers should an outbreak occur. All producers are encouraged to participate in the control programs.

### Animal Welfare

Perhaps the most complicated and potentially dangerous challenge for the industry remains the animal welfare issue. This has been reported on over the years and has caused great changes in the past and will continue to affect everyone associated with animal agriculture. It is almost inconceivable to think that there are groups of individuals that want to discontinue any form of animal use in agriculture. Some groups want meat, milk products and of course, eggs eliminated from the American diet.

### Groups Well Funded

The groups behind the movement are very well funded. One recent example is the banning of the use of sow

gestation in the hog business through voter referendum that recently passed in Arizona. This was passed in Florida, which virtually stopped the hog business in that state.

The elimination of cages for layers is part of the agenda of some groups for the future. Through their vast resources, the animal rights activists have changed the European industry greatly and are proceeding to try it here. Through AEB and UEP, the U.S. industry is fighting this battle with public relations efforts, advertising and scientific committees working on educating the public of the advantages of producing eggs the way it currently is being done. Scientific guidelines have been established to create better conditions for the birds to help alleviate the pressure from activists.

### Specialty Eggs Continue to Grow

As the industry goes into a new year, a new set of opportunities bears some discussion. For many reasons, including pressure to change the basic raising of poultry, trends in egg marketing have also been changing. The sale of specialty eggs is becoming a growing factor. According to a report from Gill Dedrick, President of the Broiler and Egg Association of Minnesota, organic and cage free suppliers are finding they are in short supply and growers are sending them greater distances just to satisfy the market. It is expected these shortages will last for six months or more while the industry gears up production for these type eggs.

Recent trends point to the growth in organic and natural food items in the store. Specialty eggs are priced between \$1.50 and \$3/dozen more than conventional white eggs. According to the Bell memo, it is believed that more and more production will be placed in the alternative systems with the hope of capturing more profits. One egg company's ad in a newspaper, for example, claimed that "Our Eggs Contain: No Hormones, No Carbohydrates, No Antibiotics, No Animal Byproducts". Specialty eggs include: vegetarian, cage-free, Omega 3, all-natural and organic. Another ad shows a child sampling cookie dough using eggs pasteurized in the shell. Although the total percentage of eggs sold as "specialty" remains relatively low, the climate is there to see this trend increasing and becoming a major factor in the marketing of shell eggs.

### Changes at UEP

In November it was announced that Al Pope, President of the United Egg Producers, will be retiring. Al has led UEP for over 30 years through many trying years of challenges and opportunities. Through his guidance, UEP has faced, just to mention two, the threats of animal welfare activists and also the environmental concerns of the industry. Much headway has been made using the scientific approach to these issues. Al has also been very active with the International

Egg Commission and has carried many of the positive results from the U.S. industry to foreign producers. Many of the initiatives instituted by UEP and AEB have been used to great success overseas and the U.S. industry has been thanked for these contributions.

Thanks and congratulations to both Al Pope and to Lou Raffel, the retiring president of the United Egg Board, for a wonderful job well done. The insights and wisdom from these two icons in the U.S. egg industry will be sought after and used in the years to come. **EI**



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## ▶ Gregory Is New President of UEP

Gene Gregory, vice president of the Atlanta-based United Egg Producers, will become the organization's president Feb. 2, 2007. Gregory, who has been with UEP for 14 years, will replace Al Pope, who has been with UEP for 32 years, and "has played a key role in the development of the egg industry in the United States," says Cal-Maine President Dolph Baker, Chair of UEP's board of directors. The unanimous vote for Gregory indicates the board's full support of his commitment to UEP and the egg industry, Baker says.

## ▶ U.K. Producers Upset Over Imports

United Kingdom free-range egg producers are upset over the increasing importation of French free-range eggs by U.K. supermarkets. "French free-range eggs have an entirely different production criteria—stocking density is three times that permitted in the U.K.," says Birchgrove owner Tony Burgess.

"It's annoying and frustrating as supermarkets have good egg producers on their doorsteps. Yet the average supermarket egg will have traveled 1,000 miles because of the distribution system," he says in the *Liverpool Daily Post*.

The British Free-Range Association's John Widdowson blames low supermarket prices that leave no margin for fresh investment for the shortfall in U.K. free-range production. "I've never known members to be so angry in the 16 years I've been doing this job," he says in the article.

## ▶ Cool-Water Wash Prevents Microbial Contamination

Using cooler water to wash shell eggs during a second washing reduces the potential of foodborne pathogen growth both inside the eggs and on the eggshell surface, according to scientists at USDA's Agricultural Research Service.

In their study ARS researchers tested three water-temperature schemes in commercial dual washer systems: water at 120 F. for both washers; water at 120 F. for the first wash and 75 F. for the second; and both washers at 75 F. They found that using a warm temperature in the first washer, followed by a cool temperature in the second one could provide the greatest benefit in terms of both reduced egg temperature and acceptable microbial levels.

While *Salmonella*, *Campylobacter* and *Listeria* were all detected in shell emulsion and wash-water samples from cool-water treatments, none were detected in the egg contents throughout the storage period of eight weeks.

## ▶ L.A.'s "Egg Ranch" Destroyed by Fire

What was formerly the world's largest egg ranch, Ventura County's Egg City, was destroyed by fire in early December. "Egg kingpin Julius Goldman founded the world's largest egg ranch here in Southern California, ruffling a few feathers along the way," says an article in the *Los Angeles Times*.

At its peak in the 1970s and '80s, Egg City produced 2 million eggs per day, with an operation of 3.5 million hens. In early December, the Shekell fire near Moorpark ravaged 13,600 acres, destroy-

ing five houses as well as the egg facility, which has been abandoned since 1996.

The article says that almost since it opened in 1961, the agricultural landmark had been imperiled by fires and Newcastle disease, rattled by high winds and earthquakes, and attacked literally by vandals and figuratively by lawyers.

Goldman was born in 1914 in Germany, where he studied to be a metallurgist. More than 20 years later, the Nazis shot and killed his Jewish father. Goldman escaped to Poland and later to Switzerland. The rest of his family perished in World War II concentration camps.

After the war, he and his wife, Mary, moved to the United States, settling on a friend's Van Nuys, Calif. egg farm in 1953.

After building one egg operation "with a \$5,000 bank loan, a piece of Van Nuys land and 3,000 chickens," he later moved to a rugged notch in the Santa Susana Mountains in 1961, and built Egg City, a 205-acre ranch where the mountain breezes could keep chickens cool in hot weather "and whisk away the smells."

Four miles north of Moorpark, off a former stagecoach road that is now California Highway 23, Goldman began scraping the tops and sides off the dry hillsides to make room for poultry coops, a veterinary staff, a research laboratory, and a computerized feed mill. Within seven years, he was known as the No. 1 egg man, a leader in the industry. The paper says he pioneered a fully integrated egg production and processing plant that became a benchmark for the world's egg industry.

In 1978, Egg City was sold to the Kroger Co., the Cincinnati-based grocery store chain, and changed hands several times after that. In 1986, the *Guinness Book of World Records* listed Egg City as the world's largest egg ranch. But that year the ranch began unraveling under high labor costs, and the owners filed for bankruptcy, *The Times* says. After a bitter court battle over control of the ranch, new owners downsized it in 1992, selling half of the layers, and focusing on products such as dried egg whites. For a few years, the ranch was leased by yet another company, which stopped operation in 1996. Goldman died of cancer in Sherman Oaks, Calif., in 1987. E



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Exhibit Hall B - Section B3

# **LUBING**

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# Competition to Egg Products Heats Up

By Terry Evans

Current technology is getting closer to developing egg alternatives that may compete with eggs, Dr. Thomas Herald, Kansas State University, said at the recent International Egg Commission annual conference in Guadalajara, Mexico. He added, however, that research needs to be conducted to determine what issues, if any, egg alternatives may face in full-scale processing.

Herald's conclusions are based on the findings of a study at the university on egg substitutes in selected food sys-



**Dr. Thomas Herald**

tems. While eggs have the advantages of being highly rated as a food ingredient, there are concerns that eggs might be the single most expensive ingredient in some instances. "If food processors are satisfied with the performance of an alternative which was cheaper, then they will use it," Herald said.

