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House Farm Bill Spurns Animal Rights' Pleadings, but Keeps Encouraging Ethanol



By James C. Webster

For egg producers, there's good news and bad news in the House Agriculture Committee's farm bill.

What's positive for poultry and livestock producers is the absence of stringent new animal rights provisions sought by increasingly vocal activist groups.

Negative or mixed: its continued encouragement of ethanol production from corn.

Although the committee's July 17-19 bill-writing session is just the first step in a long legislative process to complete a new five- or six-year farm bill later this year, it sets the tone for what Congress likely will produce.

Even during preliminary subcommittee meetings, efforts by animal rights activists to include new European-style regulations in the 2007 farm bill failed to get traction. But they have not let up and are expected to try again when the full House takes up the bill.

The Humane Society of the United States (HSUS) – which proclaims a goal of ending battery cage egg production—wants an amendment that would bar federal agencies from buying food produced under “industrial farming practices.”

But neither the subcommittee draft nor the “chairman's mark” used as the basis for committee decisions included new animal agriculture standards.

Rep. Leonard Boswell, D-Iowa, who chairs the subcommittee on livestock, dairy and poultry, said recently that producers already “are vigorously ad-

ressing animal welfare issues” without additional federal standards and that consumers are driving stricter animal-raising standards.

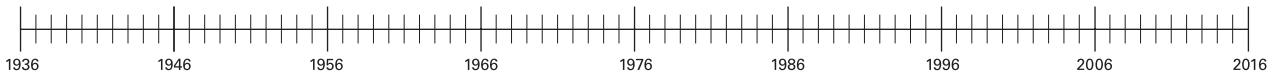
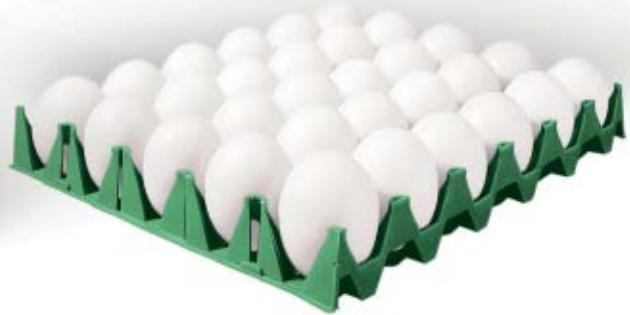
Rep. Robin Hayes, R-N.C., the subcommittee's senior Republican, said that producers, rather than activists, should determine animal husbandry practices. “Passing legislation based solely on emotion goes against the committee's responsibility to use science and best management practices that are designed to improve animal welfare practices,” he said.

United Egg Producers (UEP) President Gene Gregory told Boswell's subcommittee in May that animal care is “a subject that lends itself to emotion, unsubstantiated allegations and extremist tactics.” He said it is difficult to “know where concern for animal welfare ends and opposition to the very existence of animal agriculture begins.”

Renewable Fuels Boom

Even as they spurn HSUS pleading, the committee and a large majority of both houses of Congress this year line up in strong support of corn growers and etha-

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nol refiners who are driving the “renewable fuels” boom.

The farm bill’s energy title would authorize nearly \$5 billion for renewable energy loans, grants, research and development, but with a catch. It’s contingent on finding budget “offsets” from spending cuts or new revenue.

Some of the funds would be directed to upgrade existing ethanol and biodiesel facilities, some to stimulate fuels from cellulosic materials to supplement those derived from grain. Yet other programs would encourage development of methane power generation from livestock waste.

Although it won’t be sorted out until later in the year, Rep. Collin Peterson, D-Minn., chairman of the House Agriculture Committee, suggests that a potential way to offset the increased energy program costs would be to move the provision from the farm bill to a Senate-passed omnibus energy bill that the House is considering this summer.

Congressional bias toward ethanol was demonstrated in lopsided votes in the Senate last month against safeguards advocated by UEP and other poultry, livestock and food producer groups.

The bill adopted by the Senate would require 36 billion gallons of renewable fuels by 2022 but the amount over 15 billion gallons would have to come from non-grain (cellulosic) feedstock.

Mandate Would Boost Corn Prices

The mandate in the Senate bill would increase corn prices by 20 cents a bushel by 2015, adding about \$1 billion to poultry and livestock production costs,

according to the Food and Agricultural Policy Research Institute (FAPRI). Using its computer model, FAPRI translates that into “lower net returns to livestock, poultry, and dairy producers.”

Appealing “to ensure the bill does not pick winners and losers in domestic agriculture,” Sen. James Inhofe, R-Okla., tried to soften the potential impact of doubling the current ethanol mandate to 15 billion gallons a year by 2015.

By a 31-63 vote, the Senate rejected

▶ The ethanol mandate in the Senate bill would increase corn prices by 20 cents a bushel by 2015, adding about \$1 billion to poultry and livestock production costs.

Inhofe’s proposal to reduce the mandate by as much as 15 percent annually if the corn stocks-to-use ratio drops below 10 percent—the top priority of a coalition of feed and food grain user groups.

