



INCLUDES UEP CERTIFIED  
2017 CAGE-FREE HEN  
SPACE REQUIREMENTS



## 2024 CAGE-FREE HOUSING

ANIMAL WELFARE GUIDELINES  
FOR U.S. EGG LAYING FLOCKS





## **UEP CERTIFIED 2017 CAGE-FREE HEN HOUSING SPACE REQUIREMENTS**

The cage-free hen floor space guidelines within this document meet the standards of the 2017 edition of the United Egg Producers' Animal Husbandry Guidelines for U.S. Egg-Laying Flocks: Guidelines for Cage-Free Housing.

UEP and its Scientific Advisory Committee regularly review the UEP Certified Program requirements and implement updates, per scientific committee recommendations, to improve the welfare of laying hens. Other guidelines in this document have been added or improved, but the hen floor space requirements are consistent with the 2017 edition.

The UEP Scientific Advisory Committee (SAC) for Animal Welfare develops the content of the UEP Certified Guidelines (Guidelines), with support from the Producer Committee for Animal Welfare, the UEP Board, and external consultants as necessary. The SAC is required to conduct a comprehensive review and update of the Guidelines at least every seven years, although more frequent major revisions are possible based on substantive information gleaned from new research and experience with practical implementation. To ensure the Guidelines remain current, interim revisions reflecting substantive updates but less extensive than a significant revision are also allowed.

Copyright 2023 United Egg Producers. All Rights Reserved.

# CONTENTS

---

UEP’s Mission .....	5
Independent Scientific Advisory Committee .....	5
Today .....	6
The UEP Certified Cage-Free Program.....	7
UEP Certified On-farm Training.....	7
UEP Certified Compliance .....	7
<i>Certification</i> .....	7
<i>Auditing</i> .....	7
United Egg Producers Certified Logo .....	8
Marketing of United Egg Producers Certified Eggs .....	9
Returning to the UEP Certified Program .....	9
Additional Requirements for UEP Certified Companies.....	9
<b>GUIDELINES FOR CAGE-FREE PRODUCTION</b> .....	<b>10</b>
Reporting Willful Acts of Animal Abuse or Neglect .....	11
Emergency Preparedness and Response Plan, Fire Mitigation, and Depopulation .....	11
<i>Guidelines for Emergency Preparedness and Response Plan</i> .....	12
Health and Biosecurity.....	13
<i>Guidelines for Health Management</i> .....	14
<i>Guidelines for Biosecurity</i> .....	14
Euthanasia and End-of-Lay Culling .....	15
<i>Guidelines for Euthanasia and End-of-Lay Culling</i> .....	15
Handling, Catching, and Transport.....	16
<i>Guidelines for Handling, Catching, and Transport</i> .....	17
<b>GUIDELINES FOR PULLET PRODUCTION</b> .....	<b>18</b>
Pullets Destined for Production in Cage-free Housing.....	18
<i>Guidelines for Pullet Housing (effective January 1, 2026)</i> .....	18
Lighting in Pullet Barns .....	19
<i>Guidelines for Lighting in Pullet Barns</i> .....	19
Beak Trimming or Beak Treatment .....	19
<i>Guidelines for Beak Trimming or Beak Treatment</i> .....	20
<b>GUIDELINES FOR LAYER PRODUCTION</b> .....	<b>21</b>

# CONTENTS CONT.

---

<b>Floor Space Per Hen</b> .....	<b>21</b>
<i>Guidelines for Indoor Floor Space</i> .....	21
<b>Feed and Water</b> .....	<b>22</b>
<i>Guidelines for Feed</i> .....	22
<i>Guidelines for Water</i> .....	22
<b>Perches</b> .....	<b>23</b>
<i>Guidelines for Perches</i> .....	23
<b>Litter</b> .....	<b>24</b>
<i>Guidelines for Litter</i> .....	24
<b>Nest Space</b> .....	<b>25</b>
<i>Guidelines for Nest Space</i> .....	25
<b>Environmental: Air Quality, Temperature, and Lighting</b> .....	<b>26</b>
<i>Guidelines for Air Quality and Temperature</i> .....	26
<i>Guidelines for Lighting</i> .....	27
<b>Molting</b> .....	<b>27</b>
<i>Guidelines for Molting</i> .....	27
<b>Multi-Tier Systems</b> .....	<b>28</b>
<i>Guidelines for Multi-Tier Systems</i> .....	28
<b>Incomplete and Backfilling Flocks</b> .....	<b>28</b>
<b>Acknowledgments</b> .....	<b>29</b>

# UEP MISSION

---

U.S. egg farmers are committed to providing excellent care for their hens at all times, no matter which type of housing system is utilized on their farm. Recognizing the worldwide concern for animal welfare, United Egg Producers (UEP) developed the first industry animal welfare guidelines in the early 1980s.

With fewer people having an understanding or relationship with farming and an ongoing public discussion about the welfare of laying hens, United Egg Producers determined a need for an independent review of egg production practices. UEP's mission was to establish animal welfare guidelines based on science, which can be implemented voluntarily by all egg producers regardless of the egg production system.

To achieve an independent assessment of U.S. egg farming, UEP established a mission, which included: (1) A scientific approach to animal welfare guidelines; (2) guidelines driven by the industry rather than government mandates or legislation; (3) guidelines that created a level playing field for both egg farmers and our customers.