The goal of the research is to obtain a broad range of commercially advertised egg alternatives and compare their performance—physical and sensory properties to eggs in the selected food items, such as in mayonnaise, yellow cake, angel food cake, egg noodles, and French vanilla ice cream.

The control for mayonnaise was pasteurized liquid egg yolk while the competitors tested were wheat protein isolate, whey protein concentrates, modified corn starch and wheat protein concentrate plus fenugreek gum. The conclusion was that some of the egg alternatives evaluated were able to form oil/water emulsions that had similar physical, chemical and sensory properties as traditional mayonnaise made with egg yolk.

In cakes, 10 alternatives to dry whole egg were considered. However, no ingredient(s) exactly emulated all the properties of egg in yellow cakes and ingredients used in combination performed better than those tested individually. With regard to the angel food cake, whey protein isolate did not perform as well as the control in the physical attributes evaluation and the control (dried whole egg) significantly out-performed the angel food cake formulated with whey protein in all sensory categories. Furthermore, consumers indicated that they were willing to purchase the control two to one over the cake formulated with whey protein isolate.

Five alternatives to whole egg were considered for refrigerated pasta. Whole eggs exhibited a significantly lower cooking loss and were much firmer compared to the alternatives. Furthermore, whole eggs could not be totally replaced with any of the egg alternatives studied without loss of quality. In the ice cream study, the alternatives considered to whole eggs were 60% whey protein concentrates, modified corn starch, and soy protein. None of the alternatives consistently emulated or even equalled the overall performance of eggs. However, there was at least one egg alternative that was extremely competitive in a specific physical or sensory property.

## More Products Feature Eggs

From the 12 months ending August 2006, the number of food and beverage products utilizing eggs worldwide jumped by a massive 38% to 1,275 from 927 a year earlier, Steve Pintarelli, of *Stagnito's New Products Magazine*,



**Steve Pintarelli**

USA, told attendees to the Egg Processors International Session.

In terms of stock keeping units the number actually went up by 40% from 1,845 to 2,577.

Describing trends in U.S. eating habits, he said that many new products were designed to make life easier as consumers wanted eating to be faster and more fun. This has led to the development of grab-and-go items, in a cup, on a stick, in a tube or in a bag. There is a trend towards convenient/healthy meals presented in resealable packaging, often provided in individual portions offering more variety. "Meal replacement bars and fortified food beverages are in high demand," he added.

A University of Illinois study shows that comfort foods are popular, with women preferring snack-related items and men meal-related comfort foods.

He said some 66% of consumers claim to use organic products at least occasionally and the market value was predicted to reach \$30.7 billion by 2007.

## Processing Around the World

### ► European Union

Speakers gave a round-up of processing issues around the world. Ton van Dijk of the European Union said that although there had been some changes, little has changed in the EU egg market overall. The EU's population currently standing at 467 million, represents a huge consumer market.

Egg production has grown from 102 billion eggs in 2003 to 106 billion in 2005. The proportion of non-cage eggs is growing annually and represents about 22% of total output compared with 17% in 2003.

► ***The proportion of EU non-cage eggs is growing annually and represents 22% of total output compared with 17% in 2003.***

Annual egg consumption averages around 240/person.

The region's self-sufficiency rate had risen from 101% to 103%, so some 3% of eggs have to find a "home" outside the EU. Production of egg products has also expanded from 1.39 million tons in 2003, when it represented 22% of output, to 1.6mt last year and accounts for 25% of all table eggs.

Between 2000 and 2005 the EU enlargement from 15 to 25 countries boosted the population by some 20%. During this period, five processors disappeared as a result of mergers/takeovers or bankruptcy and there are now three major companies accounting for between 40-45% of the market. Nevertheless, there is still a large number of medium to small operations and some new companies had entered the market. But there was no dominant company, van Kijk said.

The period had seen considerable technical improvements as a result of better and more efficient machinery. However, this had led to cheaper products rather than better profits, he said. Product specifications had become more stringent over the period.

The big change was that there were fewer but larger food processors and

retailers and they continued to be the dominant players in the market. It is therefore still largely a buyers market with commodity-type products that were cost/price driven.

"Consequently, on a long-term basis, the egg processing market doesn't generate real shareholder value," he observed. "As a result, all the major egg processing companies in the EU are family-owned private companies with less capital resources when compared to publicly-owned companies with access to the stock exchange."

van Kijk said the market needed a leading supplier that could match the dominant buyers to bring back some

equality to the market. "This had happened in the dairy market and more recently in the red meat market, so why not in the egg market?" he asked.

### ► United States

"The U.S. egg product industry is currently in a state of over production, reflecting the situation on the shell side. But, despite this, new capacity is still being added," said Al Pope, president of the United Egg Producers.

Egg processors are putting in their own production facilities, he said. Shell egg producers have traditionally looked to the egg processors as their best customer for taking their surpluses. The industry was now in a transition period. These changes, which increased production and consolidation in the industry, will continue to put pressure on egg prices and profitability in the near future. However a number of companies that are selling added-value products have protected their ability to maintain profits.

Currently egg processors use one-third of U.S. shell egg production. According to the USDA, over 41% of the 68 million cases of eggs broken in 2005 were processed on in-line breaking facilities, while more recently, the depart-

ment has reported that more than 50% of the eggs going to processors were handled in this way. And most of these eggs were sold on a cost plus basis, which enabled the processors to offer their customers a consistent or longer-term price.

"This solves a huge problem for them as the shell market prices fluctuate so much, which makes it more difficult when trying to deal with customers on a long-term basis," he added. "This is a good decision for them as, with an in-line facility, the bacteria count is so low that they get very high quality eggs going into the plant which makes it easier to pasteurize, and there is no transportation cost," Pope continued.

Output of egg products rose by 6.2% in 2005 to 1.33 million tons. Exports of egg products climbed to almost 39,000 tons from just under 35,200 tons in 2004, while the estimate for 2006 was 41,000 tons. Japan, Canada, Mexico and Korea are the leading buyers of U.S. egg products.

### ► Asia

Although question marks can be put against much of the data that emerges from Asia, there is no question that this is by far the largest egg producing region of the world, accounting for 39 of the 59 million tons, said Morten Ernst. China is the biggest player with an annual output of between 25 and 27 metric tons.

Avian influenza continues to be the dominant scare word throughout the region, he said. "As only a couple of countries have escaped the virus, most egg users in the local food industries are showing an increased interest in importing safe egg products, while some local egg producers are flirting with the



Morten Ernst

## Competition to Egg Products Heats Up

idea of building their own egg plants to cash in on the scare,” he added.

Malaysia is a good example of this with four new liquid plants being built in the past few years aimed at supplying local food processors with a safe alternative. However, one had closed and the remaining three were fighting for the same few customers with the result that plant utilization was somewhere between 20-25%.

In China, there is great interest in setting up new plants, Ernst said, but their potential customers—Chinese food processors—are completely price oriented and not prepared to pay for the

yolks intact—often packed in a clear bottle. To produce whole egg yolks after pasteurization is not possible. So, the pasteurization process is often bypassed,” Ernst observed.

Thailand has only a couple of plants catering to the local industry, so the volume of imported egg products was larger than any other Asian country, except Japan.

There is no processing industry in Indonesia, Vietnam, the Philippines, and Pakistan.

Japan has some 70 factories, producing about 500,000 tons of liquid eggs a year.

tory Syndrome (SARS), regulations, food safety awareness and increased disposable incomes are just some of the factors that will increase the use of egg products in Asia,” Ernst concluded.

### ➤ MEXICO

Mexico is the largest consumer of eggs/person in the world, with the annual figure exceeding 340. The proportion of total output going to processors is about 10% and growing, said Cesar de Anda. The demand for egg products is increasing, although he admitted that the industry is still in its infancy compared with the leading egg products’ producing countries.

The egg processing industry only

## ➤ Value-added products will start to appear on Mexican retail shelves within the next couple of years.

added safety, convenience and hygiene which the new plants could offer. “In fact, some processors are mixing cheaper ingredients into their egg products in order to cut prices. With low margins domestically, they are looking to exports but many countries have banned Chinese poultry products, including eggs and egg products. The end result is that plant utilization may be as low as 40%,” he said.