UEP, the National Chicken Council, National Turkey Federation and pork, cattle and dairy producer and several food companies and industry trade associations lobbied on behalf of the Inhofe approach.

The coalition asked Congress to provide “a reasonable amount of certainty that adequate supplies are available” to all corn users. The Inhofe amendment, the users said, “would go a long way in achieving a safety net ensuring those of us that utilize corn and corn products will have enough to go around should a drought or flood occur that would limit

the harvested amount that is available.”

But the proposal faced spirited opposition from Sens. Richard Durbin, D-Ill.; Charles Grassley, R-Iowa, and John Thune, R-S.D. They cited the opposition registered by corn growers, the ethanol industry, the American Farm Bureau Federation, and National Farmers Union.

Durbin cited an economic finding that Inhofe’s proposed 10 percent stocks-to-use trigger would suppress corn prices to \$2.50 to \$2.60 a bushel—“a dramatic decrease in income of farmers and a dramatic increase in government costs” through higher farm program payments.

Low-Pathogenic AI

The committee’s farm bill also expresses “the sense of Congress” that USDA pay 100 percent of the cost of voluntary programs to control low-pathogenic avian influenza, a top priority legislative goal of UEP this year. The admonition is hortatory rather than compulsory, but it could help overcome resistance by the Office of Management and Budget to USDA using discretionary authority to compensate growers forced to destroy infected flocks.

Also in the bill is additional money – up to \$2 billion a year, if the cost is offset – for the Environmental Quality Incentives Program (EQIP). Without offsets, it would authorize \$1.55 billion for 60 percent cost-share payments for livestock and poultry producers in the first year, increasing gradually to \$2 billion in fiscal 2012.

The House hoped to wrap up its farm bill before the recess scheduled for Aug. 6-31. Senate leaders are not quite as firm but hope to complete committee work before the recess and take it to the floor in September. **IE**

Egg Industry

published monthly by WATT
303 N Main St Ste 500, Rockford, Illinois 61101-1018 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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▶ Caged Hens Just as Happy as Cage-Free

Caged hens experience no more stress than their free-range counterparts, according to research at the University of Sydney's Poultry Research Unit. Lead researcher Jeff Downing told the London *Telegraph* that free-range hens are more prone to manure-borne diseases and parasites, that extreme temperatures are more stressful to hens than the method of their housing, and that caged hens have greater protection from both the elements and predators. If hens have no cover, they are constantly in fear of attack by predators, Downing said.

The study measured corticosterone in the white of eggs laid by caged, barn-reared, and free-range birds. Downing said. He added that the hormone is only one stress measure, but a good one.

This is not the first study to find real-world problems with letting chickens out of their cages, says the Center for Consumer Freedom. In October 2003, researchers at Veteri-

nary College in Hanover, Germany, found that cage-free hens produced fewer eggs, are more susceptible to disease, and die prematurely twice as often.

▶ Do Blind Chickens Lay More Eggs?

A strain of naturally blind chickens lay more eggs than their sighted counterparts, according to University of Guelph researchers. According to an article in Canadian Press, the strain, called Smokey Joes, begin reproduction earlier and produce more eggs than the average chicken. The reason is the way the blind chickens respond to light. The article says it is hoped the research will help producers develop improved lighting techniques to boost egg yields.

▶ June Egg Prices Set Record

June's Umer Barry Midwest large quote averaged 88.71 cents during June and was the highest June price on record. The previous high

June price occurred in 1996 at 82.35 cents. Going back to 1985, the average monthly June price is 69.34 cents, according to the United Egg Producers (UEP).

Umer Barry's Central Breaking Stock quote averaged 47.57 cents in June, the highest recorded June price since 1996. UEP notes that the June 1 inventory of 279.9 million hens was the lowest recorded June inventory since 2003.

UEP says that two factors are likely responsible for producers reducing flock numbers: the high cost of grain, and a recognition of the historical trend of losing money during the period between Easter and Labor Day. UEP also says that producers may be fearful that anti-cage legislation or intimidation of the marketplace by animal rights activists may not make cages a good long-term investment.

Since the first week of November 2006, shell egg price quotes have not fallen below 80 cents per dozen and have averaged more than \$1 per dozen during the period.



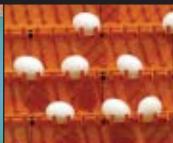
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Health, Marketing Stimulate Interest in **Yolk Color**

By Dr. Simon M. Shane

Marketing studies show that consumers associate intensity of yolk color with “freshness of eggs,” “health of producing flocks,” and “wholesome feeding.” Producers of generic eggs in the United States are generally content to accept the color of yolks as produced by flocks with minimal monitoring and rely on tabular xanthophyll values in feed formulation to achieve minimal standards. In contrast, producers of specialty eggs strive for uniform and deep coloration consistent with higher client expectations.