# INDEPENDENT SCIENTIFIC ADVISORY COMMITTEE

---

UEP commissioned an independent Scientific Advisory Committee for Animal Welfare in 1999. Dr. Jeffrey Armstrong, then Dean of Agriculture and Natural Resources at Michigan State University, agreed to form a scientific committee of which he could select all the members. These members were committed to layer welfare and provided their time and expertise without financial composition. Dr. Armstrong assembled his committee, comprised of government officials, academics, and scientists.

In the fall of 2000, Dr. Armstrong's committee presented their recommendations for major and costly animal welfare changes. The Scientific Advisory Committee took no responsibility for mandating these recommendations, recognizing that producers must voluntarily accept and implement them. This historic step led to the development of a sensible working model for developing and implementing science-based guidelines to improve the welfare of laying hens managed in conventional cage systems in 2002. These guidelines were the first standards of the UEP Certified Program. UEP's Board of Directors approved the recommendations and embarked on a plan to put those guidelines into a program that egg farmers could voluntarily implement. UEP launched the UEP Certified Cage-Free program in 2006 following a similar process.



# TODAY

---

Today, more than 90% of all eggs produced in the United States are produced under the UEP Certified Program. Any egg farmer desiring to be recognized and market eggs as UEP Certified must implement the scientific guidelines on 100% of their flocks. An annual auditing program ensures each farmer's compliance with the guidelines.

Audits are conducted by independent auditors, also known as third-party audits. These independent groups, USDA's Agricultural Marketing Service, Validus Services (a division of Where Food Comes From), and FACTA, conduct the audits based on procedures developed by them to help ensure the audit integrity.

The UEP Certified program is now recognized as a worldwide leader among all animal agriculture in establishing science-based guidelines. The International Egg Commission (an organization representing almost every major egg-producing country in the world) has endorsed the UEP Certified guidelines as the model for creating guidelines for egg-laying hens.

UEP's independent **Scientific Advisory Committee** (SAC) continues to assess the latest layer welfare science and ensure the Guidelines remain up-to-date to provide the best hen welfare. Members of the SAC are recognized experts in animal welfare and hen behavior. UEP's Producer Committee for Animal Welfare works with the SAC and also provides guidance and leadership for the program. The SAC serves as a sounding board, answering questions and providing expertise for continuous improvement of the program.

# THE UEP CERTIFIED CAGE-FREE PROGRAM

---

The recommendations and guidelines found within this document have been accepted by the UEP Producer Committee for Animal Welfare, using the recommendations from the Scientific Advisory Committee as a blueprint.

This document provides recommendations for best management practices for cage-free egg production. The guidelines are updated as new scientific information becomes available. For additional information please see [UEPCertifiedCageFree.com](https://UEPCertifiedCageFree.com).

## UEP CERTIFIED ON-FARM TRAINING

UEP Certified considers employee training a vital part of assuring the welfare of laying hens. To help and enable this critical component, UEP Certified provides a visual presentation, both in English and Spanish, to all UEP Certified companies on proper handling, care, and many other aspects critical to hen welfare. These training materials help ensure that personnel involved in bird husbandry are properly trained and qualified to perform their jobs. Training video updates are made periodically as needed. UEP Certified also requires additional training to be developed and conducted by individual UEP Certified Program Participants. Recognizing the critical role of employee training for animal welfare, a key component of the UEP Certified audit is verifying that employees have received essential training.

## UEP CERTIFIED COMPLIANCE

### CERTIFICATION

A Program Participant desiring to be recognized as “UEP Certified” must file an “Application for Certification,” successfully pass an animal welfare audit, and pay the annual administrative fee and any other required fees. Upon completing a successful animal welfare audit, the Program Participant will be fully certified and issued an annual UEP Certified Certificate. To maintain this certification, the Program Participant must continue to meet all guidelines and pass future annual audits.

### AUDITING

To assure compliance with the Animal Husbandry Guidelines, each UEP Certified Program Participant will be audited every calendar year by independent auditors ([FACTA](#), [USDA/AMS](#), [Validus](#)), designated and approved by UEP Certified. Audit guidelines, audit score sheets, and a point scoring system have been developed by the auditors and will be used for all compliance audits, ensuring consistency for all participants. The auditing firms will provide the Program Participant with a seven-day advanced notice of when the audit will be conducted. Audit results are provided directly to UEP and the UEP Certified Program Participant. Copies of the audits may not be shared by UEP Certified with anyone else without written approval by the UEP Certified Program Participant. Customers seeking this information should reach out directly to the Program Participant.

Program Participants must receive 90% on a UEP Certified audit for a passing rate. Failure to meet the space allowance guidelines, evidence of backfilling cages, commingling certified and non-certified eggs, the use of a feed withdrawal molt, or willful acts of abuse or neglect will be cause for failure of the audit – regardless of the total points achieved.

A Program Participant failing the audit will have 30 days for corrective actions followed by a re-audit. The Program Participant will be required to call the auditor to schedule the re-audit at their expense. Re-audits will focus only on the areas where points were lost in the initial or prior audits. Failure to pass the re-audit results in the formation of a committee composed of a UEP staff member and two other appropriate non-producers, which will determine the Program Participant's UEP Certified status and/or corrective action to regain UEP Certified status.

### **UNITED EGG PRODUCERS CERTIFIED LOGO**

A logo has been developed and made available for use on egg packaging to identify eggs in the marketplace as having been produced by UEP Certified companies.