In South Asia, it has been 10 years since the first egg products plant went into production in India. Soon after, several others were established. But they were all dependant on exporting their powders, with egg consumption in India so low. Several factories failed and today there are fewer than a handful of good plants in business.

The industry in Korea had expanded dramatically in the past few years and currently there were 13 factories with a combined daily breaking capacity of close on 400 tons of liquid eggs. “But, last year the actual output was less than 150 tons/day,” Ernst added.

Taiwan has seen a surge in new factories, mainly resulting from the government implementing regulations and given financial support to plants with pasteurization. “However, the government did not realize that the Taiwanese food industry prefers the

Interest in egg products is definitely growing in Asia and the bird flu issue was generally considered to be a problem that would not go away, hence governments are encouraging heat-treated egg products. “However, these governments must also look to protect their egg producers. Although egg product imports are small, they pose a threat,” he added.

Despite the World Trade Organisation’s lowering of import duties for greater access to markets, other protective barriers are appearing, such as, complicated import procedures and restrictions, quality requirements, and religious and certification demands that are a challenge to exporters. Most imported products into the region are in powder form generally going to internationally oriented and educated food processors. The mentality behind egg products being a popular ingredient in the developed world was not a factor in Asia—yet. He said that labor has been cheap, hygiene often of little concern, and convenience did not matter—price did.

Out of the 20kg of eggs the average Japanese eat each year, 10kg would be in product forms. “So there is hope that markets like Korea, Taiwan, Singapore and Hong Kong will follow suit in the future,” he added. “Education, food poisoning, bird flu, Severe Acute Respira-

really started to develop in the mid-1990s, he said, and now is focussing on producing value-added products. Even though it is difficult to find such items in liquid form in the supermarkets today, he forecasts that added-value products will start to appear on the shelves in the next couple of years.

“Exports are increasing annually, especially to Japan and European coun-



Cesar de Anda

tries. We now have free-trade agreements with more than 30 countries worldwide,” he said. The current emphasis is on producing high quality products to ensure that Mexico becomes a major player in the export business. Like their European counterparts, he said there was need to increase the value of Mexican processing companies. **EI**

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When J.W. Watt bought *Poultry Tribune*, "America's Leading Poultry Farm Magazine," in 1917, he started what became a big growth business. The publication's circulation grew fast from 25,000 in 1917 and peaked at 515,000 in 1940 – when farm consolidation and integration started changing poultry production.

While *Poultry Tribune* circulation grew, the company diversified. It launched *Hatchery Tribune* in 1927 and acquired *Turkey World* magazine in 1934. Those made WATT the world's largest poultry publisher.

The integrating industry of the 1950s was developing international interest, so in 1957 WATT acquired *Industria Avicola*, a Spanish language publication for the Latin American poultry industry. To reach more of the world, the company launched *Poultry International* in 1962.

In the past three decades the company expanded its portfolio into feed, pet food, pig, meat processing and woodworking industries.

Throughout the company's history, the egg industry has been a central part of its business.

And throughout its history, the company has been owned and operated by the Watt family: Founder J.W. Watt, Leslie Watt, James W. Watt and now Greg Watt.

This issue brings you part of our anniversary package. You'll find much more on our new website at [www.wattpoultry.com](http://www.wattpoultry.com).

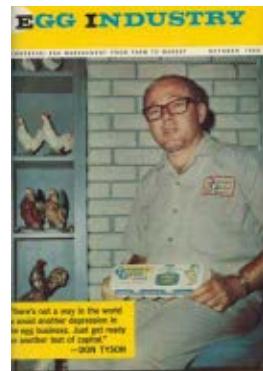
We hope you enjoy our look back and the views of the future in this issue of *Egg Industry*.

– The Egg Industry Staff

From Egg Industry, October 1968

## Egg Industry Interview with Don Tyson, 1968

Don Tyson of Tyson Foods was a big player in the egg business in 1968, even though he later chose to exit the business. Here's what he said to Egg Industry about the volatile business 36 years ago.



▶ "Two more tests of capital – 1969 and '71 or '72 – and we'll see a real grouping in the egg industry."

▶ "Forward pricing is a two-edged sword. When the market is low, you feel like a million dollars. When the price goes above the commitment, you feel like you lost a million."

▶ "I think the egg industry is in much worse shape than the broiler meat industry. I don't think there's a growing market for eggs. It's an item that is being substituted around."

▶ "...the place to price eggs is at the supermarket level backwards. The price should be what a given group of supermarkets is paying .... That's where our first money comes from."

▶ "There's not a way in the world to avoid another depression in the egg business. Just get ready for another test capital."  
– Don Tyson

Don Tyson, 38, is president of Tyson's Foods, Inc., Springdale, Ark., a publicly held, totally integrated poultry corporation with current annual sales of \$55 million. Approximately 10 per cent of that sales base comes from a commercial egg operation consisting of 1,100,000 company-owned layers.

Although relatively new in the egg business (1963), Tyson's Foods, Inc., has been able to apply to its egg operation much of the business acumen gained through its 30-plus years of broiler meat experiences.

The Tyson philosophy in the egg business is one of company ownership. Only eggs laid by Tyson birds go through the company's processing plants at Springdale, Ark., Oklahoma City, Okla., and Iola, Kans. No eggs are bought on the open market and none are sold that way.

The company has 10 farms (with flocks ranging from 70,000 to 160,000), its own breeding flock and raises its own started pullets. A pioneer in forward pricing

commitments with retailers on its broiler meat products, Tyson has employed the same marketing strategy in his egg operation.

As a publicly held company, Tyson's Foods, Inc., is under constant pressure to earn a higher rate of return on invested capital than many independent operators would consider necessary. However, the standards Tyson applies to his operation, he feels, should benefit all segments of the egg industry. It will take better-than-average profit performance, he believes, to survive in such a highly volatile business.

These standards include assets-to-liabilities ratio, debt/equity position and debt payment vs. depreciation schedule.

In essence, Tyson does not paint a pretty picture for the commercial egg business. He foresees another depression late in 1969 and still another (and longer one) in '71 or '72. He seriously doubts if many existing firms will be able to stand the test of capital they will be facing over the next three years. **EI**

From Poultry Tribune, August 1977

# Watt Acquires Egg Industry Magazine

**W**att Publishing Co., Mount Morris, Ill. and Garden State Publishing Co., Sea Isle City, N.J., are pleased to announce a merger of publication interests in the poultry industry which both believe will provide a new standard of excellence in presentation, service, and information to a mutual family of loyal readers and advertisers.

Effective with the August 1977 issue, *Egg Industry*, published by Garden State Publishing Co., will be merged with Watt's 83-year-old *Poultry Tribune*, and will continue to be published monthly as *Poultry Tribune*. Some of the features which have characterized the business management approach of *Egg Industry* will be incorporated into the editorial format of *Poultry Tribune*.

*Poultry Digest*, the GSP production technology journal for broiler, egg, and turkey industries, will continue as a sister publication, affording readers of both *Poultry Digest* and *Poultry Tribune* a deeper exposure to the production aspects of the egg industry. *Poultry Tribune*, as in the past, will continue to cover subjects which affect the management decisions concerned with profits in production, processing, further processing, distribution, marketing and merchandising eggs and egg products.

Included in the merger arrangement are *Broiler Industry*, a GSP publication, also *Feed Management*, which will become a sister publication of WPC's *Farm Supplier* and GSP's *Petfood Industry*.

*Broiler Business*, a Watt publication, will emerge in August with a new title and new function as *Poultry Processing & Marketing*. As with *Poultry Digest* on the production side, it will provide horizontal coverage of the turkey and broiler industries, devoted to the new poultry processing technology and sophisticated distribution system that is emerging so rapidly.

All advertising contracts and subscription fulfillments will be honored under the new arrangement from Mount Morris, Ill.

GSP's publications will continue to be printed by Garden State Publishing Co. at Sea Isle City, but published by Watt Publishing Co. There are no significant changes in the editorial staffs, except that GSP's executive vice president, William A. Haffert, Jr., will become editorial director of Watt's domestic poultry publications.

Horace J. Haffert, president of Garden State Publishing Co., will serve as associate publisher of the four surviving GSP publications that Watt Publishing Co. has acquired; Watt's Orvel Cockrel is publisher for the merged group of poultry publications.