Travelers to Europe observe that eggs have darker and more orange yolk hues than those in the United States. This is due in large measure to supplementing diets with synthetic carotenoids which are permitted under European Union (EU) regulations. In the United States, addition of these compounds, which are chemically identical to their natural analogues, is disallowed as it is regarded as a deceptive practice in terms of U.S. Food and Drug Administration (FDA) regulations. Producers in the United States are required

related to the level of xanthophylls which comprise mainly lutein and zeaxanthin. Informed consumers are responding to advice provided by dieticians and specialists in ocular and vascular medicine to increase their intake of these pigments.

Sources and Types of Egg Yolk Pigments

The xanthophyll pigments are terpene compounds structurally derived from beta-carotene. The most commonly encountered xanthophylls are lutein and zeaxanthin, both of which impart a yellow color to yolks. Cryptoxanthine and canthaxine, in contrast, are red pigments. Xanthophylls are fat-soluble compounds, absorbed most efficiently from the intact intestine. They are transported by lipoproteins and are either stored in fat or deposited in the yolk of eggs. Hens are capable of metabolizing absorbed xanthophylls to produce a range

high for the ingredient stored through to the August following harvest.

Quantifying total xanthophyll levels in ingredients, feed and yolk should follow the Association of Official Agricultural



Egg yolk color is usually measured under field conditions using a series of standard reference colors printed onto plastic strips.

Chemists (AOAC) methods. Carotenoids are assayed using a sequence of saponification followed by hexane extraction and then determining the concentration of the specific compounds present applying high-pressure liquid chromatography. It is possible to distinguish between lutein and trans-lutein and other xanthophylls and also to distinguish between trans-zeaxanthin and related compounds applying this technology.

The chemical structures of the significant xanthophylls demonstrates the minor differences in the position of hydroxyl groups and oxygen which determine color and related properties. The ability of ingredients to impart color to yolks is a function of xanthophyll content at the time of ingestion and is influenced by the digestibility of these compounds. Chronic enteritis or parasitism (capillariasis), es-

Table 1. Range of Xanthophyll Values for U.S. Ingredients.

Ingredient	Xanthophyll Content mg/kg (= ppm)
Marigold petal meal	6,000 – 10,000
Dehydrated alfalfa meal (17 percent protein)	200 – 350
Corn gluten meal (41 percent protein)	100 – 150
Corn gluten meal (60 percent protein)	200 – 350
Distiller's grains with soluble (DDGS)	15 – 60
Corn (newly harvested)	20 – 30
Corn (prolonged storage)	10 – 20

Comparison of Xanthophyll content for marigold petal meal, corn gluten meal, distiller's grains and corn.

to use only natural pigmenting agents, which are derived from vegetable sources, although the active components are concentrated by extraction and purification.

The second component of yolk intensity relates to the specific health benefits cor-

related to the level of xanthophylls which comprise mainly lutein and zeaxanthin. Informed consumers are responding to advice provided by dieticians and specialists in ocular and vascular medicine to increase their intake of these pigments.

of analogues by displacement and substitution of hydroxyl and ketone groups. The stability of xanthophylls is affected by exposure to oxygen and ultraviolet light. A reduction of 2 percent to 5 percent in biological activity occurs during each month of storage unless premixes are stabilized with an effective antioxidant. The rate of degradation in natural ingredients is fairly rapid and this can lead to suboptimal levels in corn, the major contributor of

natural xanthophylls in layer diets within four months after harvest. This has direct implications in formulating diets since tabular values of xanthophyll content for corn, which may be applicable in October and November, may be unrealistically

| Health, Marketing Stimulate Interest in Yolk Color |

pecially in non-confined flocks, may result in pale yolks despite adequate dietary levels of xanthophylls. Lutein is generally less available than zeaxanthin which influences yolk color in relation to nutritional formulation and the expenditure on pigmenting additives.

Synthetic carotenoids are available in Europe and are permitted in terms of EU regulations. Carotenoids are analogues of compounds that exist in natural feedstuffs. A widely used commercial product, beta-apo-8-carotenal, is in fact an intermediate in the degradation of beta-carotene to vitamin A. The synthetic carotenoids are nontoxic and

Electronic instruments are available to determine yolk color. The Orka Egg Tester simultaneously provides a reading of yolk color intensity according to the Roche/DSM scale, Haugh units and United States Department of Agriculture grade. Research laboratories use sophisticated colorimeters.

Commercially-Available Pigmenting Additives

Natural pigment supplements are extracted from marigold petals (*Tagetes erecta*) to increase the intensity of yellow-gold color of yolks. Extracts of red peppers

and paprika (*Capsicum* spp.) provide a red hue to yolks. Red and yellow pigments are frequently combined to achieve a desired yellow-orange color and to take advantage of the synergistic activity of commercial supplements since the respective

lutein and capsanthin components are mutually complementary. Supplements for commercial layers are usually added in dry form as a microingredient to diets. Levels range from 0.5 lbs. to 2 lbs. per ton depending on the xanthophyll contribution of natural ingredients, level of yolk intensity required, and the cost-effectiveness of supplementation.

