



Newcastle Problems Keep Expanding

On October 1, 2002 Exotic Newcastle Disease was confirmed in backyard flocks in southern California.

Outbreaks of Exotic Newcastle Disease severely affect the poultry industry. The disease has continued to spread and on January 8 Governor Gray Davis declared a state of emergency. Since then the disease has also been found in Nevada. At the present time (as of January 28, 2002) the disease is restricted to backyard and commercial poultry in **Los Angeles, Orange, Riverside, San Bernardino, San Diego, and Ventura Counties**. As of the end of January close to 2 million birds had been euthanized in attempts to contain the disease. Six commercial egg producers at the time were affected.

Officials are going door-to-door to find sick birds in affected areas and tracing birds into and out of infected flocks.

Owners of any species of birds affected by these quarantines are prohibited from moving birds and bird products out of the quarantined area without a permit from the USDA.

Any gathering of birds increases the risk of spreading disease. It is strongly recommended that no birds of any species be gathered, moved into or moved within the quarantined area. This quarantine will remain in effect until Exotic Newcastle Disease has been eradicated from California. Anyone who violates the quarantine is civilly liable in an amount not to exceed \$25,000.

In 1971, a major outbreak occurred in commercial poultry flocks in Southern California. The disease threatened not only the California poultry industry but the entire U.S. poultry and egg supply. In all, 1,341 infected flocks were

See **NEWCASTLE** on page 3

Update: Buckeye Egg Farms

Isa America is attempting to buy part of Buckeye Farms but the Ohio Department of Agriculture and a Licking County judge must be convinced, according to the *Marion Star* that the sites can be run without polluting the environment. ISE was reported to have agreed to buy the Goshen Township pullet farms, two egg-laying farms in Mount Victory and Marseilles and the Marion County feed mill, but only if the barns are open.

Buckeye Egg Farm officials were in court on January 14 addressing concerns about manure handling and fly control. The state of Ohio, local officials and area citizen groups are skeptical about the ability of the facilities being managed to control pollution.

10th National Egg School

The Tenth National Egg Quality School is to be held May 19 - 22, 2003, at the Hilton San Antonio Airport, San Antonio, Texas. Registration will be coordinated through the Indiana State Egg Board, with Candy Byers being the contact individual there.

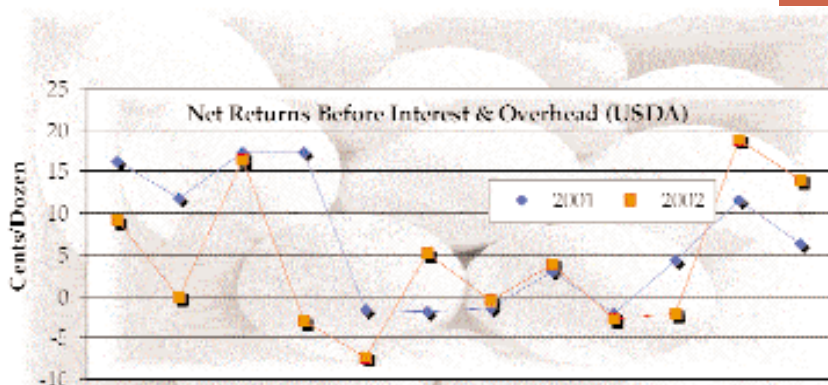
This is a notice for an educational opportunity in the area of Shell Egg quality. Training is conducted in all areas of egg quality i.e., grading standards, hands on grading laboratories, Food Safety, HACCP training for production, processing and distribution, and Federal Regulations. The training is conducted by USDA graders and experts in the various fields discussions.

Topics include: USDA Grading - interior and exterior; laboratories in grading; HACCP; preserving egg quality; egg processing and refrigeration; and eggs and food safety.

For additional information, contact Kenneth E. Anderson, Ph.D., Tel: (919)515-5527; Fax: (919)515-7070; Email: ken_anderson@ncsu.edu

Correction to our Top Company Rankings

In the January 2003 issue of *Egg Industry* we listed Midwest Poultry Services as having 4.5 million layers on hand on December 31. The figure should be 5.9 million birds. This would move the firm up to Number 11 on our rankings.