This brings the family of poultry-related publications in the Watt organization to a total of nine: *Poultry International*,

*al*, *Industria Avicola*, *Poultry Tribune*, *Broiler Industry*, *Turkey World*, *Poultry Processing & Marketing*, *Poultry Digest*, *Who's Who in the Egg and Poultry Industries (U.S.A.)* and *Who's Who International*.

With an unparalleled collection of international poultry talents and resources, Watt Publishing Co. and Garden State Publishing Co. assure you of a measure of excellence and service never before available. We welcome and solicit your help in making our new "joint venture" the success we are sure it will become.

Leslie A. Watt  
President  
Watt Publishing Co.

Horace J. Haffert  
President  
Garden State Publishing Co.

*Editor's Note: Later in 1977, Egg Industry became the stand-alone publication that it is today.*

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From Poultry Tribune, December 1977

# The Germans are Coming (to Ohio)!

*Daylay Egg Farm, located in central Ohio outside the little town of Raymond, broke ground and started building in mid-September. Ultimate goal is one million hens. Because this is entirely foreign capital and will represent a large concentration of eggs, U.S. producers will be watching its progress – perhaps a bit nervously – to detect a trend of such foreign investment capital in-flow.*

**P**hilipp Zimmerer of Frankfurt, Germany, is the head man in the recent six-shareholder corporation set up to establish egg production in the U.S.; shareholders control some 2 million layers in Germany. Why not expand there? Why the United States? And why Ohio?

He likes free enterprise and competition, he says. “There are too many restrictions – government regulations, and oppressive tax structures, more heavily than here. I wanted to produce more freely as you can here in America. I looked at many areas and farms before selecting this one, and I like the grain-producing potential of the area.”

So this company earlier this year bought this 1,400-acre farm for a figure reportedly in the \$2 million-plus bracket, which he acknowledges is approximately correct.

Why so much acreage for an egg farm? Grain production. According to Zimmerer’s American general manager of Daylay Egg Farm operation, B. Hall Davis, grain will be grown on shares with the farm’s previous owners, the Wedding brothers. The Weddings have a cattle feeding operation through which they will put some of their grain and will feed high moisture poultry manure from Daylay.

In addition to his German egg hold-

ings, Zimmerer is a major principal in the Salmat Corp., a German poultry equipment manufacturer, and will use those cages in his Ohio egg operation.

Hall Davis may have hit on an additional reason when he noted, “Since Daylay will be the sole outlet for Salmat equipment in the U.S., we expect many visitors. We’d like to impress these visitors favorably with our equipment, and also demonstrate the fact that we can produce eggs as economically as anyone else.”

One obvious alternative to building his own egg plant would have been for Zimmerer to buy an existing unit. “We like to start new and incorporate our own ideas from the start. It is more costly to convert old units to these new ideas.”

## German Innovation

*Poultry Tribune* asked Davis: What is Zimmerer doing in Germany that might be considered innovative here? Davis, who had recently visited the German site, said: “It’s pretty standard so far as procedures are concerned, in-line collecting systems and other automation. But the thing that impressed me was their efficiency and sanitation measures. They do the job with much less labor than we ordinarily do. Their employees are dedicated to doing a good job. They watch those

little details and are very efficient. That’s what I’ve got to pay attention to here.”

Another difference in the German approach is a loose sort of integration composed of several groups. One will own the feed mill, another processing plant, etc. “It’s an overlapping thing,” as Davis describes it.

Shareholders’ eggs are sold through a marketing association which handles eggs from about 4.5 million layers from all over Germany. Philipp Zimmerer recognizes Ohio is an egg deficit state and would hope to concentrate egg sales among its many large population centers. However, neighboring Indiana is an egg exporting state.

How can these Ohio markets be captured except by cutting prices? “Cutting prices benefits no one. We don’t want to do that,” Zimmerer responds.

Hall Davis is examining an alternative; have an established, large-scale marketer handle some of their eggs, at least at the start.

“Price is one way to break in, but usually the present supplier can meet any price thrown at him. So I’ve got to talk the basics of quality and service, and I think we’ll produce eggs as efficiently as anyone. But at least until we get our feet on the ground and get acquainted with the needs of chain-store buyers

# MOBA

in this area, I'll probably market some of our eggs through firms specializing in that function. We've had two or three such concerns express an interest in going that route with us," Davis explains. In the U.S., Davis is the man to talk to about Daylay Egg Farm business. He has Zimmerer's power of attorney and the authority to carry out policy.

"They set the policy and I make the day-to-day operational decisions," he explains. "However, I'll check with them before making major decisions which deviate from that policy."

## The Future

What will Daylay look like in the future? Ultimately, that may depend on many things, but in the near future it will consist of four 65 x 340 ft. laying houses which will house a total of 384,000 birds. The first house was started in September. February-March, 1978 is planned for startup time, with day-old chicks to be placed in the same cages in which they will spend the rest of their days.

Work on the laying houses will overlap. That is, before one is completely finished, crews will be starting on the next. The last unit to be completed will be a 100 x 125 ft. egg processing plant.

The laying houses will be deep-pit type houses with the cages 7 ft. off the concrete floor.

"We'll have fans pulling air in through the comb of the building," Davis says, "and out each side across the droppings for drying effect and to cool the birds. To keep water out of the pit, we'll use a plastic trough under the nipple-drip system. We can't afford to have that manure get wet."

Davis hasn't decided on all of his equipment choices yet. He is looking at quality and price right now. Neither has a bird strain been finally selected.

In addition, the farm will have a feed mill with about 80,000 bushel grain storage capacity, and a grain dryer. With a constantly vigilant eye on total U.S. hen population figures as they affect supply-demand balance, many U.S. eggmen are nervously wondering whether the influx of foreign capital may become a trend in the egg business, thus jeopardizing that delicate balance.

According to Davis observations, "I've heard of other financial interests in poultry here. The rumor is not far enough along yet to comment further, but I expect to see some more."

Philipp Zimmerer puts it a little more cagily. "I don't think it indicates a trend at this time. However, if we can come over here and produce eggs profitably, it could become a trend."

Daylay Egg Farm's progress will be under sharp scrutiny from both sides of the Atlantic in the next several years. E

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From Poultry Tribune Centennial Edition,  
September 1995

# How the Early Egg Industry Developed

The early egg industry was located near populations centered in the North Central and North Atlantic states. From 1898 to 1930, Iowa, Missouri, Illinois and Ohio were always in the top five in egg production. Iowa continued in first place until it was replaced by California in 1959. Illinois stayed in the top 10 until 1970, and it dropped to less than 3 million layers in 1995. At that time, Pennsylvania, Ohio and Indiana were well-entrenched in the top 10. Iowa's construction of laying facilities indicated that Iowa could regain the number-one position.

## Top Egg Companies

Millions of layers in production

	2005	1995	1985
Cal-Maine Foods, Inc.	23.836	15.6	6.2
Rose Acre farms, Inc.	17.5	12.6	7.7
Moark LLC	14.2		
Michael Foods Egg Production	14.0	14.8	
Sparboe Companies	12.5		
Wright County Egg Production	9.0		
Ohio Fresh Eggs	8.0		
Golden Oval Eggs	7.4		
Fort Recovery Equity	7.064.408	6.8	
ISE America	6.931,000	6	
Papetti Hygrade Eggs		5.1	
Mahard Egg Farms		4.2	
Hillandale Farms		4	
Sunny Fresh Foods			12
Seaboard Foods, Inc.			7.2
Milton G. Waldbaum Co.			5.2
Croton Egg Farms			5
Decoster Egg Farms		9	4.1
Midwest Poultry Services		4.1	3.65
Agri-General Corp.		5.6	3.5
Wabash Valley Produce		4.1	3.5

Promotion of contract egg production and an excellent transportation of feed-stuffs for broiler production caused a shift of egg production to the Southwest during the '60s. Total eggs in the South exceeded the Central states. Layer numbers in the South Atlantic region were 64 million, 48 million in the Pacific region, and 44 million in the East Central region.

Egg production became seriously in surplus in California and the Southeast. Eggs had to be hauled great distances to sell them. By 1973, California was 40%+ surplus. A major shift back to feed supplies and markets began in the 1980s and continues today.