Paprika, pepper or marigold petals are harvested and are processed by milling, extraction of the pigment as an oleoresin followed by saponification. This process releases the xanthophyll components from the fatty acid ester form, facilitating subsequent absorption in the intestinal tract. There is a high correlation between the degree of saponification, which should range from 95 percent to 100 percent and subsequent intensity of color, irrespective of the chemical assay for the presence of xanthophyll compounds.

In a typical dry yellow commercial pigments, xanthophyll content is approximately 20 ppm (mg/kg) with 80 percent of the xanthophylls in the form of lutein and approximately 6 percent as zeaxanthin. In contrast, red pigments assayed at 20 ppm content contain at least

50 percent capsanthin and a correspondingly low level of lutein.

Commercial pigments additives comprise the active and refined extracts blended with an inert vegetable or mineral carrier, a drying agent such as silicon dioxide, propylene glycol and ethoxyquin as an antioxidant. To maintain the stability of the xanthophylls, one EU manufacturer packs product in aluminum foil-lined bags with air-tight seals which allow exclusion of air by flushing with nitrogen to maintain potency.

The beneficial effect of combining red and yellow pigments on egg yolk color is demonstrated in Table 3, showing the effect of supplementing a wheat-based diet devoid of xanthophylls. Adding a red pigment to a similar quantity of yellow supplement almost doubled the yolk color score.

A dietary xanthophyll content of approximately 40 mg/kg is required to achieve an acceptable Roche/DSM score of 7.5 to 8.0. With a diet containing 70 percent newly-harvested corn, all the xanthophyll required for pigmentation would be present. If old corn is used, xanthophyll content may decline from a high of 50mg/kg to as low as 25 mg/kg. The resulting diet would contain only 18 mg/kg xanthophyll and would therefore require 1.5 lbs. to 2 lbs. of a commercial pigments additive (containing 15 mg/kg) to restore xanthophyll content to a level consistent with acceptable yolk color.

It is therefore essential to evaluate the cost of any additive based on the xanthophyll contribution. Natural sources of

Producers of specialty eggs strive for uniform and deep coloration consistent with higher client expectations.

xanthophylls include corn gluten meal (60 percent protein) which contributes 300 mg/kg; corn gluten feed (40 percent protein) which can range from 100 to 200 mg/kg; and dehydrated alfalfa meal ranging from 200 to 350 mg/kg, depending on composition and processing.

In evaluating the xanthophyll requirement for nutreputical eggs with special label claims, higher levels of yellow pig-

Table 2. Carotenoid Compounds in U.S. Ingredients and Feeds.

Ingredient	Xanthophyll mg/kg	Lutein	Zeaxanthin
New corn	40	30	8
Corn gluten	350	125	90
DDGS	60	20	15
Mixed feeds (n = 4)	35	10	6

Comparison of levels of Xanthophyll, Lutein, and Zeaxanthin.

are extensively used in Asia, the EU, and Latin America, attesting to safety and efficacy. It is unfortunate that FDA has deemed these products from reputable multinational manufacturers to be adulterants.

The major sources of xanthophylls in diets for laying hens include corn, corn gluten meal, and dehydrated alfalfa meal. The xanthophyll content of these ingredients is shown in Table 1. Specific assays for lutein and zeaxanthin in U.S. ingredients and in feed are shown in Table 2. Variability in the carotenoid composition of ingredients contributes to variation in the intensity of yolk color produced by hens fed similar diets at different times of the year.

Egg yolk color is usually measured under field conditions using a series of standard reference colors printed onto narrow plastic strips arranged in a fan. A numerical score is assigned each "blade" although it is noted that two commercial suppliers of pigments additives issue color fans which differ by at least one unit in numerical scoring. Evaluating yolk color by subjective assessment using a comparison fan requires natural daylight and a white background. False readings can be obtained under fluorescent lighting or if operators have defective color perception.

menting additives are required to boost lutein content. Assays show that hens fed conventional diets produced yolks with a total xanthophyll content of 150 mi-

of skin and the possibility of reducing the incidence rate of certain cancers. The common factor to the health promoting attributes of eggs relate to the antioxidant

properties of lutein, which is a vital component of cell membranes, which must be protected against peroxidation by free radicals.

Lutein and zeaxanthin are found in the macula lutea (yellow spot) of the retina. These pigments absorb the ultraviolet portion of the light spectrum entering the eye, protecting the sensitive receptor cells in the macula. It is estimated that age-related macular degeneration (ARMD) affects more than 5 percent of the U.S. population over 65 and this condition is a leading cause of blindness in senior citizens.

Studies conducted at health research institutes have demonstrated that consumption of an egg each day by a susceptible group of volunteers increased the density of pigment in the macula

without increasing serum cholesterol.

Current intake of lutein in the average adult diet is in the region of 1 mg to 2 mg of lutein daily, mainly provided by leafy vegetables. Adding an egg containing adequate levels of lutein to diets will increase the intake of this critical nutrient to prolong visual acuity. The ability of lutein to absorb ultraviolet light and thereby inhibit formation of free radicals elaborated from lipid peroxidation, has a parallel application to protect the dermal layers of skin in people exposed to intense sunlight over protracted periods. Increasing lutein and zeaxanthin intake reduces the probability of developing basal cell carcinoma and possibly melanoma.