INDUSTRY NEWS

From **NEWCASTLE** on page 1

identified, and almost 12 million birds were destroyed. The eradication program cost taxpayers \$56 million, severely disrupted the operations of many producers, and increased the prices of poultry and poultry products to consumers.

The California Department of Food and Agriculture (CDFA) and the United States Department of Agriculture (USDA) are currently working to eradicate END. As of the end of January over 1,245 people were working to eradicate the disease. California Department of Food and Agriculture (CDFA) stated that as of January 28, 7,498 premises had been quarantined with 1,447 of these premises contained birds infected with or exposed to END; all birds in these flocks have been or will be humanely destroyed. All affected premises are being cleaned and disinfected after the birds have been removed. Owners are being compensated at "fair market value" for birds that are destroyed. Owners will be allowed to restock birds after there is no risk of them being reinfected with END.

At the 55th Annual International Poultry Exposition, held recently in Atlanta several speakers involved with the outbreak provided updates.

The audience was told that as of Jan. 24, END had been confirmed in six of California's commercial layer flocks. Three of the confirmations have been traced to fighting birds in backyard flocks and two to movement of people and trucks. Nearly 2 million hens had been ordered to be destroyed. With nearly half of California's commercial laying operations located in the quarantined portion of southern California, the concern was that the situation was going to get worse before it gets better.

California state veterinarian Dr. Richard Breitmeyer stated that the next few weeks will be very telling and should provide a good indication of just how extensive the outbreak will likely be. The incubation period for END in chickens is two to six days.

Breitmeyer said the extent of the situation in California caught everyone a bit by surprise. Prior to the outbreak, he said, no one had a good handle on the size of the state's backyard flock sector. "We knew it was there but we didn't know how big it was," he said. At the very least, it is estimated there are 3 million game birds in California belonging to some 50,000-60,000 different owners.

Under California law, ownership of game birds is legal but fighting of the birds is illegal. Even so, Breitmeyer said, bird fighting is an accepted practice among certain cultures. It is such an accepted practice that authorities in California have actually had to break up two bird fights being staged on quarantined sites.

Other complicating factors for authorities and inspectors, said Breitmeyer, have been the number of loose birds in the quarantined areas that must be captured and the language barrier that exists between bird owners and inspectors.

Breitmeyer's advice to operators of commercial poultry complexes is that they assume everyone coming to work each day has been exposed to END. Given the current situation, he said, it would be difficult for employees not to have been exposed to the disease. He recommends that commercial operators require all employees to shower in. "Biosecurity is extremely important," he told the attendees.

"Our commercial poultry flocks are at a very high risk right now," said Breitmeyer. He pointed out that it is for that very reason that the industry must act now to improve its biosecurity efforts. The place to start, Breitmeyer said, is for each commercial poultry producing state to get a handle on its game fowl industry.

"Until we started looking, we simply didn't know the scope of this industry," he said. He encouraged other state veterinarians in the audience to lead this charge in their respective states.

In addition, a long-term disease-prevention strategy with Mexico must be developed, said Breitmeyer. "We need to stop sharing this disease," he said.

EGG
INDUSTRY

EGG INDUSTRY is published monthly by Watt Publishing Co.
122 S. Wesley Avenue
Mt. Morris, Illinois 61054-1497 USA
Tel: (815) 734-4171
Fax: (815) 734-5679
E-mail: olentine@wattmm.com
<http://www.wattpoultry.com>

All rights reserved. Reproduction in whole or part without written permission is strictly prohibited. EGG INDUSTRY and its logo are registered trademarks of Watt Publishing Co.

Editorial Director Charles Olentine
Editorial Consultant John Todd
International Editor Terry Evans
News Editor Lisa Thornton
Art Director Patricia Schier
Editorial Production Nancy Grossnickle

TO ADVERTISE: Contact James Plunkett, Watt Publishing Co., P.O. Box 950, Cullman, Alabama, 35055, Phone (256) 734-6800, FAX (256) 739-6945, E-Mail plunkett@wattca.com

SUBSCRIPTIONS: USA \$48.00/yr; Canada \$54.00/yr; Outside USA & Canada via Airmail \$60.00/yr; \$10/copy unless marked; Prices in US Dollars. Business or occupation information must accompany each subscription order.