## Beginnings of Egg Production

In the 1900s, probably 90% of commercial eggs were produced on general farms as a sideline or by-product. The flocks were generally 100-300 hens with free range feeding on waste grain and weed seeds and insects. The eggs sold were regarded as pin money for the housewife.

Eggs were often sold through the general store and to traveling hucksters who would go from farm to farm. The huckster or grocer graded and packed the eggs and shipped them to a packer commission house where they were candled, repacked and sent by carloads to city markets. Due to unknown quality, prices at the local level were necessarily low.

## Labor Requirements for Layers

With the small farm flocks of 200-400 birds, there was practically no labor assigned for their care. In some cases, there were incubation needs and proper egg storage. The next step was for flocks of 1,000-10,000 birds. Then additional labor

## Value of Improved Rations and Genetics

Year	Eggs/Hen
1909	83+
1919	86+
1929	119
1939	134
1949	170
1954	207
1959	220
1973	222

was needed—commercial layers 60-75 per month with room and board. The managers of the larger farms received \$1,000-1,500 salaries. Bonuses were added to the manager for each year for hatching, raising, egg production, etc. A common bonus was \$25 if the flock averaged over 144 eggs per year. In 1925, a hen required 2.5 hours per year, allowing a person to care for 1,165 birds. In 1953, records showed that Southern California farms recorded 1.3 hours per hen. At this rate, a person could handle 2,240 birds including egg processing, or 3,236 not processing the eggs.

In 1958, in San Diego County, labor dropped to \$8 an hour per hen with 31% of the time for egg processing. Thus, 3,640 hours per person processing and 5,275 hours not egg processing.

In 1962, Orange County showed labor dropping to 56 hours per hen—5,200 birds with egg processing, and 7,100 without egg processing. Today, one person can manage 100,000 layers with automated feeding systems, belt egg collection, manure removal and manure belts.

## Disease and Control

There were many drugs and remedies to treat sick birds:

- Calomel—used for a variety of ailments.
- Cayenne—as a liver stimulant.
- Catechu—to treat severe diarrhea.
- Castor oil—to treat diarrhea.
- Epsom salts—for liver trouble and diarrhea.
- Cottonseed oil and olive oil—used when hens were bound; for diarrhea; and external and internal use in dressing sores.

## Disease Control

Through the years, many chronic health problems have been virtually eliminated for egg rearing and laying farms. Coccidiosis has been eliminated by rearing in cages and houses. Pullorum was eradicated by testing and eliminating positive reactors.

Vaccines for diseases came on the scene in the 1930s and '40s. Fowl Pox Laryngotracheitis and Newcastle were some vaccines first developed. Today there are vaccines and bacteria for many poultry diseases. They can be injected, given by water, or in aerosols.

Marek's disease hit California farms in the 1930s and caused 30% mortality. Farms ran from 24-45% mortality. From 1945 to 1965, death rates dropped to 15% as vaccines and management improved. Marek's vaccine was a real technology breakthrough.

Disease imposes higher levels of mortality. Its contribution to sub-optimal egg production is difficult to document, though it causes major disruptions of the industry's way of doing business.

Three examples of costly outbreaks are: outbreak of Newcastle Disease in 1971-73; Avian influenza in Pennsylvania in 1983-84; and the continuing problem of *Salmonella enteritidis* in Pennsylvania.

Morbidity and loss of production due to depopulation caused huge economic losses. Some producers chose not to resume production after depopulation. Direct costs of the program, including indemnification were in excess of \$120 million dollars. Indirect costs of the avian influenza outbreak were estimated at \$349 million dollars.

## Diseases and Developments of Treatments

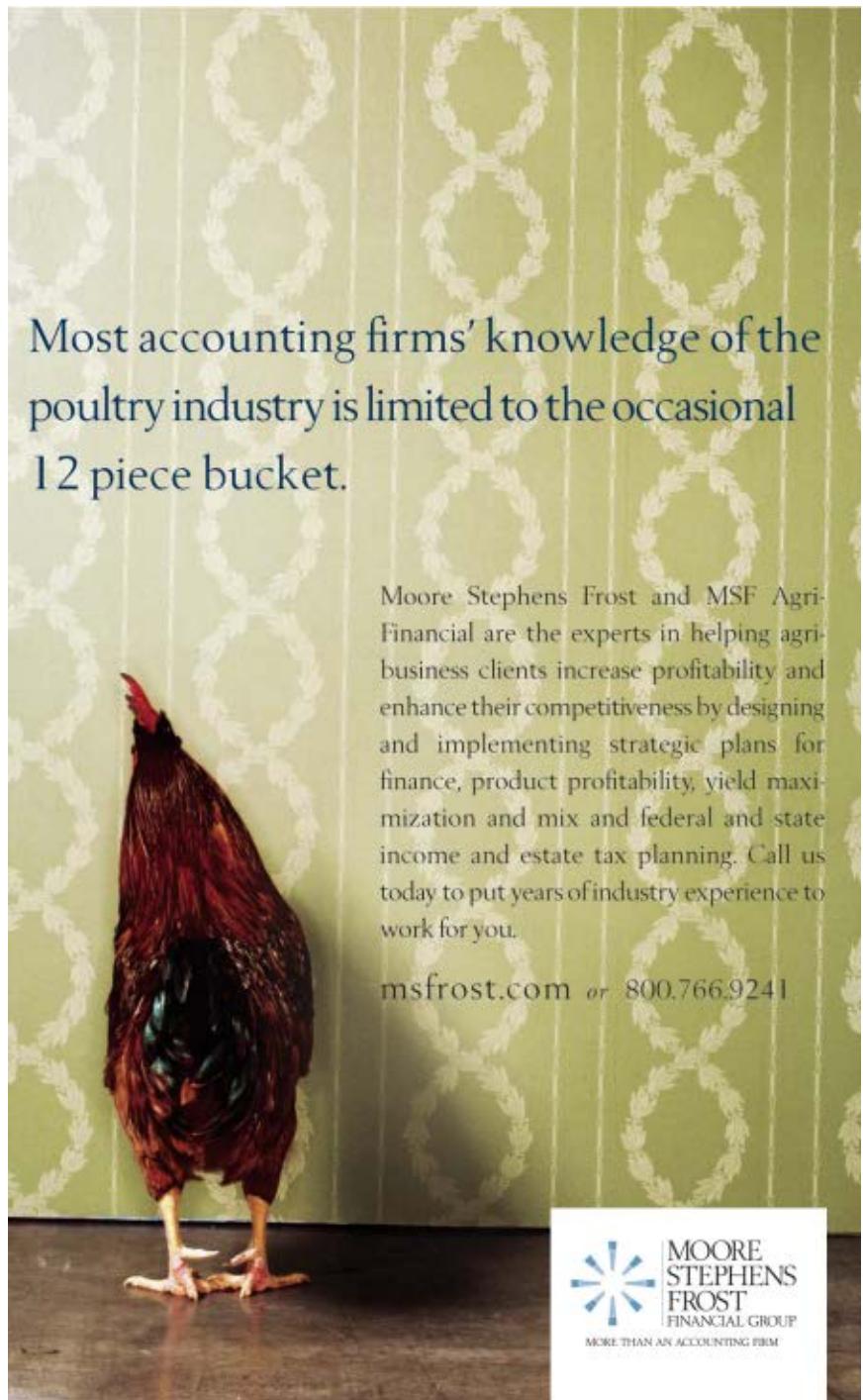
Many individuals and firms began offering various treatments for poultry in the 1920s.

George H. Lee in Omaha, Neb., advertised Gernozone extensively. He later added wormers and louse killers. Walko tablets were advertised by Walker in Waterloo, Iowa. Dr. LuGear wore a surgeon's robe and offered "tonics." Blatchford Calf Meal Co. of Waukegan, Ill., imported a "secret formula" from England. It attained nation-wide distribution.

Pratt of Pennsylvania and Hess &

Clark of Ohio featured broader lines, advertised extensively and employed salesmen. I.D. Russell of Arkansas began his business by mixing a louse powder. He sold it first from a horse and buggy and became so successful, he had a big business in Kansas City.