Take Home Message

Health and marketing considerations should stimulate greater concern in formulating feed to achieve desired xanthophyll levels. Cost effectiveness of additives must be evaluated in terms of producing yolks with desired color required by specific market segments willing to pay for the perceived attribute of intense yellow pigmentation and lutein content. **EI**

Table 3. Synergy Between Natural and Pigmenting Compounds.

Yellow Pigment g/ton	Red Pigment g/ton	Yolk Score
250	0	5.3
250	500	9.0

Affects of pigments on yolk scores.

crograms. Assuming a dietary content of 40 mg/kg and an intake of 100 grams per day (22 lbs./100 hens/day), an intake of 4 milligrams per hen represents only a 4 percent efficiency of deposition of dietary xanthophylls into egg yolk.

Contribution of Xanthophylls to Human Health

Dieticians affiliated with the Egg Nutrition Center have reviewed available peer-reviewed scientific literature confirming the value of regular consumption of eggs in preventing age-related macular degeneration, promoting the integrity

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The Poultry Watering Specialists

Performance Benchmarking Boosts Profitability

By Dr. Simon M. Shane

Benchmarking is used extensively in a range of industries to compare performance parameters and financial results among competitors or within components of an enterprise. Benchmarking is of value in assessing performance and evaluating expenditure in significant cost areas including feed, labor, fuel, transport, utilities and packaging material.

History of U.S. Benchmarking

Following the divestment of the Ralston-Purina and Cargill integrations during the 1960s and early 1970s, a large number of independent but relatively large egg operations emerged to supplement smaller operations serving regional markets. Extreme competition arising from cycles of oversupply created the need for efficiency. Control of costs became a principal determinant of profitability in markets characterized by seasonal variation in price and cycles of overproduction occurring at two to three year intervals.

The late Richard Chilson established a series of costing systems based on computerized templates. These were designed to collate and tabulate production and to present financial data to appropriate levels of management with benchmark comparisons against standards for individual flocks or complexes. Depending on requirements, some systems could be integrated and extended to incorporate financial evaluation and comparison

ranking against anonymous competitors.

Chilson Systems was acquired in 2006 by AgriStats, Inc., currently the dominant force in computerized benchmarking systems for the broiler industry. This take-over has the potential to transfer advanced technology used in the broiler industry to assemble, tabulate and rank subscribers.

CAT² was formed in the mid-1990s to address efficiency in food processing by developing and customizing management information software. The products of CAT² represent the needs of a commodity oriented industry concerned with internal company comparisons concentrating on breed standards and cost differentials among complexes.

Egg Management Series

Computerized data collection and management information systems should be modular and capable of adaptation to suit the needs of egg producers, who as a group are more diverse in their structure and operations than broiler integrators. The Egg Management Tool Series offered by CAT² includes the following components:-

Layer Information Manager, records the production parameters of pullet rearing and egg producing flocks and displays data in tabular and graphic form with reference to either breed or company standards.

Layer Forecasting Module, generates a projection of egg production by grade for

designated units or complexes.

Layer Costing Module, prepares profit and loss statements for flocks based on input costs, production and unit revenue.

Order and inventory Control Module, correlates client orders and controls inventory for efficient DSD and FIFO rotation of stock. Systems are based on bar code identification of products.

Appraisal of Benchmarking

Egg producers in the United States are concerned with generic shell products, egg liquid and more recently, emerging specialty presentations. Since generic production dominates the market, the revenue for the various grades is determined largely by regional supply and demand considerations. Predicting hen numbers in the various regions should influence management decisions regarding expansion, placement, molting and depletion.

Both the USDA and Don Bell of the University of California at Riverside issue forecasts of production. Consolidation within the industry has the potential to rationalize production to eliminate cyclic fluctuations and achieve prolonged stability in profitability.

Reliable cost information is complementary to production forecasts as both cost and revenue determine profit.

Don Bell makes available monthly updates of feed and other costs reflecting the major regions. It is essential to monitor feed, labor and vehicle costs which influence the relative return from producing in low-cost areas with transport to regions in a supply deficit.

Two Levels of Application

Benchmarking, irrespective of the system used, can be applied at two levels. Quarterly or periodic reviews by executive management identify trends relating to placement, performance and price. Decisions can then be made as to placement programs and short-term allocation of resources. Summarization and "rendering down the figures" is critical to understanding costs and markets in relation to company strategy.

At the operational level, accurate and reliable data allows managers to compare

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¹ White, W. Hunter, et al., Knockdown and Mortality Comparisons between Spinosad, Imidacloprid and Methomyl Containing Baits against Susceptible *Musca domestica* L. (Diptera: Muscidae) Under Laboratory Conditions, 2006.
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performance and controllable costs among complexes and to relate the impact of pullet depreciation, feed, processing, packaging and distribution against both internal standards and possibly against competitors. A middle-level manager at a large national broiler integrator warns against the danger of both being overwhelmed with data and being “too close to the figures” especially when confronted with monthly reports.

