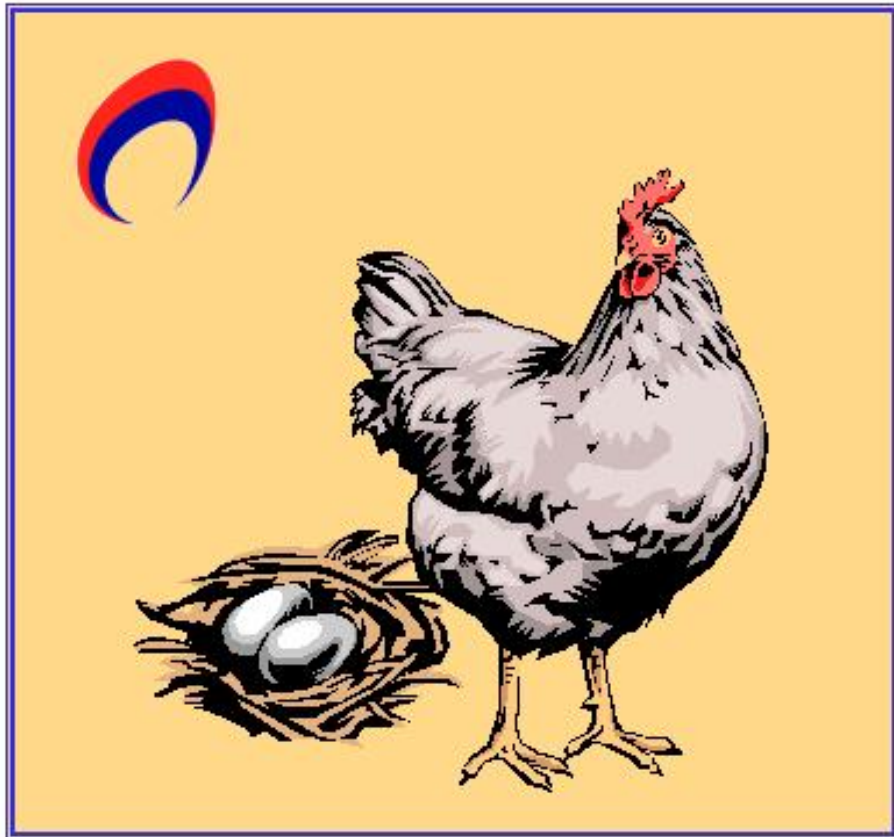


UNITED EGG PRODUCERS
ANIMAL HUSBANDRY
GUIDELINES FOR



U.S. EGG
LAYING FLOCKS

2002 EDITION

THE U.S. EGG INDUSTRY

The commercial egg industry in the U.S. has grown rapidly over the past 50 years, and its growth reflects the changing needs of our society. Today, just 2% of the population lives on farms, producing food for the remaining 98% of us. As people moved into the cities and suburbs with fewer people raising their own food, the demand for eggs increased while the supply diminished. The modern egg industry was born in response to this demand.

As late as the 1940s, small backyard flocks of chickens made up the majority of the egg producing industry. After these chickens had laid a relatively small number of eggs, they were consumed for meat. Then hens entered into a natural molt during the winter months and stopped producing eggs. Consumers wanting to purchase eggs during the winter months had to receive them from cold storage, which quite often meant nothing more than simply the producer's basement. The eggs could be several weeks old by the time the consumer actually received them.

Backyard chickens, continuously subjected to diseases, freezing, predators, poisoning, and infighting, had a precarious existence and a normal mortality rate as high as 40% per year. Average yearly egg production was little more than 100 eggs per year of which many were contaminated by the microbes from poultry diseases.

To meet a growing demand, farmers needed to upgrade their production facilities while keeping in mind the health and welfare of their birds. They also recognized the need to deliver eggs to the market in the most economical manner possible. The modern day cage system was found to be the one system that could meet both requirements.