CHANGE OF ADDRESS: Please report change of address to EGG INDUSTRY, Watt Publishing Co., 122 S. Wesley Avenue, Mt. Morris, Illinois 61054-1497 USA, Fax: (815) 734-7021. Give BOTH old and new address.

Vaccination for END is another area that Breitmeyer said deserves some immediate attention. While the value of the practice has long been debated, he said it is time for some extensive research in this area.

Ron DeHaven, deputy administrator of the U.S. Department of Agriculture's Animal and Plant Health Inspection Service, suggested that a good place to get a handle on the extent of the backyard flock population in a certain region is to check with the local feed store. Likewise, he said, feed stores play an important role in getting the word out to urban folks on the risks associated with END and the prevention practices that should be followed to reduce those risks.

The U.S. Postal Service and commercial airlines, DeHaven said, also are cooperating and have halted shipments of birds.

INDUSTRY NEWS

UEP January Board Meeting Report

United Egg Producers met in Atlanta January 21 immediately prior to the International Poultry Exhibition. The attendees represented 58 companies with approximately 150 million laying hens.

Positions adopted by the Board include the following:

1. Animal Welfare: Established a policy stating that the "house average" space allowance will be permitted for any buildings and equipment purchased or contracted for prior to April 1, 2003 and installed by December 31, 2003. Any equipment purchased or contracted for or built after these dates must accommodate the placement of hens after August 1, 2008 at a minimum of 67 square inches per hen for White leghorn hens and 76 square inches per hen for Brown egg layers.
2. Animal welfare administrative fees will be required to be paid by no later than February 28, 2003 in order to maintain their certification status.
3. A committee was appointed to meet with a group of producers who have requested that UEP amend the 100% facility rule that

is required to be recognized as an "Animal Care Certified Company" and to reconsider the policy that prohibits co-mingling of Animal Care Certified eggs and eggs from non-certified companies.

4. In light of the current Newcastle disease in Southern California, staff was directed to write a letter to all California Animal Care Certified Companies asking that they not schedule their animal welfare audits until the quarantine has been lifted and it is safe to enter the farms.
5. On the Government Relations front, UEP will establish a legislative effort to secure \$3 million of federal funding for new uses of spent hens.
6. D.C. staff was directed to request that USDA re-visit the organic rule in light of the Exotic Newcastle disease.
7. Additionally, D.C. staff will investigate and fund the means of following animal welfare bills introduced in all 50 states.

Eggs in petfood

At the upcoming Petfood Forum 2003, Dr. Donald J. McNamara will talk about eggs as a petfood ingredient. In addition to being an affordable source of high quality

protein and other nutrients, consumers tend to view eggs as a natural source of these nutrients. Since consumers are increasingly concerned about the sources of petfood ingredients, eggs look good on a petfood label. To many consumers, the more natural the products, the more like what they eat, the better the petfood.

Donald J. McNamara, PhD, is the executive director of the Egg Nutrition Center. He will speak at Petfood Forum 2003, March 31-April 2, at the Hyatt Regency O'Hare Hotel in Chicago, Illinois, USA. You can get more information and register online by going to www.petfoodindustry.com and clicking on the Petfood Forum link, or send an e-mail to Marcia Riddle at Riddle@wattmm.com.

FSIS Position of Animal Care Logo

USDA-FSIS has announced that they will not require a physical break or cleaning to avoid commingling of eggs from animal care certified companies and those from non-certified companies. FSIS will only require that the egg processor provide documentation, if requested, that no eggs purchased from non-certified producers were used to make a product carrying the "Animal Care Certified" logo.