Benchmarking can only contribute to overall company profitability if it is incorporated into strategic decisions concerning allocation of capital and other resources.

Many of the managers interviewed indicated that benchmarking is most useful when used to explain exceptions and to help with understanding the cause of deviation from company, strain or industry standards. Reasons for discrepancies are derived from analyses of data to develop appropriate corrective action. Size of operations, configuration of housing, ventilation and cage installations all influence cost. In a recent example, a large integrator noted significant differences in cost between two almost identical in-line complexes approximately five miles apart. Examination of production data showed consistent inferiority in egg production and egg mass in one complex. Given close similarity in house design and equipment, a common feed supply and identical disease challenge, an intensive review of possible causal factors was undertaken.

Water consumption was found to be different between the two complexes and this was attributed to airlocks in the supply system of

the affected unit due to defects in design and maintenance of well pumps. When appropriate modifications were made, performance on this complex improved.

Interpretation

Benchmark comparisons, whether internal or among companies, must be subject to interpretation to ensure validity and to understand the specific differences in management or operating environments. Factors influencing performance may include the age and standard of maintenance of complexes, in-line or off-line configuration, regional ingredient costs and disease challenges.

Generally, managers in the egg industry are influenced to a lesser degree by benchmarking systems than their counterparts in broiler production. Short-term comparisons of ranking may introduce distortions in decision-making which ultimately may be to the detriment of company profitability. Sub-optimization through establishing artificial transfer costs and compartmentalization of interrelated units in the production chain can produce distortions which may adversely affect the bottom line. Attempting to minimize the cost of pullet rearing is a frequently encountered situation.

Producing uniform pullets of acceptable weight at transfer which have been effectively immunized will contribute to optimal egg mass during the laying cycle. Producing a “cheap” pullet may be reflected as a competitive advantage in benchmark comparisons of pullet cost among complexes or competitors but a “high” ranking on this single criterion may, in fact, detract from overall company profitability.

Decisions relating to biosecurity, suppres-

sion of rodents, comprehensively vaccinating against SE, IB and ILT may increase costs but contribute to higher overall profit. Since feed is the most significant cost component of egg production, careful attention to nutrient specifications, allocating appropriate feeds to flocks according to age, environmental conditions, daily intake and level of production, can be guided by valid comparisons between and among complexes. Establishing bonuses based on narrow performance criteria invariably leads to sub-optimization and detracts from both teamwork and the bottom line of a company.

Benchmarking Trends

Most of the large integrators will continue to develop internal systems based on available commercial software which can be used to identify both advantageous and deleterious practices based on realistic and achievable standards. Comparison between and among competitors is usually less productive, especially if there is bias in selection of the companies or if there is confounding in either collection of data or unexplained differences in the structure and operating environment of the subscribers to a program.

It is inevitable that benchmarking may become more focused and specific, concentrating on conservation of energy, processing efficiency, distribution or further processing. As with the broiler industry, benchmarking will continue to evolve from simple cost comparisons to profit models which relate to return on investment.

Benchmarking is a beneficial approach to developing productive programs and policies in a competitive industry. The structure of computerized data collection packages and their interpretation are pivotal to both strategic and operational management decisions. **EI**

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AEB to Promote Health Benefits, Versatility of Eggs

Joanne Ivy, president of the American Egg Board (AEB), made a presentation to the Board of Directors as a lead-in to the organization's summer meeting on July 19 in Chicago. She outlined some of the pertinent features of the organization's Strategic Plan. Nutrition science will be emphasized as will traditional and new media aimed at "Moms with Kids at Home" to promote the health benefits and versatility of eggs.

In addition, it will be planned to expand and maximize national messages through the AEB state organizations. AEB and state affiliates will focus their efforts on the highest potential areas such as manufacturers, food service operators and retailers to assure the maximum impact of resources.

From the consumer's standpoint, new plans are being developed

to increase awareness of the nutritional value of eggs and to maintain the 80 percent awareness factor of eggs.

67 Pages Have Discussed Eggs

Committee reports followed in the board meeting. Jacques Klempf, chairman of the consumer education/foodservice committee, introduced Howard Helmer and Linda Braun for their presentations on newspaper and magazine coverage. Within the past four months, many articles in food related publications have included eggs.

In magazines alone, there have been 67 pages that have discussed eggs and their usage. This number translates to over \$16 million in advertising value. The time period discussed includes May which is National Egg Month, and Easter. Newspaper and radio added to the overall publicity value by over \$2 million.

AEB is sponsoring a "Worst Cook in America" contest, which is creating interest on the internet, on television and in stores. In the future there will be additional online communication with the Howard Helmer blogs and satellite media tours.

AEB's Alice Heinze reported on the Foodservice Chef Ambassador Program in which three outstanding chefs work with AEB on specialty dishes. She also discussed the successes of the 2007 foodservice advisory committee, which includes members from all aspects of the food industry.