A certified Program Participant may use the UEP Certified logo only on those eggs or egg products produced by UEP Certified Participants. The Program Participant may authorize the use of the logo by their retail customer only for those eggs produced from UEP Certified companies in good standing.

All egg packaging displaying the UEP Certified Cage-free logo must display the website address [www.uepcertified.com](http://www.uepcertified.com) or [www.uepcertifiedcagefree.com](http://www.uepcertifiedcagefree.com).





## MARKETING OF UNITED EGG PRODUCERS CERTIFIED EGGS

Only UEP Certified companies (or non-certified marketers that have signed a license agreement and are meeting the requirements of the agreement) are authorized to sell “UEP Certified” eggs or egg products.

No one owning egg production flocks may market eggs as “UEP Certified” unless they are a UEP Certified Program Participant. This policy also applies to egg producers purchasing eggs from UEP Certified companies.

A “License Agreement” is available for companies that do not own layers in company-owned, contract farms, or affiliate facilities. An annual audit will be conducted of companies using the “License Agreement.” Please see the *Procedure for Conducting the United Egg Producers Audits of a Non-Certified Company for the Marketing of United Egg Producers Certified Eggs* (commonly referred to as UEP Certified Egg Marketers Procedures) for additional information on the non-certified marketer program.

## RETURNING TO THE UEP CERTIFIED PROGRAM

Any Program Participant that was once UEP Certified and has dropped off the program may return by meeting all guidelines, successfully completing an animal welfare audit, and paying required program fees.

## ADDITIONAL REQUIREMENTS FOR UEP CERTIFIED COMPANIES

UEP’s Board of Directors has established additional requirements for companies to maintain or apply for UEP Certification.

A UEP Certified Program Participant must implement the animal husbandry guidelines on 100% of the company-owned, contracted, or affiliate facilities (site or location) regardless of where or how eggs may be marketed. The term “affiliate” for this purpose will mean that the affiliate must be subject to the control of the party with which it is affiliated, typically as a result of interlocking or related ownership or corporate control. For example, two corporations owned by the same group of shareholders – even if the corporations are not in a parent-subsidiary relationship – would be affiliates. Business entities that share only a contractual relationship (vendor and customer, for example) would not be within the meaning of the term affiliate as it is commonly understood. Supplier-customer relationships would not be affiliates for the purpose of the 100% rule.

- Any new company wanting to become a UEP Certified Program Participant must pass animal welfare audits on 100% of the facilities and barns, demonstrating compliance with the UEP Certified requirements. Applicants are held to the same standards as existing Program Participants. They must not have any major non-conformances and must achieve a score of  $\geq 90\%$  to achieve certification. A company not in compliance at the time of application must adjust to meet compliance prior to certification. Eggs may not be marketed as “UEP Certified” until the Program Participant has met the 100% rule for all company-owned, contract, and affiliate facilities. During this transition, a Non-Certified License Agreement will be authorized for the marketing of “UEP Certified” eggs purchased from other UEP Certified companies.
- A certified Program Participant must file Quarterly Compliance Reports with UEP Certified.
- A certified Program Participant or any marketer of “UEP Certified Eggs” may not commingle and sell as certified any eggs or egg products purchased from a non-certified producer.
- A certified Program Participant or any marketer of “UEP Certified eggs” may not pack eggs from cage production into packages marketed as cage-free or organic.
- Every UEP Certified Program Participant and those making an application must pay all applicable fees, including the annual administrative and public relations fees as established by the UEP Board of Directors.
- A certified Program Participant must comply with any additional requirements as determined by the UEP Board of Directors.



# GUIDELINES FOR CAGE-FREE PRODUCTION

---

A variety of production systems and management programs can be used to raise egg-laying hens humanely. All systems currently available can present challenges to animal welfare if good management practices are not employed. Understanding the scientific basis for hen welfare and identifying system features that promote good welfare are important to all hen housing systems. The UEP Certified Cage-Free guidelines are science-based recommendations for keeping laying hens humanely in cage-free systems. These guidelines address only indoor housing components. Please note that hens producing UEP Certified eggs must adhere to these minimum standards, but producers may incorporate additional components, including systems that accommodate outdoor housing.

Compared with research on cage systems, relatively little research has been conducted on the welfare of modern hen strains in the wide variety of cage-free systems used in the United States today. Many factors can affect bird welfare in cage-free systems. Whereas new cage-free equipment is appearing on the market at a rapid rate, much of the published research on cage-free space allowances dates back to a half-century ago or reflects small pen experiments. Nevertheless, reasonable standards are necessary, and these must be based on the best knowledge currently available. Future adjustments will be needed in light of new research findings.

The guidelines for cage-free production have been established for UEP Certified companies with all or at least some production in cage-free systems. Compliance with these guidelines is required for a UEP Certified Program Participant with cage-free production.

For the production of cage-free eggs, UEP guidelines are provided for all cage-free systems, including 1) multi-tiered aviaries with a litter floor and slatted-floor platforms over manure-removal belts, 2) partially slatted systems with a litter area and raised slatted-floor area through which manure drops into a storage pit below, and 3) single-level, all-litter floor systems, 4) all other types of cage-free housing systems adhering to the minimum requirements identified in these Guidelines.