To a large degree, poultry husbandry practices have been researched by land grant colleges and universities and have been adopted by farmers and the allied industry. As a result, today's husbandry practices have been shaped by research and innovation.

Today, we would estimate that 98% or more of the commercial egg production in the U.S. and an estimated 70-80% of the world's egg production are derived from caged layers. Even though a trend away from cages is seen in some European countries, the increasing use of cages in developing countries will continue to increase the percentage and population of layers housed in cages worldwide.

Modern egg farms, operating in a completely free market system with no government assistance programs or quotas, require large capital investments. While these farms have grown to meet the market demand, they are still classified as "Family Farms" with the owner still being on the farm making day-to-day decisions. Only two egg production companies in the U.S. share ownership with publicly traded stocks.

HUMANE GUIDELINES FOR U.S. EGG LAYING FLOCKS

PUBLIC PERCEPTIONS:

Poultry production practices have generated public discussion about the well being of laying hens. Concerns about the welfare of farm animals have arisen in developed nations because of public interest in, and expectations regarding, the use and treatment of animals. A basic understanding of how welfare concerns are manifested in our society is important when charting courses for future poultry production practices and responses to consumer concerns.

Surveys and polls show that consumers have clearly indicated that they retain confidence in farmers and ranchers to make responsible decisions concerning the welfare of animals. They also show that consumers regard the humane treatment of farm animals as important and that their ethical perspectives on animal treatment are continuing to evolve.

Maintaining the present level of consumer confidence is critical to the egg production industry. Therefore, it is the responsibility of the industry to make carefully researched and considered decisions regarding hen welfare. Producers who adopt sound guidelines for the welfare of their hens and incorporate these into their production operations will have a solid base from which to reassure the public that they are practicing good management and care for their birds.

UEP'S MISSION:

United Egg Producers developed the first industry guidelines in the early 1980s. Recognizing the growing concern for animal welfare worldwide, UEP commissioned a Scientific Advisory Committee for Animal Welfare in 1999. This scientific committee was asked to review the scientific literature on specific topics relevant to the well being of laying hens and to identify areas where further research is needed. Additionally, the committee was asked to develop recommendations based upon existing science for presentation to the UEP Producer Committee for Animal Welfare and ultimately to the industry. The Scientific Committee took no responsibility for mandating these recommendations, recognizing that the producers must voluntarily accept and implement them.

The recommendations and guidelines found within this document have been accepted by and presented here by the Producer Committee using the recommendations from the Scientific Committee as a blueprint.

This document will provide recommendations for the following management practices. This is a living document subject to changes as new scientific information becomes available.

- Housing and Cage Space Allowance
- Beak Trimming
- Molting
- Transportation and Handling

INDEPENDENT SCIENTIFIC ADVISORY COMMITTEE

Recognizing the importance of welfare standards for egg laying hens, UEP first reviewed its welfare practices over 20 years ago. Since that time, the industry has made dramatic changes to keep pace with evolving science. Most recently, UEP commissioned a Scientific Advisory Committee for Animal Welfare in 1999. This independent committee, comprised of USDA officials, academicians, scientists and humane association members was asked to review the scientific research literature on specific topics relevant to the well being of laying hens and to identify areas where further research was needed. Additionally, the committee was asked to develop recommendations based upon existing science for presentation to the UEP Board of Directors and ultimately to the industry.

To a large degree, existing management and husbandry practices had been researched by land grant colleges and universities and adopted by egg producers. The scientific committee did not conclude that the existing management practices of the egg laying industry were inhumane but that improvements could be made.

The recommendations and guidelines found within UEP's Animal Husbandry Guidelines document and published in October 2000 are based upon those recommendations made by the Scientific Advisory Committee.

A VISUAL PRESENTATION OF GUIDELINES

An employee training video providing a visual of all the recommended guidelines will be provided to all U.S. Egg Producers.