Jerry Kil, chairman of the AEB advertising committee, opened the discussion on advertising by introducing the Grey Advertising team for presentation of their new campaign. The uniqueness of eggs supports a new, simple message for 2008. Factors supported by research such as high quality protein, natural and non-processed will be highlighted.

The agency has conducted research showing there is a good public reaction to the new "cracked egg" campaign. They also presented behind-the-scene clips of how new creative material is being



Wayne Mooney, chairman, American Egg Board.

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produced. To reduce costs, the new broadcast spots are being produced in Canada.

Grey Advertising has also produced new print ads to be used on billboards as well as in other media. They intend to use some online advertising as well. Media schedules were presented that include spots during



Jacques Klempf, chairman, the American Egg Board's consumer education/food-service committee.

the day, which they said will maximize the egg message for breakfast time. In 2008, the advertising focus will be on health and wellness platforms with a theme, "Moms with Kids at Home". They will have more research data available to better understand and measure campaign results.

Nutrition

Allison Madall, of the Edelman public relations firm was introduced by Blair Van Zetten, chairman of the nutrition committee. She discussed the recent New York City event attended by 27 editors of leading women's publications. During the editors' event, many of the health and nutritional factors pertaining to eggs were discussed. She also presented several video clips of a wide variety of press releases in print, radio and television. Sixty-one placements in two publications were made recently in the Eggs for Pets Program for recipes using eggs in homemade pet foods.

Allison also reviewed the Kristine Lilly campaign, featuring the soccer star and how they intend to use her as a spokesperson in the future. Choline in eggs is being worked on with appropriate groups to promote its benefits for Healthy Babies. Other group meetings held to further the promotion of

eggs, included visits by the Egg Ambassadors, health professionals, and the AEB Scientific Advisory Panel.

Health, Disease Prevention

Don McNamara, executive director of the Egg Nutrition Center (ENC) reported on the organization's recent activities. In light of the move from negative publicity for eggs to positive, the ENC will continue to promote research with health and disease prevention in the forefront.

ENC will concentrate on educating consumers to the benefits of eggs rather than defending their use. AEB, through the ENC will continue supporting education for young people through the Fellowship Program.

McNamara also discussed several research projects that are starting, including the Nicolosi project to research if eggs can slow down macular degeneration after it has started. The Hoffman study focuses on egg intake for expectant mothers and will deter-

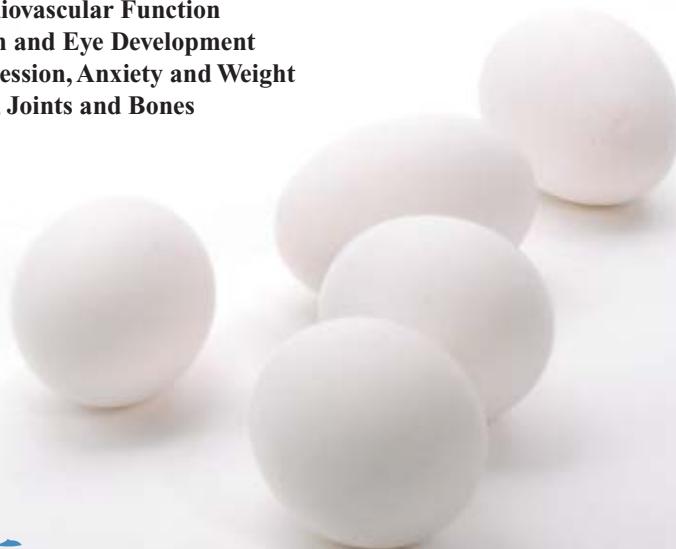
Healthy Eggs - Healthy Profits

Not only are consumers looking for food products fortified with omega-3 fatty acids, surveys have shown they will overlook the higher price tag. Omega-3 enriched eggs are the perfect solution! Two percent inclusion of Virginia Prime Gold fish oil in the layer diet produces omega-3 eggs, high in EPA and DHA.

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| AEB to Promote Health Benefits, Versatility of Eggs |

mine if they help the birth rate situation in lower income families.

McNamara also commented on the ongoing efforts by the Egg Safety Center (ESC), headed by Hilary Thesmar, on the avian influenza issue. This program is being done in concert with the Turkey Federation and the National Chicken Council. ESC is also working on many projects including their newsletter, a Crisis Communication Manual and a new research project at the University



Howard Helmer, the American Egg Board's "Omelet King."

of Minnesota relating to the movement of egg products, and the salmonella probability.

McNamara presented progress of the "Crack 300" program. ENC is working on being sure that scientific evidence is in place to break the long-held theory that the dietary limit of cholesterol from eggs should be 300 mg. The "Crack 300" program is working to put a strategic plan in place to educate the public that science is proving otherwise.

Many countries throughout the world do not have these restrictions.

Chairman Jim Brock opened the report from the Industry and Marketing Committee by introducing AEB's Cindy McGarrigle. Areas of interest from the committee included a report on egg product marketing, and reports on the Advisory Council and the press releases that have been successful promoting the safety of egg products. Egg products continue to be promoted through the supplement that goes into major food manufacturing publications as well as research projects, trade shows and the work of Dr. Glenn Froning with Egg Solutions.