Equipment Dealers Earn Awards

VAL-CO recently presented Excellence Awards for outstanding dealer performance in people, products and service to several north central companies. Accepting the awards were:

Randy Eisenmenger, Design Agri-Systems, Inc., Humphrey, Nebraska; Brad, Steve and Brian Hohn, MDS Manufacturing, Inc.; Parkston, South Dakota; Bob Kaveney and David Rohlfling, Rohlfling's of Cleveland, Ohio; Tom and Nate Skattum, Skattum's Confinement Systems, Luverne, Minnesota; Jamie Tindal, Dave Nord, Andy Lilleoden, Chris Schmitz, Darin Wagner and Steve Meints Christensen Construction, Sleepy Eye, Minnesota; Jerry Isley, PALS, Willmar, Minnesota.

Iowa Continues Dominance in Egg Production

The new USDA annual report on *Chickens and Eggs* was released the last week in January (<http://usda.mannlib.cornell.edu/reports/nassr/poultry/pec-bbl/lyegan03.txt>) showing Iowa as the leading state in both total number of layers and total egg production. Table 1 shows the rankings by state by total number of layers (includes commercial egg layers and all breeders). Table 2 provides a breakout of egg production

with some of the states broken down into total eggs and table eggs.

The total value of all chickens on December 1, 2002 was \$1.05 billion, down 2 percent from the previous year. The average value per bird decreased from \$2.42 per bird to \$2.38.

Table egg production in 2002 increased 1 percent over 2001 to 73.8 billion eggs.

All layers in the United States		
	Average Number of Layers 1,000	
	2001	2002
IA	32,591	36,980
OH	30,160	30,479
CA	23,437	23,652
PA	24,377	23,641
IN	22,958	22,435
GA	20,994	20,452
TX	18,744	18,608
AR	14,891	14,829
MN	12,142	11,729
NE	11,650	11,591
NC	11,139	11,045
FL	10,756	10,631
AL	10,371	10,173
MO	6,882	6,923
MS	6,704	6,795
MI	6,475	6,686
SC	5,586	5,372
WA	4,987	5,166
WI	4,568	4,272
OK	4,020	4,173
ME	4,076	4,146
KY	3,798	3,932
NY	4,127	3,887
CO	3,571	3,736
IL	3,292	3,431
UT	3,282	3,342
MD	3,182	3,197
VA	3,397	3,134
CT	3,152	3,106
OR	2,958	2,750
SD	2,300	2,335
NJ	2,030	1,994
LA	1,946	1,982
TN	1,297	1,354
DE	1,399	1,315
WV	1,092	1,219
ID	888	886
HI	588	539
MT	321	341
MA	283	269
VT	206	197
NH	152	159
WY	12	12
Oth	4,230	4,312
US 4	335,012	337,202

State ranking by egg production				
	Total		Table Egg Type	
	2001	2002	2001	2002
	Million Eggs		Million Eggs	
IA	8,691	9,910		
OH	7,900	7,940		
PA	6,662	6,520	6,439	6,324
CA	5,998	6,124		
IN	6,025	5,973	5,875	5,824
GA	5,086	4,961	2,991	2,847
TX	4,734	4,774		
AR	3,431	3,329	1,305	1,230
MN	3,112	3,124	3,003	3,013
NE	3,001	2,977	3,001	2,977
FL	2,737	2,731	2,573	2,578
NC	2,535	2,518	930	919
AL	2,359	2,281	730	635
MO	1,789	1,837		
MI	1,677	1,771		
MS	1,550	1,588	494	497
SC	1,416	1,380	1,196	1,160
WA	1,339	1,369		
WI	1,235	1,158		
NY	1,143	1,100		
ME	1,100	1,079		
CO	946	1,008		
OK	926	951	528	551
KY	933	921		
MD	870	894	803	848
UT	865	894		
IL	888	893	842	853
CT	884	855		
OR	818	760	798	739
VA	766	734	380	351
SD	575	568	575	568
NJ	556	533		
LA	480	494		
DE	369	347		
TN	294	300		
WV	235	261		
ID	251	242		
HI	129.4	117.5	129.4	117.5
MT	95	104		
MA	80	80		
VT	61	59		
NH	43	46		
WY	3.6	3.6		
Oth	1,155	1,189		
US	85,745	86,698	72,797	73,787