RECOMMENDATIONS AND GUIDELINES

HOUSING AND SPACE ALLOWANCE:

Numerous studies have shown that decreasing space allowance in cages to below a range of 67-86 square inches per hen significantly reduces hen-housed egg production and increases mortality.

Cage space will vary depending on type of cages and birds being housed. For example, space allowance can be at the low end of the range in shallow cages in which small Leghorn strains are housed, but should be at the higher end of the range in deep cages housing larger strains like Brown hens. (Science has shown that additional space may be more stressful as more aggressive tendencies become manifest.)

Housing for chicks, pullets, and hens should be constructed and maintained to provide protection for the birds from environmental extremes and predators. The birds should be managed in a manner that minimizes transmission of disease, infection with parasites, and vermin infestation in accordance with accepted principles for disease prevention. House and cage design must facilitate optimal daily care and inspection of the birds.

Cages should be designed and maintained so as to avoid injury to the birds. Cage, feeder, and waterer construction should take into account proven advantages for bird comfort and health, and facilitate the safe removal of birds.

RECOMMENDATIONS

While most of these recommendations are currently being used or can be implemented rather quickly, the recommendations dealing with cage configuration and size are intended for new construction or to be implemented along the recommended phase-in schedule found later in this document. Variances due to unalterable features of existing equipment will be permitted for the useful life of that equipment.

1. Cage configuration should be such that manure from birds in upper cage levels does not drop directly on birds in lower level cages.
2. All hens should be able to stand comfortably upright in their cage. The slope of the cage floor should not exceed 8 degrees.
3. Space allowance should be in the range of 67 to 86 square inches of usable space per bird to optimize hen welfare.
4. Feeder space should be sufficient to allow all birds to eat at the same time.

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5. Chicks, pullets and hens should have continuous access to clean drinking water. However, water may be shut off temporarily in preparation for administration of vaccines or medication in the water. The manufacturer's guidelines for the number and placement of drinkers should be consulted, but general recommendations for watering space for layers are as follows:

<u>Age</u>	<u>Linear trough space/bird</u>	<u>Maximum number of birds Per cup or nipple</u>
0-6 wks.	0.6 inches	20
6-18 wks.	0.8 inches	15
older than 18 wks.	1.0 inches	12

Perimeter space needed for round waterers can be determined by multiplying linear trough space by .8.

6. Water pressure must be regulated carefully with some automatic devices and watering cups. Manufacturer recommendations should be used initially and adjusted if necessary to obtain optimal results. Automatic watering devices may require frequent inspection to avoid malfunctions.
7. Poultry houses should be designed to provide a continuous flow of fresh air for every bird. Sufficient ventilation to minimize levels of carbon monoxide, ammonia, hydrogen sulfide and dust is critically important. Ammonia concentration to which the birds are exposed should ideally be less than 25 ppm and should not exceed 50 ppm for a 24 hour TWA (Time-Weighted-Ave.), but temporary excesses should not adversely affect bird health.
8. Lights should be provided to allow effective inspection of all birds. Inspection of the birds should be conducted daily. Light intensity should be 0.5 to 1-foot candle for all birds at feeding levels during production.
9. Birds should not be exposed to disturbing noises or visual stimuli or strong vibrations, whether originating inside or outside the house. Visitors should not be allowed without proper supervision, because they could cause birds to panic and injure themselves in their rush to escape and for biosecurity reasons. Wild birds, pets, and other animals should, likewise, not be allowed in the poultry house.
10. Environmental conditions within the house should allow the birds to maintain their normal body temperature without difficulty.
11. Nutritionally adequate fresh feed must be easily accessible to all birds and care shall be taken at each change of the systems to insure that the birds find the feed.
12. Stand-by generators with alarm systems are a "must" in highly mechanized layer and pullet houses. Such systems should be sufficient to supply emergency power for lighting, watering, ventilation, feeding, egg collection, and manure removal.