## REPORTING WILLFUL ACTS OF ANIMAL ABUSE OR NEGLECT

It is the responsibility of every employee to continuously watch for employees or other persons who may be engaging in animal abuse or neglect of the birds. The Program Participant must have an established process for reporting animal abuse. A method of anonymous reporting is encouraged. A Program Participant must have zero tolerance for intentional abuse or neglect of any animal under its care. Anyone who is witnessed or suspected of doing so must be reported immediately via the Program Participant's established reporting system. The report should include the person's name, the location, and the time of the incident. The failure of an employee to report cases of animal abuse or neglect may result in that employee's termination of employment.

## EMERGENCY PREPAREDNESS AND RESPONSE PLAN, FIRE MITIGATION, AND DEPOPULATION

A comprehensive Emergency Preparedness and Response Plan (Emergency Plan) is one of the most critical aspects of emergency preparedness. Update the Emergency Plan annually or more frequently if barns, or other structures, are built or renovated or if there is a significant change to operations. The Emergency Plan should be available on-site and off-site, allowing access by key employees regardless of their location. Develop procedures to notify employees on-site and off-site in case of an emergency. Include a call list with the names and contact information in order of priority.

The Emergency Plan must include a comprehensive depopulation plan. Depopulation refers to the rapid destruction of a flock in response to urgent circumstances, with as much consideration given to the welfare of the animals as feasible. Depopulation is not the same as end-of-lay-culling or euthanasia. Please see the [Euthanasia and End of Lay Culling](#) section for requirements and guidance related to these procedures. Depopulation methods are only used in times of emergency and based on the need for a rapid response, usually to prevent further animal suffering, eliminate a public health risk or other human hazards, and should be balanced with the most humane method of death possible under the given scenario. Depopulation methods must follow the latest guidance of the American Veterinary Medical Association, the American Association of Avian Pathologists, state regulatory agencies, and/or the USDA.

Farms should schedule regular meetings with the local fire department to educate responders about farm operations. Provide a list of buildings with layouts, working hours, the number of employees present by time frame, and housing systems. Review the plan and provide updates on all facilities. These discussions are an excellent opportunity to get expert guidance on fire prevention and mitigation.

Buildings should be properly designed and maintained to minimize the risk of fires. Companies should select materials that will reduce the risk of fire and be well-adapted to a poultry environment. Fires often spread from one building to the next through the air, and the distance between structures is one of the most important factors in preventing the spread of a fire. Generally, for barns that hold under 100,000 birds, 50 feet distance may be sufficient. The distance between layer barns with a capacity of 100,000 birds or more should be a minimum of 75 feet.

The leading cause of layer barn fires is the electrical system, followed by heaters, human error, and spontaneous combustion. Due to the high incidence of electrical fires, consult a qualified electrician on all electrical components. Frequent inspection and upkeep of the electrical system is critical. Conduct regular walk-throughs, with particular attention to electrical components, to look for exposed wiring, cracked conduits, missing breakers, and other causes of flashpoints. Have a qualified electrician review electrical components annually. Farms should establish breaker trip procedures and tracking. Include a policy that allows one reset per breaker. If a second trip occurs, consult a certified electrician for proper troubleshooting of the circuits. Farms should have a one-line diagram of the electrical system to help expedite repairs and assist in the evaluation of the electrical system, including generator connections.

Farms should regularly monitor and control dust accumulation throughout layer barns, with particular focus on electrical rooms, around electrical panels, and near motors. Routine cleaning of motors with low-pressure air will reduce dust build-up and provide adequate airflow. Motors should be cleaned externally, ensuring proper heat dissipation through the casing and internally to ensure proper airflow and heat transfer. Annually, farms should remove electrical panel covers to inspect and clean using a vacuum.

Follow all OSHA requirements and established safety protocols to ensure human safety. Never use an electrical room for storage and evaluate dry room storage regularly. Keep all ventilation fans clean with regular cleaning schedules to minimize dust and feather accumulation on the ventilation fans and motors. Scanning with an infrared temperature-sensing camera can provide preventative and predictive data for electrical and mechanical items. Establish a baseline temperature to reference in future scans. Have all motors, bearings, and other potential heat sources scanned by a certified party every year. More frequent internal scanning may be recommended depending on criticality. Open and assess every electrical panel. During any electrical work, including infrared inspections, follow the farm's established safety protocols to ensure human safety. Heaters are the second most common contributor to layer barn fires. Regular inspection and maintenance are critical. At a minimum, perform a yearly inspection and cleaning of heaters.

See the [Fire Prevention and Mitigation: On Farm In the Egg Industry](#) report for additional details.

### ***Guidelines for Emergency Preparedness and Response Plan***

- 1. A written Emergency Preparedness and Response Plan must be readily available, easily identified, and updated. The plan must include an internal communication plan with emergency contacts, a comprehensive depopulation plan, a farm emergency map, the location of primary and secondary water sources to extinguish a fire, and a description of employee fire safety training.*
- 2. Employees must receive annual fire safety training in addition to initial training upon hire.*
- 3. Fire extinguishers must be readily available, and an annual inspection and servicing program must be in place to help ensure their function.*
- 4. Combustible materials must be kept away from ignition sources.*
- 5. Monthly walk-throughs must be conducted, with particular attention given to electrical components, such as looking for exposed wiring, cracked conduits, missing breakers, and other potential causes of flashpoints.*
- 6. All ventilation fans must be kept clean, and there must be regular cleaning schedules to minimize dust and feather accumulation on ventilation fans and motors.*
- 7. In layer houses that require a mechanized supply of critical resources, including ventilation, lighting, water, and/or feed, stand-by generators with alarm systems must be provided and tested regularly. Such systems should be sufficient to supply emergency power for lighting, watering, ventilation and feeding.*
- 8. There must be a yearly inspection and cleaning of all heaters.*