Effect of Alum Applications to Hen Manure on Egg Production and Phosphorus Runoff

P.A. Moore, Jr., M.G. Wilson, T.C. Daniel, T.R. Costello, D.R. Edwards
U.S. Department of Agriculture
Agricultural Research Service
Poultry Production and Product Safety Research Unit
115 Plant Science
University of Arkansas

Positive Effect of Alum in a Layer Operation

High ammonia levels have been shown to make poultry more susceptible to diseases and to result in decreased growth rates, poor feed conversion and decreased egg production in poultry. High ammonia levels in air also negatively impact human health. The objectives of this research were to: (1) determine how much alum is needed to reduce ammonia from laying hen manure in a laboratory study, (2) design a liquid alum delivery system for high rise laying hen houses, (3) build an alum delivery system for a high-rise laying hen house, (4) determine the amount of alum and timing of application needed to keep ammonia levels below 10 ppm in a high-rise house, (5) compare egg production from hens raised in high-rise houses with and without alum applications, (6) determine the cost-effectiveness of using alum to control ammonia in high-rise laying hen houses, and (7) determine the effect of alum applications to hen manure on P solubility and P runoff from tall fescue plots. Preliminary experiments were conducted to determine how much alum would be needed to reduce ammonia loss from hen manure using ammonia flux chambers.

The data indicated that scrubbing ammonia from the air by misting a solution of liquid alum over the manure was a very effective way to reduce ammonia concentrations in high-rise facilities. The results of these studies also indicated that frequent applications of liquid alum at low rates would be the most effective treatment.

To design the liquid alum delivery system, several small-scale studies were conducted to evaluate methods and materials to be used, such as pipe size, nozzle type and pumping method. These studies showed that the best way to pump the liquid alum through the system was using air pressure (nozzles equipped with check valves).

A full-scale liquid alum delivery system was designed and installed in a high-rise hen house in Lincoln, AR. Liquid alum (25 percent alum w/w) was used. The system used a controller which allowed the user to operate in three modes; manually, by a timer or by using an ammonia sensor. Different spraying frequencies and

spraying durations (application rates) were tested to determine the most efficient application strategy. Ammonia levels at the bird level on the second floor were monitored to determine the most efficient treatment method.

Testing showed ammonia levels were reduced from 70-90 ppm to around 10 ppm with liquid alum. Following the initial testing trials were conducted for an eight-month period. During this time the system was alternately turned on and off for one-month intervals. Production parameters (egg production, feed conversion, etc.) were monitored weekly. Ammonia fluxes from the manure were also monitored weekly to determine if the liquid alum had a residual effect on ammonia volatilization. Egg production was 3.3 percent higher when the system was on than when it was off (35,722 vs 34,574 doz/wk). Feed conversion was also much better when the system was on (2.94 vs. 3.02). On average, the system used approximately 1,000 gallons of liquid alum/month. Liquid alum costs \$0.44/gallon hence, on average the alum cost was \$110/week. The improved feed conversion and egg production resulted in benefits of \$536/week, resulting in a net return of \$426/week.

The system had a large (3000 gal) storage tank and could apply liquid alum automatically based on ammonia levels at hen height. These two options are somewhat expensive and are not really necessary. The total parts cost of the system was \$30,561. This could be reduced to \$18,868 if the liquid alum is applied with a controller that works on a timer and does not use ammonia sensors. The cost could be further reduced to \$10,868 if alum storage totes were used, rather than the 3,000 gallon tank.

With a net benefit of \$426/week, this cheaper system could be paid for in six months. Ammonia flux was reduced by 32 percent with alum and phosphorus runoff from fescue plots fertilized with manure was reduced by 40 percent. Therefore, based on these estimates, this system appears to be a cost-effective method of controlling ammonia emissions and phosphorus runoff from laying hen manure.

USPEA Project 411. The research was funded by the U.S. Poultry & Egg Association.