BEAK TRIMMING

Scientific evidence suggest that primary breeders of egg laying strains can select a more docile bird and minimize the need to beak trim, from a behavioral point of view. Using genetic stocks that require little or no beak trimming is the most desirable approach. However, under certain management systems (e.g., exposure to high intensity natural lighting) and with some genetic stocks, beak trimming is recommended. Therapeutic beak trimming is recommended at any age if an outbreak of cannibalism occurs.

Advantages of beak trimming may include reduced pecking, reduced feather pulling, reduced cannibalism, better feather condition, less fearfulness, less nervousness, less chronic stress, decreased mortality.

Bird behavior, production, physiological measurements of stress, as well as neural transmission and anatomy of the beak have been used as criteria to determine if beak trimming compromises animal well-being. In addition, the welfare of those birds that are pecked by beak-intact birds has been evaluated. Welfare disadvantages are applicable to individual birds whose beaks are trimmed and may include the bird's ability to feed itself following beak trimming, short-term pain, perhaps chronic pain, and acute stress.

UEP recommends *beak trimming* only when necessary to prevent feather pecking and cannibalism and only when carried out by properly trained personnel monitored regularly for quality control.

RECOMMENDATIONS FOR SINGLE - TRIM PROGRAM

1. The beaks of chicks should be trimmed at 10 days of age or younger with a precision automated cam activated beak trimmer with a heated blade.
2. Crews responsible for beak trimming must be trained and monitored for quality control.
3. Approximately 2 days before and 2 to 3 days after beak trimming, vitamin K (5 mg/liter or 20 mg/gallon) and sometimes Vitamin C (20 mg/liter or 80 mg/gal) should be added to the water to facilitate clotting, to alleviate stress, and reduce dehydration.
4. The levels of feed and water should be increased until beaks are healed.
5. Recently beak trimmed chicks may have difficulty activating watering devices; therefore, producers should consider incorporating management procedures to facilitate the bird's ability to drink. Examples include lowering water pressure or manually triggering cup waterers for several days following trimming.

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6. To minimize weight loss, birds can be fed a prestarter, starter, or high-density stress diet for about 1 week following beak trimming.
 7. The blade and the guide holes of the beak trimmer should be cleaned regularly.

RECOMMENDATIONS FOR A SECOND - TRIM PROGRAM

If the trimmed beak grows back, a second trim may be needed. A second trimming is more permanent in that the beak does not grow back as easily. Some strains of layers, especially under conditions of high light intensity, may need to be subjected to a second trim when pullets are 5 to 8 weeks of age.

Beak trimming is not recommended after 8 weeks of age.

When avoidable, birds should not be subjected to stressful conditions such as handling, moving, vaccination, etc., for two weeks following beak trimming.

MOLTING

Consumer concerns about agricultural production practices and the impact of these practices on the welfare of the animal have caused producers to reconsider the use of induced molting in laying strains of birds. Welfare problems reside with the methods used to induce the molt, namely feed restriction or deprivation, rather than with molting per se.

Molting is currently an integral part of the replacement programs used on egg farms to extend the life of the hen and rejuvenate the reproductive cycle of the bird. Therefore, the molting period allows the flock a period of rest at the end of a period of egg production.

Molting results in the use of approximately 50% fewer hens than would be needed to supply the consuming market with eggs if induced molting was not allowed. This in turn results in significantly fewer spent hens that have to be handled, transported, and slaughtered.

A fast of 4 to 5 days will usually cause a flock to cease egg production. Longer fasts will usually give superior results, but extreme care must be taken to monitor body weight loss and mortality daily during the fast, if such programs are to be used.

MOLTING RECOMMENDATIONS

Producers and researchers are encouraged to work together to develop alternatives to feed withdrawal for molting. These alternatives should include the following:

1. The hens should be able to consume nutritionally adequate and palatable feed.
2. Body weight loss should be sufficient so as not to compromise hen welfare during the postmolt period.
3. Mortality during the molt should not substantially exceed normal flock mortality.