## HEALTH AND BIOSECURITY

Maintaining health and quickly responding to health issues are some of the most important aspects of hen welfare. An effective health management plan helps ensure good hen welfare by providing a strategy for disease prevention, rapid diagnosis, and effective control methods. The focus of the health management plan should be on prevention. The health management plan should include the following:

- Procedures and records of vaccinations
- Procedures and records of treatment
- Procedures for controlling internal and external parasites
- Protocols for recording and monitoring daily feed and water intake
- Procedures for observation of all birds for injury, signs of disease, and changes in flock behavior (e.g., feed and water intake)
- Procedures for managing sick and injured birds
- Procedures for identifying treated birds and records indicating treatment type, dates of treatment, route of administration, and quantities of medications used
- Procedures for euthanizing birds, including at the end of lay and timely euthanasia criteria
- Tolerance levels of flock performance
- Investigating causes of morbidity and mortality
- Targets of other aspects of flock health

Monitoring the flock is a crucial component for the early identification of health issues and ensuring appropriate responses, ultimately helping to quickly mitigate health issues. Barn walks must be conducted at least daily. During these walks, effort should be made to visually assess the health and welfare of all birds in the barn.

Veterinarians play a critical role in helping producers attain bird health objectives. Establishing and maintaining a veterinarian-client-patient relationship (VCPR) helps ensure hen health and that all federal regulations regarding treatments and preventions are followed. A VCPR means that a veterinarian has assumed responsibility for making medical judgments regarding the health of the animal and the need for medical treatment, and the producer has agreed to follow the veterinarian's instructions. VCPR definitions and guidance vary by state and should be implemented as required within a state. Such a relationship can only exist if the veterinarian has sufficient knowledge of the animals to make a preliminary diagnosis and is personally acquainted with the keeping and care of the birds by examination of the birds and/or by medically appropriate and timely visits to the premises where the birds are kept.

Appropriate care and support for all compromised birds should be provided; this may include, but is not limited to, segregating them from uncompromised birds, placing them in hospital areas, ensuring access to water & feed, and/or euthanasia. If a compromised bird is to be moved, an appropriate technique should be utilized to minimize the distress and risk of additional injury.

A compromised bird that cannot reach feed, water, or proper shelter, must be euthanized or provided with appropriate health treatments based on the guidance of a licensed veterinarian. These birds should also not be placed or allowed to remain in locations where they may be stepped on by people or piled on by other birds. If antibiotics are utilized, their use must be judicious and responsible in accordance with policies established by the AVMA and FDA. [[AVMA](#); [FDA](#)].

If hospital areas are utilized, they should allow for increased and easy monitoring of compromised birds, segregation from uncompromised birds, more convenient access to feed and water, medical treatment if appropriate, and, if needed, additional mitigation for environmental factors.

The use of hormones to increase production is prohibited by FDA, and hormones must not be administered to laying hens for this purpose.

## **Guidelines for Health Management**

- 1. A written bird health plan must be available and reviewed by a veterinarian annually. The plan must include tolerance levels for overall flock performance and tracking of the causes of morbidity and mortality when known.*
- 2. The site must have a valid Veterinarian-Client-Patient Relationship (VCPR) demonstrating that the producer and veterinarian work together to ensure the health of the birds on-site.*
- 3. Flock performance parameters must be regularly and continuously monitored for indicators of poor health. If flock performance parameters fall below a critical set limit, the flock veterinarian or properly trained personnel must be informed and action items identified in the bird health plan, or appropriate to the identified situation, activated.*
- 4. Key flock health indicators must be actively monitored, recorded, and tracked, including mortality, culls, morbidity, and injuries. If barn level parameters rise above a critical set limit, the flock veterinarian or properly trained personnel must be informed and action items identified in the bird health plan, or appropriate to the identified situation, activated.*
- 5. Barns must be kept in good repair, and all areas to which the birds have access must be kept free of materials hazardous to the birds.*
- 6. Flocks must be assessed for health and welfare at least daily. Compromised birds must be identified and euthanized or provided with proper treatment according to established protocols.*
- 7. Birds should not be exposed to disturbing noises, noxious stimuli, or strong vibrations. All caretaking activities must be conducted with slow, deliberate movements to avoid birds “piling” in corners or around equipment.*

Any employee who observes anything that may indicate a bird or flock is or may be subject to contamination should notify management. Possible contamination can occur when an employee is exposed to any other type of fowl outside the workplace, including keeping pet birds, maintaining a backyard flock of chickens, or hunting birds. Generally, these practices are not allowed per individual company policies and should be reported if known. Property trespassers pose a significant risk of flock contamination. The potential damages from contamination or cross-contamination can be disastrous for the birds, and it is critical that all employees be aware of possible contamination or cross-contamination.