Dr. J.E. Salsbury, a practicing veterinarian in Charles City, Iowa, began to sell phenols in the late 1920s. He advertised



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modestly and offered diagnostic services. His business grew as he added salesmen and employed technical people. He built buildings for laboratories and manufacturing product. He had schools to educate customers about products and technology. In 1968, Dr. Salsbury was elected to the Poultry Industry Hall of Fame.

### Genetics of the Laying Hen

Two events contributed materially to the advancement of poultry breeding from an art to a science. They were the discovery of the Mendelian principle of inheritance and the trap nest by which individual production could be measured and the ancestry be traced.

Dr. Don Warren lists these as the real pioneers in Leghorn breeding—he includes C.H. Wychoff; Park's Farm; Hollywood Farms; Hanson Farm; Beall Farm; Ghosly Farm; Dryden Farm and Kimler Farm—all pre-1930. Post-1930 breeders included Highline Farms (H.A. Wallace); Monroe Babcock; DeKalb; D.M. Shaver and Art Heisdirf. A list of New England brown egg breeders include Hasco Orchard Poultry Farms; EB Permentor; J.J. Warren; C.N. Hardy; Robert Cobb; Hubbard Farms and G.B. Treadwell.

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### Hatcheries

In 1926, California had 262 commercial hatcheries with a capacity of 7.8 million eggs. During the 1930s, there were more than 10,000 hatcheries in the U.S. By 1988, the number shrank to 372. Today there are fewer than a dozen major hatcheries and another dozen smaller ones serving the egg industry.

In the early years, hundreds of chicks were delivered by the U.S. Post Office. As farms grew larger, hatcheries were required to hatch chicks in groups of 1,000 and more. During the 1950s and '60s, flocks of 10,000 and up to 50,000 were common. Today, deliveries of 100,000 to 300,000 chicks are made with no more than a 4-5 day spread. The logistics of this process of assembling and delivering became rather complicated for both the hatchery and the poultryman. In 1994, U.S. hatcheries produced 379 million straight-run chicks—an average of 15.5 million pullets a week.

### Feeds and Feeding

Early poultry flocks had free range and were often fed root vegetables and leafy greens. Some producers even provided roots in the winter. Early mixed ration blended grain included wheat bran and middlings, meat scraps and gluten feed.

In the 1940s, complete all-mash rations became standard; as the farmer got larger, bulk feeding reduced labor costs.

Today, egg producers monitor bodyweights and house temperatures and formulate rations to exacting needs. Bodyweights are managed to minimize maintenance needs. Egg size relative to

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Year	% production	Feed/dozen
1934	46.6%	5.04 cents
1954	61%	4.13 cents
1969	65%	4.11 cents

egg price is optimized by temperature and dietary adjustments.

### Technological Changes

Cages were experimented with in the mid-1920s. Originally they were built of wood with wire floors for single birds. Emphasis was on high rates of lay with intensive culling and annual replacement of flocks. In the late 1940s, 100% replacement was accomplished by weekly culling in single cages and year-round scheduling of replacement pullets.

Cages became popular to improve sanitation practices. Reducing contact with feces reduced parasite and health problems. This resulted (caging) in better flock mutation, washes could be handled effectively, and eggs could be clean and safer for the consumer.

Cages helped lead to in-line complexes with environmental controls, decked cages, automated manure removal, after a feed mill, an egg room and seven-day-per-week packing. Pullets are raised separately.

### Technology Changes

In the 1940s and 1950s, egg producers spent half their time cleaning, sizing and packing eggs. Today, we talk of blood spot detection, imaging depiction of eggs, automatic stain and dirt removal, and automated pallet and rack loading equipment. This equipment will likely continue to improve.

These technology changes have led to farms producing eggs from over 5 million in 1900 to less than 1,000 in 1995.

### Egg Consumption

In 1930, the per capita U.S. egg consumption was 231 eggs. It remained at 300-325 eggs until 1940. During WWII, consumption increased as there were meat shortages and government programs were designed to stimulate

egg production. Consumption trended downward until it stabilized at 234 to 240 eggs in 1989 to 1995. The negative impact of cholesterol in eggs led to much of the decline.

In 1989, the Egg Nutrition Council challenged the USDA on the supposed cholesterol levels. Tests showed there

was 22% less than previously thought. This information began a reversal of a drop in consumption. A considerable amount of eggs were consumed—baking and dried eggs and other foods.

The egg industry is blessed with a highly regarded product in terms of nutrition. It is a very versatile basic food commodity. Manufacturers are producing products with lower or no cholesterol. Ultra-pasteurization techniques offer longer and safer shelf life for egg products. These new egg products help eggs break from their almost complete association with breakfast—a meal that continues to decline. **EI**

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From Poultry Tribune, December 1967

# A Banker Looks at the Egg Business

By Dr. Jonathan S. Tobey

In many areas of the country, large operations already are in existence and many are on the drawing boards. An egg operation for a half million laying hens has an initial cost in excess of \$2.5 million. Who has the capital resources to construct such a unit? Not many individuals that I know. But many agriculturally-oriented companies have this amount of capital, and programs of integrated units can be budgeted to yield satisfactory returns on investment to interest some companies who are seeking diversity or expansive opportunities.

▶ **Many segments of the egg business know and understand little about the commercial lending arena.**

Operations exceeding 150,000 or 200,000 layers can be found in most egg production areas. These types of operations are looking toward complete ownership of their egg production facilities. These facilities include a hatchery, feed mill, and processing operation. Units of this size may not be large enough for complete integration. A feed mill often can be stepped up to provide feed for more than double this number of hens.

## Chains Watch Production Patterns

At the present time, several food retailers are participating in partial or complete ownership of egg production facilities, particularly in the Midwest.

Other chains are watching closely the results of these programs and are very busy trying to program what types of egg purchasing or ownership operations will be the pattern of the future.

The trend of fewer and larger egg farms will continue for the next 5 to 10 years. I don't expect to see the point reached when 75 farms of 4 million laying hens will provide all of our egg needs, but I do expect to see perhaps 15 or 20 farms appear within the next few years with upwards of 1 million hens per egg manufacturing unit.

The economies of scale may not be much different between an operation of 7,000 and 15,000 birds, but the differences between 7,000 and 25,000 can be significant. The production cost differences between 25,000 hens and an operation of 120,000 hens, or multiples of this figure, can amount to as much as 4 or 5 cents per dozen. These factors much be kept in mind in thinking of the future role of the egg business. The possibility of integrating further, back to the ownership of land resources for supplying the corn and soybean needs, will be the next biggest step in further reducing production costs.

It may surprise you to learn that many lending officers in New York City recognize the problem created by poultry waste disposal. They also understand that new production units must be planned while minimizing the costs of waste disposal and the possible legislative action that may arise concerning air and stream pollution.

## What Bankers Expect From You

Bankers expect a borrower to have an up-to-date financial statement and

good inventory figures. A certified statement is of greater value. He also should be able to show past performances and a cash flow statement for at least his three previous years. A cash flow statement for three future years is also desirable.

When a credit proposal comes into my office, I am not impressed by a voluminous feasibility study. Bankers don't measure a project's worth by the thickness of the proposal.

The tools necessary to obtain credit should include:

- An introduction and brief description of the proposal.
- A list of the pertinent economic factors such as labor sources, availability of input items, transportation costs, and advantages of location or markets.
- An operating and financial plan.
- A resume of key personnel.
- Other pertinent supplementary material.

Lenders are concerned with total credit needs and are interested in a financing plan for a complete operation. Repayment plans are being tailored to meet the cash flow of an entire operation.

## Have Plan For Loan Repayment

Lenders also are more concerned in knowing where the money to repay loans will come from than they have been in the past. They are concerned with marketing and sales. As the sales outlets move farther away from some agricultural businesses, the need for more refined and, sometimes more complex, financing plans arise.

The financial community is concerned about the lack of knowledge that many producers have in regard to

expansion plans. Often the only consideration given is to the original cost of money. Unfortunately, the true interest costs, depreciation costs, storage costs, and overhead expenses are often overlooked.

### Expansion May Create Problems

Many producers generally have assumed that larger sized operations are more economical and therefore more profitable. Increasing the scale of operations will certainly affect profits in some way, but it also can lead to decreased profits rather than increased profits.