However, until such time that these alternatives are available, the shortest period of feed withdrawal possible should be used to accomplish the goal of rejuvenating the hen's egg production capabilities and overall welfare.

Insufficient research has been conducted to develop a conclusive decision on the impact molting may contribute to food safety risks. Until such time that scientific research has provided the

needed answers, the following recommendation is made:

- All egg producers and processors should implement the UEP “5-Star” Total Quality Assurance Food Safety Program or one of the many excellent state programs.

Specific recommendations for conducting a molt using feed withdrawal or restrictions are as follows:

1. Cull birds should be removed from the flock before molting.
2. Flocks should be molted in such a way to minimize mortality and harm to the flock.
3. Mortality and body weight losses must be monitored daily during the molt period.
4. Feed should be returned when body weights reach no less than 70% of the starting weights.
5. Mortality should not exceed 1.2% during the feed withdrawal period.
6. Water must be available at all times.
7. Reduce light period to 8 hours in closed houses or to natural day length in open houses for the duration of the rest period. When the flock is placed back on a layer diet, lights should be returned to the normal layer program.

HANDLING, TRANSPORTATION AND SLAUGHTER

Leghorn-type hens tend to have relatively weak bones by the end of lay. As a result of this, there is a high risk of bone fractures occurring when they are handled prior to slaughter. Catching appears to be the primary source of injury prior to arrival at the slaughter plant.

Bones become weak when structural bone is broken down to obtain calcium for eggshell formation. It is important that all hens are able to consume sufficient calcium and phosphorus to support eggshell formation without loss of structural bone.

Prolonged fasting prior to slaughter results in bone loss, an increased risk of bone breakage during catching and reduced ability to withstand the rigors of transportation. These factors can lead to high rates of antemortem and postmortem condemnation.

When hens must be euthanized on the farm, cervical dislocation is an accepted method when performed by skilled workers. Carbon dioxide can be used to euthanize large numbers of hens in modified atmosphere killing (MAK) carts.

RECOMMENDATIONS FOR HANDLING, TRANSPORTATION AND SLAUGHTER

1. All members of a catching crew must be knowledgeable and skillful in handling hens with care. Crews must be supervised. Training of catchers could substantially reduce the risk of bone breakage and other injuries. Escape and dropping of hens must be minimized.
2. Hens should be handled so as to minimize bone breakage or injury. Good handling methods can include:
 - Removing hens from the cage one or two at a time by grasping both legs at the hock.
 - Supporting the hen's breast as she is lifted over the feed trough.
 - Handling hens in an upright posture.
3. Use the lowest light level possible without impinging on worker safety.

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4. Minimize the amount of handling by using carts for flock removal from the house and transport to the processing plant. (Do not use hanging carts.)
 5. The size of cage doors, crate doors and panels on trucks should be large enough to permit easy passage of hens to avoid bruising and injury.
 6. Hens should be loaded only into clean, well-maintained transport containers and vehicles. Hens should be loaded into each transport container at a density appropriate for the weather conditions. The doors of transport containers must be closed securely so that hens do not escape in transit.
 7. To help reduce the risk of bone breakage and health problems resulting in condemnation, in coordination with the processing plant, avoid fasting any hen for more than 24 hours prior to slaughter. Water withdrawal prior to removal of hens from the layer house is not recommended.
 8. Coordination is needed between producers, catchers, truckers and processors to minimize the time between catching and slaughter and to avoid exposure of hens to excessive heat or cold during this period.

EUTHANASIA

When euthanasia of a chick or grown bird is necessary, the industry's best management practices support only those approved methods that are instantaneous and painless.

TIME PERIOD FOR IMPLEMENTATIONS

In regard to the space allowance per hen, the required egg supply to meet the market demand could be disrupted by immediate changes. Therefore a phase-in period is necessary to assure no disruption to the market needs as well as to allow egg producers the opportunity to complete the current production cycle including replacement pullets currently being grown. The house average phase-in schedule shown below should accomplish these goals as well as create a level playing field for both producers and the market place. The square inches of space is based upon using the total cage space within existing houses to arrive at an average space per hen on the date of housing hens at 18 or 20 weeks of age.