## **Guidelines for Biosecurity**

- 8. Each Program Participant must have a biosecurity plan that includes the following requirements:*
  - a. Only necessary personnel are allowed in poultry buildings. If it is necessary to enter more than one building, personnel should move from the youngest to the oldest birds and from the healthiest to the least healthy birds.*
  - b. Access to the property by visitors is restricted. Visitors must follow the farm’s biosecurity practices, which must include at least basic practices such as protective clothing, utilization of personal protective equipment (PPE), and supervision when in the facility.*
  - c. Facilities practice pest, rodent, small animal, wild bird, insect, and predator control.*
- 9. Poultry barns must be cleaned following each flock.*

## EUTHANASIA AND END-OF-LAY CULLING

It is the producer's responsibility to ensure that the euthanasia of sick or injured birds during the production cycle, as well as the culling of end-of-lay hens, are carried out in a humane manner and that workers treat the birds with respect. Only methods that cause rapid death or loss of consciousness and that are approved by the American Veterinary Medical Association (AVMA) for poultry are acceptable, and workers must be properly trained in the use of these methods.

AVMA-approved methods for pullets and hens include cervical dislocation, non-penetrating captive bolt, electrocution, and inhaled gas (for example, carbon dioxide). The most recent addition of the AVMA Guidelines for Euthanasia of Animals provides additional information about the proper use of these methods to ensure that pain is minimized and death is rapid: 1) cervical dislocation can be carried out either manually or mechanically but must result in the vertebrae being separated rather than crushed; 2) captive bolt devices must be appropriately designed and configured for bird's size, have sufficient impact energy, and be applied appropriately; 3) inhaled gases must be supplied in purified form and at the required concentrations.

Regardless of the method used, it is important to verify that birds are dead before disposing of them. In addition, when containerized gassing is used, it is important to ensure that all birds in the container are unconscious before additional birds are added to the container. Signs of insensibility and death in poultry include the absence of eye blink or pupil dilation; absence of response to painful stimulus (such as a toe pinch); lack of vocalizations, and lack of neck muscle tension; as well as cessation of heartbeat and respiration

### ***Guidelines for Euthanasia and End-of-Lay Culling***

1. All workers involved in euthanasia and on-farm-culling must receive training and be regularly evaluated for their ability to carry out the method(s) in use on the farm in a skillful, safe, and compassionate manner in accordance with these guidelines. This training must include information about the ability of hens to experience pain and fear, the risk of bone fractures when handling end-of-lay hens, proper use of equipment, methods of identifying unconsciousness and death, worker safety, biosecurity procedures, and proper carcass disposal.
2. Methods must cause rapid death or rapid loss of consciousness lasting until death, or if loss of consciousness occurs more slowly, it must be induced in a manner that does not cause pain or panic. Methods of euthanasia must comply with the most recent edition of the AVMA Guidelines for the Euthanasia of Animals. Methods currently considered acceptable for pullets and laying hens when properly applied include carbon dioxide (or other suitable gases), which can be delivered using a modified atmosphere killing (MAK) cart or similar device, cervical dislocation, non-penetrating captive bolt, and electrocution.
3. Birds must be confirmed to be dead prior to disposal. Any birds found to be still alive must be rapidly euthanized in an acceptable manner.
4. When using containerized gassing (e.g., a modified atmosphere killing [MAK] cart or other receptacle, into which carbon dioxide gas is introduced to kill birds), the farm must follow a written SOP that conforms to the most recent versions of the AVMA Guidelines for the Euthanasia of Animals and AVMA Guidelines for the Depopulation of Animals regarding the proper use of containerized gasses, and that provides information about procedures for ensuring that:
  - Handling and carrying of birds are minimized.
  - Containers are properly precharged or properly charged with gas.
  - The vaporized gas inside the container is evenly distributed and in a concentration that is high enough to ensure not only rapid unconsciousness of all birds but that the birds do not revive prior to death.
  - All birds in the container are unconscious before additional birds are added on top of them.

## HANDLING CATCHING, AND TRANSPORT

Pullets and hens may have to be caught and handled for various reasons, including for routine health evaluations, transport between farms, and when being culled or transported off-farm at end-of-lay. Because hens have relatively weak bones by the end of lay due to their structural bone being broken down to obtain calcium for eggshell formation, it is important to handle end-of-lay hens carefully to minimize the potential for fractures. It is also important to provide them with sufficient calcium during the period before catching to minimize further loss of structural bone. Research indicates that catching and crating appear to be the primary sources of injury prior to hens arriving at the slaughter plant.

When possible, pullets and hens should be caught individually and held in a comfortable upright position with both hands. During catching, sudden loud noises and other disturbances alarming to birds should be minimized. If possible, catch birds in cage-free barns in low light intensity, which allows for lower lighting and decreased sharp light transitions. Blue lights promote calmness in chickens, and their use is encouraged during catching. Layer barns should be designed to enable transport vehicles and/or transport containers to be moved close to the locations where birds will be caught or released so that the distance that birds are hand-carried is minimized. Care and planning should be utilized during transport to ensure no free-moving (escaped) hens are run over. Whenever possible, the same containers used to transport live birds on vehicles - such as pullet carts, mobile racks with drawers, or coops - should be used to move live birds from the barn to the transport vehicle, or from the transport vehicle to the barn, rather than carrying birds in and out of the barn by hand. Doorways, loading ramps, and alleys should be designed to accommodate the safe use of pullet carts or other containers.