A better credit rating is not automatic as a result of expansion. Expansion demands better management and possibly the use of additional specialized experts. Expansion also can create labor problems as well as reduce labor costs.

Eggmen also show a great deal of confusion involving depreciation. It is important to understand that depreciation is a decline or loss in value. While depreciation is commonly listed as a source of funds, the only true source of funds is the excess of revenues over operating costs. It should be noted that

depreciation expenses are legitimate expenses to be deducted before the determination of profit for income tax purposes, and they play an important role in expansion decisions. This item, however, is only useful for a profitable business.

Lenders also are concerned about the marketing of poultry and egg products. The ability to approach a retailer or wholesaler and offer a product below current market prices is not marketing. It is just plain "give-awaymanship" and helps reduce prices to new low levels which affect the entire industry.

### Producers Don't Know Banking

The banking community has found that many segments of the egg business know and understand little about the commercial lending area. They have no concept of how money is created and are usually dumbfounded when it is suggested that they keep a compensating balance on deposit with their lender. Interest alone will not generate enough funds to keep the economy moving forward, and compensating balances generate additional sources of loanable funds. It also results in a higher cost of credit to the egg business.

The larger egg businesses understand the balance concept and have accepted its principles as have other industrial corporations.

Commercial banks are faced with a challenge. They must develop pro-

**Increasing the scale of operations will certainly affect profits in some way, but it also can lead to decreased profits rather than increased profits.**

grams that will suit the needs of the egg business. They must keep up to date on the latest technologies in the egg business, and they must be willing to help you accomplish the goals that you set for yourselves. Capital alone will not accomplish the job. The success of egg operations will require the management skills of outstanding people who are well trained, enthusiastic, and are business oriented. **EI**

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# Protein Producers to Face New Challenges

By Edward Clark, Editor

**P**roducers of traditional protein sources will have their work cut out for them in the upcoming decade to hold onto market share.

"I see the growth of different analogue products, hemp cheese and hemp oil and soy products, products with specific health benefits that will challenge poultry and red meat products," says Philip Lempert, a food futurist in Santa Monica, Calif.

He also sees the growth of alternative protein sources that contain "nutraceuticals," natural substances added to food that can prevent or treat certain diseases.

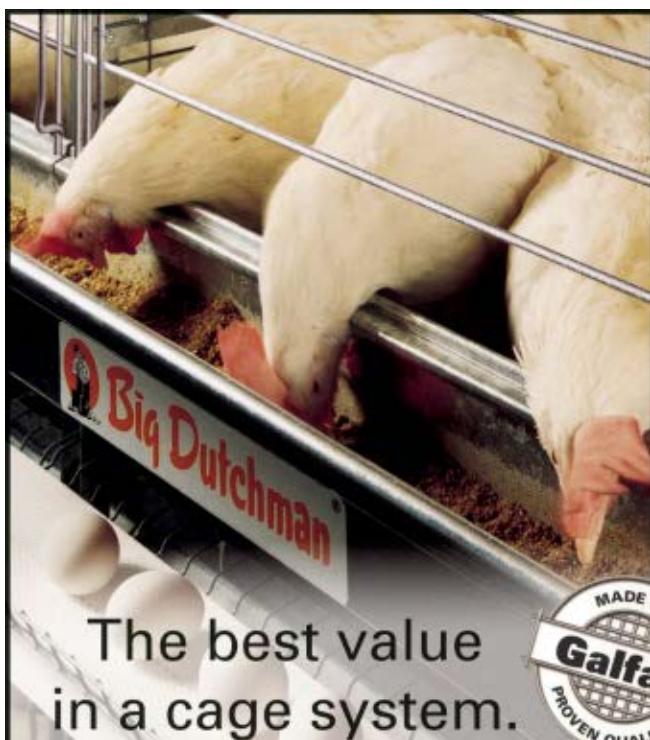
"Protein cases will change substantially," he says, adding that traditional protein products will be challenged on pricing, versatility, and health attributes.

That said, Lempert does not see much growth in consumers who become vegetarians or vegans. Rather, consumers will supplement their diets of eggs, chicken, beef, and pork, with occasional meals of vegetable-based protein products.

## Eggs Have "Unique Opportunity"

Lempert thinks that egg producers have less to worry about than other traditional protein producers because eggs have a "unique opportunity" to be enhanced with lutein for improved egg health and other attributes from layers fed special diets. Lutein-enriched eggs have been shown to increase the level of lutein in people far greater than spinach and lutein supplements.

On broilers, Lempert sees the possibility to alter feed to



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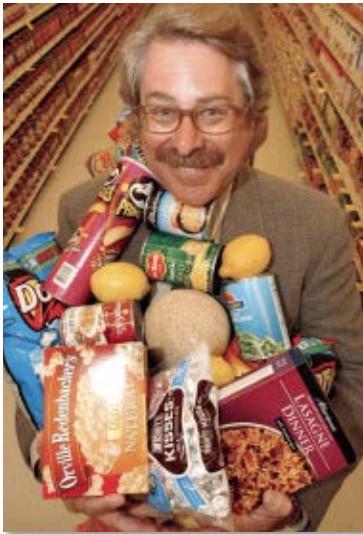
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**Philip Lempert**

give chicken “different flavor and textures. What can we do beyond a marinated product? What’s the next thing after chicken nuggets?” He sees the possibility of chicken on a stick—similar to popsicles—that can be microwaved or eaten cold with sauces.

For red meat, Lempert looks for changes in the shape of bologna and salami that fits better in sandwiches, and, like poultry, changes in feeding practices to alter the end product.

Behind many future trends, he says, will be the concern over health. Lempert notes, for example, that New York City recently banned trans fats, and he expects more government agencies to follow suit. On the fat issue overall, he says that “it looks like we’re going to have to get the government involved—but that’s not a good thing.”

Additional changes protein producers should ready themselves for, he says, are that consumers increasingly will demand to know the farm of where the product they are buying came from, both from a food safety point of view and growing consumer interest in whether animals are treated humanely, Lempert says.

One thing Lempert says will have to change in the years ahead is how long it takes to link a disease problem back to its source. But overall on food safety, he says it’s not a case of needing more rules, but rather “we need to give USDA and FDA back their money for inspectors. We have to put people back into the field.”

## Taste, Affordability, and Convenience

Yet despite consumer demands on these fronts, they still will want taste, affordability, and convenience. But there will be two groups of consumers—those who may buy organic beef and plant-based proteins, despite their higher cost—and those who don’t have the income and must buy strictly on price.

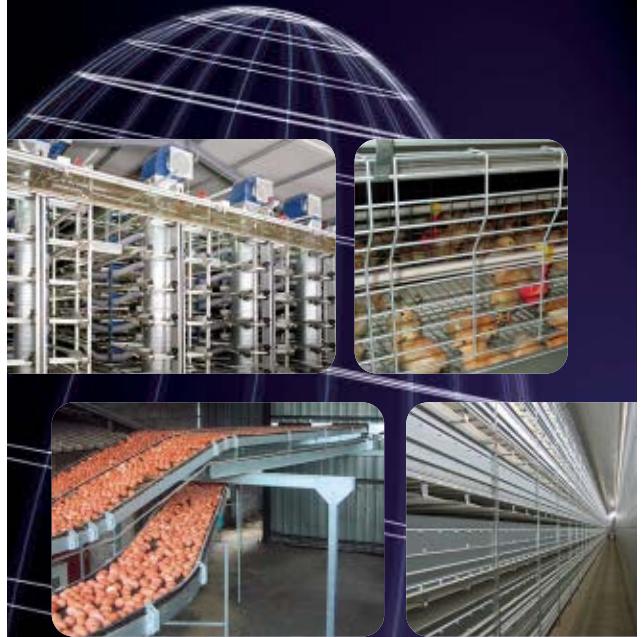
Lempert also sees changes on the retail end of the food business, particularly in the way food is packaged. On eggs, for example, he sees smaller packages, and packages that could be popped right in the microwave to make hard-boiled eggs. And with chicken, he looks for the industry to get rid of the paper so chicken is just wrapped in plastic, which he says is more attractive.