Implications of Bird Density Reductions: A Nutritionist's Perspective



*Nick Dale
The University of Georgia
Poultry Science Department
Poultry Science Building
Athens, GA 30602*

Sooner or later, everyone involved in the commercial rearing of poultry comes to realize that a change made in one phase of the production process will almost certainly have implications on numerous other aspects. It is, thus, completely reasonable to wonder what effect decreased cage layer density (i.e., more space per hen) might have on flock nutrition. While feed is always a major cost of producing eggs, the increased grain and oilseed prices projected for the coming year make the issue even more relevant.

What can be assumed from the outset is that the cage density changes currently being implemented will have no immediate drastic effects on feed formulation. However, we need to be cognizant of whatever subtle changes may occur in the nutrient requirements of our flocks so as to be fully aware of the issues to be considered and the choices we may be called upon to make. To address this question, several key nutritionists with experience in the commercial egg sector were consulted and major issues discussed. The major points resulting from these conversations were as follows:

Will strain performance change? While any change in strain popularity is at this point speculative, it is suggested that the smaller framed hen will benefit less from reduced density than somewhat larger birds. It is theorized that strains of hens which do not reach their genetic potential for egg production under current density conditions may well become more competitive. Possible feed intake changes with such strains will necessitate a review of current nutrient levels.

Feed efficiency will almost certainly decrease. All nutritionists consulted agree on this point. In part, the decrease in efficiency will be the result of increased spillage of feed from greater access to the feeder. Also, decreased hen density will permit greater opportunity for physical activity, thus implying greater caloric expenditure on non-productive functions. The only scenario under which feed efficiency would not decline would be one in which egg production increases to more than offset feed wastage and increased activity.

House temperatures will decrease. Fewer hens per house will reduce the amount of heat generated, probably leading to increased consumption. This may have a number of possible consequences. According to some, it will

be increasingly difficult in older flocks to control egg size and shell quality. On the other hand, it may become easier to achieve early egg size.

If feed intake does increase, and the level of egg production remains constant, it may be possible to achieve some cost savings with modest reductions in protein, amino acids, and other nutrients. In one scenario, metabolizable energy levels would remain the same, increased intake with the same caloric density thus providing increased energy for physical activity. However, concern is expressed that hens may overeat and thus develop excess body fat and fatty livers, along with a possible increase in mortality. On this point, honest disagreement can be found among experienced nutritionists. Some feel that metabolizable energy levels should be reduced (i.e., less fat, more fiber) to reduce caloric intake. The experience of others, however, is that such formula changes will only stimulate additional consumption. It is possible that both points of view are valid, depending on the degree of temperature reduction. To confuse matters more, caloric intake may well vary between houses, depending on outside temperature, degree of insulation, air movement and other factors.

Where to place low density cages? Any monitoring of house temperature will identify rows of cages with somewhat higher temperature than others. In order to meet short-term cage density goals, some cages in the house will have fewer birds than others. If these cages are placed in warmer areas of the house, it would be hoped that the increased environmental temperature would serve to buffer any increase in feed consumption.

Will increased feeder space lead to greater bird uniformity? In a given cage, one or more hens is frequently found to be of markedly lower body weight. This presumably reflects a lower degree of aggressiveness in gaining time at the feeder. If such hens were to constitute 20% of a flock, it may well be that in order to achieve optimum production we are inadvertently overfeeding 80% of the birds in order to entice satisfactory production from the more timid hens. If more feeder space leads to greater body weight uniformity, we may in the future be able to reduce nutrient margins of safety currently incorporated into our laying hen formulas. Considerable savings could thus be achieved in feed cost.

As is clear from the above discussion, we have a great deal to learn about the optimum management of flocks afforded reduced cage density. This is hardly the time to offer dogmatic solutions. Rather it has been our objective to review how our feeding programs may (or may not) be affected by changes in cage density. In either case, we need to be alert to flock responses in order to modify existing programs so as to achieve optimum efficiencies of production.

Note: The suggestions of Dr. Steve Leeson, University of Guelph, Dr. David Roland, Auburn University, and Dr. John Kuhl of Nest Egg Nutrition are gratefully acknowledged.