## ***Guidelines for Handling, Catching, and Transport***

1. Birds must not be abused by being thrown, kicked, crushed, or otherwise mishandled. Escape and dropping of birds must be minimized.
2. Each UEP Certified Company must have an SOP that describes best practices to ensure bird welfare during handling and loading at their facilities, including feed and water removal, handling methods, procedures for ensuring that birds are calm during catching, and procedures for transferring birds from the system into containers if they are to be transported.
3. Catching of pullets and hens must be done in a manner that avoids crowding or piling in corners, which could result in hysteria and suffocation of birds.
4. To minimize the risk of bone breaks and other injuries, all people involved in catching and transport must be trained, knowledgeable, and skillful in handling birds. Crews must be supervised by experienced personnel.
5. When catching birds, use the lowest light level possible that will not impinge on worker safety, or use blue lights that will calm the birds while providing better visibility for catchers.
6. Hanging racks must not be used to move birds.
7. Birds in cage-free systems must either be caught and held in a comfortable upright position with both hands, or carried by both legs with no more than 3 birds in each hand. Birds must not be carried solely by a single leg or wing, or by the head, neck, or tail.
8. Birds must be carefully loaded into the transport containers to avoid bone breakage and other injuries. The size of openings such as container doors and panels on trucks must be large enough to permit easy passage of birds.
9. Containers must not be dropped or tipped such that birds pile up against the side.
10. Stocking density must be such that all birds can sit comfortably at the same time.
11. Birds must be loaded only into clean, well-maintained transport containers and vehicles. The doors of the containers must be closed securely so that birds do not escape during loading or transit. Visibly unfit birds must be euthanized rather than loaded for transport.
12. The drivers of transport vehicles must be aware of climate conditions and make necessary adjustments (e.g., to bird density, tarps, and fans during standby) to keep birds thermally comfortable.
13. Catching and transport of end-of-lay hens must be planned so that feed is withdrawn no more than 18 hours prior to the beginning of catching if hens are to be transported, or 24 hours if they are going to be culled on-farm.
14. Water must not be withdrawn prior to catching.



# GUIDELINES FOR PULLET PRODUCTION

## PULLETS DESTINED FOR PRODUCTION IN CAGE-FREE HOUSING

Rearing experience plays a crucial role in ensuring the welfare of laying hens kept in non-cage housing systems because it affects the birds' physical, cognitive, and behavioral development. Pullets need opportunities to develop the skills and strength necessary for successful adaptation to complex layer housing systems. Without the right early experience, hens face considerable risks for injuries and mortality due to the following:

- feather pecking and cannibalism,
- inability to find resources such as food and water,
- fractured keel bones related to falls and collisions, and
- piling and smothering

When started in closed brooding compartments or confined brooding areas, pullets should be provided access to the open aviary by 6 weeks of age. Pullets should be reared with access to raised areas and perches from an early age to become adept at moving up and down in space. Access to perches by 4 weeks of age reduces the risk of eggs being laid on the floor during the laying period.

The use of ramps, steps, or platforms to facilitate vertical movement is recommended. Foraging material should be provided from the day of placement, especially for non-beak-trimmed hens. This could be in the form of litter or chick paper with feed. Interruptions in access to foraging material should be minimized. It is recommended that pullets be raised with the same type of drinker that will be supplied in the layer barn. Breeder guidelines should be followed to reduce the change of pullets laying in the pullet barn. Early lay increases risk for cannibalism and keel bone fracture. Pullets should be transferred to the layer barn before the onset of lay to provide sufficient time for birds to explore the barn and find nests prior to the onset of lay.

### ***Guidelines for Pullet Housing (effective January 1, 2026)***

1. Pullets destined for a cage-free system must be reared in a cage-free system furnished with perches and other elevated structures. Access to elevated structures, such as perches or platforms, must be provided within the first 4 weeks of life.
2. Pullets must be provided access to the floor and all other components of the pullet barn by 6 weeks of age, or by 9 weeks of age in systems that allow the pullets more than 3 feet of vertical movement.

## LIGHTING IN PULLET BARNs

Both the level of illumination and lighting schedule during the brooding and growing periods can have short-term effects on the welfare of the growing bird and long-term welfare effects on the laying hen. Light intensity and the light-dark schedule affect the growth of the eye and the development of the visual system. Additionally, the light environment affects sleep and activity patterns and the ability of birds to see well enough to negotiate a complex environment. Use of an intermittent light schedule (such as 4L:2D cycling) for the first 7-10 days, and/or dark brooders, is recommended.

### **Guidelines for Lighting in Pullet Barns**

1. *Light intensity must be at least 0.5 footcandles (5 lux) in all areas of the barn except for dark brooding spaces.*
2. *A minimum of 4 hours of continuous darkness must be provided in each 24-hour period after 10 days of age.*

## BEAK TRIMMING AND BEAK TREATMENT

Bird behavior, production, and physiological measurements of stress, as well as neural transmission and anatomy of the beak, have been used as criteria to determine if beak trimming/treatment compromises bird welfare. In addition, the welfare of birds pecked by beak-intact birds has been evaluated. Advantages of beak trimming/treatment may include reduced pecking, reduced feather pulling, reduced cannibalism, better feather condition, less fearfulness, less nervousness, less chronic stress, and decreased mortality. Welfare disadvantages may include reduced ability to feed following beak trimming/treatment, short-term pain, perhaps chronic pain, and acute stress.