Whole Foods Markets has really woken up retailers, he says, and that’s changing the industry for three reasons: the chain emphasizes health, it celebrates food with attractive displays, and the employees really want to work there. Whole Foods has really forced other retailers “to want to get as close to consumers as they can.”

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# Looking Back, Looking Ahead

By Edward Clark, Editor

For many egg producers, the No. 1 question as they face 2007 and beyond is none other than this: when will profitability finally return to the industry. In the view of Al Pope, retiring president and CEO of the United Egg Producers as of Feb. 1, the answer is, “on a sustained basis, probably another two-to-three years.” The reason why, he says, has to do with the most dramatic event affecting the industry on the production side, in-line production.

Prior to in-line breaking, excess production from the shell egg side of the business went into breaking plants, but no more with in-line breaking, and that’s meant surplus eggs “have to find a home.” He thinks the industry is possibly three-fourths of the way in working through this adjustment.

Another key event over the past two-and-a-half decades, Pope says, is the development of the Egg Nutrition Center

▶ **“The future industry is likely to grow more on the fringes of the Corn Belt.”**  
— Al Pope

with egg checkoff dollars, which has helped turn around the cholesterol issue, resulting in an increase in per capita consumption of eggs.

## Animal Welfare

But Pope sees a huge challenge in the future on the animal welfare front, which he believes will play a role in consumption over the next 25 years. He credits the industry by being proactive,

with 90% of producers adopting UEP’s science-based animal care standards to counter groups such as the Humane Society of the United States, and others, whose goals are to put an end to animal agriculture.

Pope says, however, that adopting the science-based standards is not enough: producers also have to communicate that the standards are being followed to consumers, and that’s not easy. One way he sees for producers to do that is through improved efforts at branding eggs, which not only communicates animal care standards, but other value-added egg and egg products. That’s being done somewhat with omega-3, organic, cage-free, and other egg attributes, but Pope sees more opportunities. By creating more value-added, branded egg products, he sees egg producers obtaining a larger share of consumer dollars spent on eggs. “Retailers are making a ton of money out of eggs,” he states. Egg producers have done a superb job on the production side of the business at becoming increasingly efficient, not such a good job on the marketing end, he says.

Also on the horizon, is increased consolidation similar to what’s occurred in the broiler business, he says, but that doesn’t mean all egg operations will have to be the size of Cal-Maine Foods to be competitive. One way Pope sees for smaller operations to be competitive is to form cooperative ventures—particularly on marketing—with other mid-sized operations.

## Environmental Rules

Another huge issue the industry will be facing in the years ahead—and already is—is continued pressure on environmental rules, Pope says. While permits will become increasingly difficult to obtain, he also sees opportunities to turn poultry



Al Pope

manure into fertilizer, and for producers to use methane digesters to turn chicken waste into electricity.

Pope also believes that restrictive environmental rules will affect where future poultry operations are located. For example, he sees the industry moving away from states with high population densities, such as California and possibly Ohio, to states more on the fringes of the western Corn Belt, such as Kansas and Nebraska. And even in Iowa, which welcomed layer operations a decade ago, “it’s becoming more difficult to obtain a permit. They’re not as encouraging as they used to be.”

Another issue that will affect egg producers in the years ahead, Pope says, is tighter restrictions on documentation for Hispanic workers, “and we have a huge Hispanic-based pool of employees.” And lastly, Pope says that the industry should prepare itself for additional food safety challenges in the decades ahead as consumers demand to be able to link products back to the farm where they’re raised. **EI**



# Irradiation Plus Heat Inactivates *Salmonella*

There has been increased interest in utilization of non-thermal methods to pasteurize liquid egg products. These include pulsed electric fields, hydrostatic pressure, and manothermosonication treatments. Irradiation has also been investigated as a method for pasteurizing liquid as well as shell eggs. In a new research project, Alvarez *et al.*, 2006 (*Journal of Food Protection* 69:2066-2074) investigated the effect of irradiation (ionizing radiation) followed by heat pasteurization on survival of *Salmonella* in liquid whole egg (LWE).

Eggs were sanitized with 70% ethanol and aseptically broken, transferred to a sterile stomacher bag and mixed. The liquid whole egg was inoculated with six serovars of *Salmonella* (*S. anatum* 9270, *S. Dublin* 15480, *S. enteritidis* 13076, *S. Newport* 6962, *S. senftenberg* 8400 and *S. typhimurium* 14028) at a final cell concentration of approximately  $10^9$  CFU/ml. for each *Salmonella* serovar. Inoculated LWE was irradiated at 0, 0.5, 1.0, 1.5, 2.0, 2.5 or 3.0 kGy followed

by heat treatment at 55°, 57° or 60°C at various time intervals.

## Heat, Radiation Resistance

*S. senftenberg* was found to be the most resistant to radiation and heat. Previous research has also shown that *S. senftenberg* is quite heat resistant. Results showed that irradiation followed by heat treatment at 55° to 57°C improved the effectiveness of the pasteurization process. These authors indicated that radiation doses as low as 0.1 kGy prior to thermal treatments synergistically decreased  $D_{55^\circ}$  and  $D_{57^\circ}$  of *S. senftenberg* 3.6-fold and 2.5-fold, respectively. *S. typhimurium*  $D_{55^\circ}$  and  $D_{57^\circ}$  were reduced 2- and 1.4-fold while  $D_{55^\circ}$  and  $D_{57^\circ}$  for *S. enteritidis* were reduced 2- and 1.6-fold, respectively, following radiation doses of 0.1 kGy. This synergistic effect was not observed at 60°C. They postulated that heating at 60°C following irradiation may have generated conditions for heat resistant *S. enteritidis* cells. More research was proposed on this aspect.

These authors concluded that irradiation prior to heat treatment would reduce

heat treatment times by 86 and 30% at 55 and 57°C, respectively. They concluded that these treatments would inactivate 9 log units of *Salmonella* secrovars. These scientists felt that irradiation plus thermal treatment may have real promise as a pasteurization process to produce a *Salmonella* free LWE product.

There have been concerns in the past for utilization of irradiation pasteurization by the food industry. Attempts to implement irradiation processing in the United States have not been promising. Although past research has indicated that irradiation pasteurization is safe, the consumer has been reluctant to accept this process. There is also a need to determine the effect of this combined process on the functional and sensory properties of LWE. Since egg proteins are quite susceptible to heat pasteurization, there is continuing interest to investigate alternative methods for pasteurizing eggs **EI**

*Editor's Note: Dr. Froning is Professor Emeritus, Department of Food Science and Technology, University of Nebraska, Lincoln.*

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New World Inn & Conference Center, Columbus, Nebraska USA. (This meeting has been rescheduled from its original March date.) Contact: Nebraska Poultry Industries, Inc., University of Nebraska, A103 Animal Sciences, P.O. Box 830908, Lincoln, Nebraska 68583 USA. Tel: 402-472-2051. Fax: 402-472-4607. E-mail: egg-turkey@unl.edu. Website: www.nepoultry.org.

## March

### 13-15: Midwest Poultry Federation Convention

RiverCentre, St. Paul, Minnesota USA. Contact: Lara Durben. Tel: 763-682-2171. Fax: 763-682-5546. E-mail: lara@midwestpoultry.com. Website: www.midwestpoultry.com.

### 13-16: Pacific Egg & Poultry Association (PEPA) Convention

Coronado, California USA. Contact: Pacific Egg & Poultry Association, 1521 I Street, Sacramento, California 95814 USA. Tel: 916-441-0801. Fax: 916-446-1063. E-mail: dboggs@cgfa.org.

## April

### 22-24: Urner Barry's Executive Conference & Marketing Seminar 2007

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Science suggests that ROVIMIX HY-D provides birds with all the 25-hydroxyvitamin D<sub>3</sub> they need to develop and maintain bones that can withstand the stresses of egg production. In young pullets, stronger bones are necessary for optimal lay persistence which can translate into more eggs. As the hen ages, ROVIMIX HY-D will help promote better egg shell quality.

To learn more about how ROVIMIX HY-D can strengthen your flock, call your DSM Nutritional Products Account Manager or visit our website at [www.nutraaccess.com](http://www.nutraaccess.com).

**Rovimix Hy-D**  
Building a better bird.

Unlimited. **DSM**