Day Old Chicks Hatched After	House in Layer Houses at Square Inches	
	<u>White Leghorn Hen</u>	<u>Brown Egg Layers</u>
April 1, 2002	56 inches	63 inches
October 1, 2003	59 inches	66 inches
April 1, 2005	61 inches	68 inches
October 1, 2006	64 inches	72 inches
April 1, 2008	67 inches	76 inches

The ultimate goal is to meet the minimum cage space per hen as recommended within the Housing and Space Allowance section of these guidelines. Therefore it is recommended that all new houses or remodeled houses be constructed to accommodate minimum standards rather than the house average concept.

The time period for implementation of guidelines for beak trimming, molting, handling and transportation should begin to take place July 1, 2002 for each flock that requires this service thereafter.

COMPLIANCE

AUDIT:

To assure compliance with these Animal Husbandry Guidelines, each company participating in this program will be examined annually by independent auditors, designated and approved by UEP. Audit standards, procedures, inspection forms and a point scoring system developed by UEP will be used for all compliance audits, thereby assuring consistency for all participants. Results of these audits will be provided directly to UEP, the participating company and any of its customers requesting the information.

During the phase-in of the compliance program from April 1, 2002 through September 30, 2003, a minimum score of 70% on the audit must be attained in order for the participant to be certified as compliant with the Animal Husbandry Guidelines. Audits initiated on or after October 1, 2003 will require a minimum score of 85% for continued certification. As a prerequisite to compliance, the participant must satisfy the minimum space requirement provision of the Guidelines. Failure to meet the space allowance guideline will be cause for failure of the audit regardless of the total points achieved. Participants meeting or exceeding the minimum acceptable score and complying with the space requirement provision will be designated as a “*Certified Company*”.

CERTIFICATION:

Until such time that the first audit is conducted, each egg producing company, having filed for an “Application for Certification”, will be provided a provisional certification number. Upon completion of the audit, and a passing grade, the company will be fully certified. To maintain this certification, the company must agree that the auditor will provide directly to UEP a copy of the audit results.

WELAFER SEAL:

To identify eggs in the marketplace as having been produced by “*Certified Companies*” a welfare seal will be developed and made available for use on egg cases, cartons, etc.

MARKET FOR CERTIFIED EGGS:

To assure our customers of the availability of eggs having been produced by “*Certified Companies*” a system will be created whereby eggs may be traded among certified companies and from this trading, a separate market quote for *certified eggs* will be established.



ACKNOWLEDGEMENTS

United Egg Producers wishes to thank:

- ★ American Egg Board (AEB) for their financial support of this project.

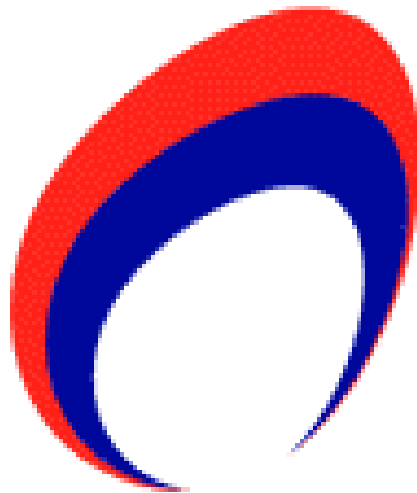
- ★ The independent Scientific Committee members for their professional expertise and research of the scientific literature.

- ★ UEP's Producer Committee members for establishing a set of guidelines for the industry.

- ★ UEP's Board of Directors for their proactive initiative of establishing a Scientific Advisory Committee and ultimately adopting the committees recommendations.

- ★ Food Marketing Institute (FMI) and National Council of Chain Restaurants (NCCR) for reviewing these guidelines.





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