Attendees were told that with the new strategic plan, new and improved opportunities are in place for egg products marketing. Over 8,000 research people have been reached through advertising and trade shows relative to egg products use. In all cases, excellent scores have been made on the advertising efforts. New schedules will continue the promotion in *Food Processing* and *Baking* magazines.

UEP Presentation

Gene Gregory, president of the United Egg Producers (UEP) said that an \$800,000 matching grant from the USDA for research on the air emission issue has been received. On animal welfare, Gregory said that a new National Farm Commission has been formed but it is staffed by "anti-modern"



Brian Hayward, the American Egg Board's finance chairman.

egg production people. He is afraid they will be lobbying Congress to change the way modern agriculture is conducted. UEP is working on being ready to meet this new challenge, he said.

UEP also is working with states to stop legislation that would eliminate cages. The organization has helped to stop similar legislation in several states already. Gregory sees an increased effort on the part of UEP to communicate more with egg customers. A good example of this is more communications with college foodservice people. Activists have been talking extensively to this group of people with some success; however, there have been successes by the industry to show foodservice and others the fact that cage egg production is really not bad, he said. UEP is holding conferences that include tours of egg production facilities.

Exports Growing

Jennifer Geek, United States of America Poultry and Egg Export Council (USAP-EEC) gave her report regarding the export and promotion of shell eggs and egg products. Egg product exports are up in this country. Jennifer mentioned many countries that are doing business here and said that USAPEEC is working on promoting eggs. Advertising, trade shows, seminars and even an omelet making demonstration in Mexico are just a few of the promotional activities that USAPEEC has planned for the egg industry. Even with a slight budget reduction for these activities, USAPEEC continues to work on egg promotions in Mexico, Korea, the Middle East, Japan, Singapore, Hong Kong and Germany. **EI**

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Egg Components Have Important Human Health Applications

We have known for some time that the egg has many valuable components with potential health benefits. Recently, various food scientists have reviewed the many egg proteins and lipid components having various bioactive applications including mine and Kovacs-Nolan, 2006 (*Worlds Poultry Science Journal* 62 No. 1: 87-95) and Anton et al., 2006 (*Worlds Poultry Science* 62 No. 3: 429-438).

Several egg white proteins are known to have antibacterial and biological properties. Lysozyme is effective against gram-positive bacteria and has antiviral activity. It has been used as a food preservative and various pharmaceutical applications. Lysozyme is routinely separated by the egg processing industry using ion-exchange resins.

Ovalbumin is the principle protein in egg white making up about 60 percent of the total egg white complex. Upon enzyme hydrolysis, the peptides formed have been observed to reduce blood pressure of hypertensive rats. Also, enzymatic hydrolysis of egg albumen has produced peptides which are effective for lowering blood pressure.

The protein ovotransferrin binds iron which

inhibits growth of gram-negative bacteria. It has been proposed also for treatment of infants for acute diarrheas. Ovotransferrin and phosphovitin from egg yolk both have the additional benefit of being an antioxidant, which relates to their iron-binding capabilities.

Avidin binds biotin making it unavailable to bacteria. Avidin binds to various gram-negative and gram-positive bacteria thereby producing antimicrobial activity. Some studies have also shown anticancer possibilities from Avidin. Enzyme hydrolysis of ovomucin has produced peptides, which have shown antiviral activity against Newcastle disease, bovine rotavirus and human influenza virus. The protein cystatin, which makes up about 0.05 percent of the egg white protein complex, has been observed to also have anticancer capabilities.

Omega-3 Fatty Acids

When considering lipid components, the industry is routinely marketing shell eggs which are enhanced with omega-3 fatty acids. Omega-3 fatty acids are known to be an essential nutrient for brain function, eye health and prevention of heart disease. Phos-

phatidylcholine (lecithin) is a primary lipid found in egg yolk. Choline is known to be important for brain function. Some research has indicated that yolk phospholipids such as lecithin may alleviate symptoms of Alzheimer disease. There has been some interest in sources of egg lecithin.

Thus, there are several components of eggs that may have health benefits. There is a need of further research on economical and practical methods to fractionate these various components from eggs. Utilization of the various egg fractions for health applications would open new value-added opportunities to our egg processing industry.

Note: On a personal note, I am announcing my resignation as a monthly contributor to *Egg Industry*. Increased responsibilities with other professional commitments influenced this decision. I have enjoyed writing these articles for many years and have valued the positive feedback. I thank the editors and the readers for allowing me this privilege. **EI**

Dr. Froning is Professor Emeritus, Department of Food Science & Technology, University of Nebraska-Lincoln.



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INDUSTRY CALENDAR

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Hilton Hotel, Budapest, Hungary. Contact: Julian Madeley. Tel: +44 (0) 20 7490 3493. Fax: +44 (0) 20 7490 3495. E-mail: Julian@internationalegg.com.

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

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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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