Whenever possible, genetic stock should be used that requires little or no beak trimming/treatment. However, under certain management systems (e.g., when there is exposure to high-intensity natural lighting) and with some genetic stocks, beak trimming/treatment may be required. UEP Certified recommends beak trimming/treatment only when necessary to prevent feather pecking and cannibalism and only when carried out by properly trained personnel who are regularly monitored for quality control.

There are two current practices for reducing the length of the beak: day-old infrared beak treatment at the hatchery and beak trimming using a hot blade at ten-days old or younger. When beak treatment is used, the equipment manufacturer's recommendations should be followed, and the UEP Certified Program Participant should receive a Certificate of Conformance (COC) from the hatchery. Also, when contract services are used for on-farm beak trimming, a Certificate of Conformance is required from the contractor. Research indicates that the infrared method may be preferable in terms of reducing the potential for acute pain and bleeding and may also result in more uniform beaks. However, both methods can be acceptable for welfare as long as they are properly carried out and minimize the amount of beak removed.

Recently trimmed or treated birds may have difficulty activating watering devices; therefore, caretakers should take actions that will facilitate the birds' ability to drink. Examples include lowering water pressure or manually triggering cup waters. Feed levels should be increased until the beaks are healed. Birds should be fed a pre-starter, starter, or high-density stress diet for about 1 week following beak trimming to minimize weight loss. When avoidable, birds should not be subjected to stressful conditions (e.g., handling, moving, vaccination) for 2 weeks following beak trimming.

Outbreaks of feather pecking and cannibalism can occur in flocks even when birds' beaks have been treated or trimmed, and these outbreaks can lead to injury and mortality. The incidence and severity of these abnormal behaviors can be influenced by many factors, including bird genetics, nutrition, and health status; environmental conditions, including high light levels; and various aspects of barn and equipment design and management. To minimize the potential for outbreaks, it is particularly important to provide the birds with adequate opportunities to forage throughout their lives. There are several published feather scoring systems that can be used to assess feather cover in flocks to determine if a problem is developing. If an outbreak of feather pecking or cannibalism occurs, the potential causes and appropriate corrective actions should be investigated. These may include providing additional foraging materials, reducing light levels, reducing environmental stressors, or changing the diet. If the outbreak cannot be controlled by these measures, it may be necessary to perform a therapeutic (second) trim.

### ***Guidelines for Beak Trimming or Beak Treatment***

- 1. Personnel performing beak trimming or treatment must be properly trained and monitored regularly for quality control.*
- 2. All equipment used for beak trimming or beak treatment must be clean and well-maintained.*
- 3. Infrared beak treatment must be performed at the hatchery in accordance with the equipment manufacturer's Quality Assurance standards; the hatchery must provide a Certificate of Conformance to the UEP Certified Program Participant.*
- 4. Hot-blade trimming must be carried out when birds are 10 days of age or younger. If a contract service performs the trimming, the contractor must provide a Certificate of Conformance.*
- 5. Trimming or treatment must result in no more than one-third of the upper beak being removed.*
- 6. The facility must have a written SOP that details procedures for ensuring that feed and water are freely available and easily accessible to birds after beak trimming or beak treatment, as well as nutritional modifications to minimize weight loss and vitamin supplementation to reduce stress and promote healing. Adherence to this SOP must be documented for each flock.*
- 7. Feather condition must be scored regularly using an established scoring system to determine if problems are developing.*
- 8. Each facility must have an SOP detailing the procedures used to prevent or mitigate outbreaks of feather pecking and cannibalism.*
- 9. Therapeutic beak trimming in response to outbreaks of cannibalism and feather pecking is permitted only with documented evidence that the mitigation methods in the SOP have been followed but failed to solve the problem.*



# GUIDELINES FOR LAYER PRODUCTION

## FLOOR SPACE PER HEN

There are three general types of cage-free indoor housing systems: 1) multi-tiered aviaries with a litter floor and slatted-floor platforms over manure-removal belts, 2) partially slatted systems with a litter area and a raised slatted-floor area through which manure drops into a storage pit below, and 3) single-level, all-litter floor systems. Depending on the system type, a minimum of 1.0 square foot or 1.5 square feet of usable floor space per hen shall be provided to allow for normal behavior. Because multi-tiered aviaries and partially slatted systems provide hens with access to vertical space within their barn, they effectively have more space to move around than hens in all-litter floor systems. Any cage-free housing system not described herein shall provide a minimum of 1.0 square foot of usable floor space per hen in systems that provide hens with access to vertical space and shall provide a minimum of 1.5 square feet of usable floor space per hen in systems that do not provide hens with access to vertical space. These Guidelines apply to all cage-free housing systems, whether indoors or outdoors. Outdoor areas in systems are not included when calculating conformance to the UEP Certified standards. Usable floor space includes the combined litter and drop-through area, including elevated tiers, and covers over belts, but excludes perch and nest space where the kick-out feature is being utilized. For equipment installed after December 31, 2025, the minimum nest space may not be included in the floor space calculation, regardless of nest type or nest features. When excess nest space is provided (i.e., greater than 9 square feet per hen), the surplus nest space can be included in the floor space calculation.

### ***Guidelines for Indoor Floor Space***

*At placement, hens must be given a minimum of the following:*

- *1.0 square foot per hen in multi-tier housing*
- *1.0 square foot per hen in slatted floor housing*
- *1.5 square feet per hen in single-level all litter floor housing*

## FEED AND WATER

Diets for producing hens must be formulated and fed to promote good health and normal production. To minimize the risk of bone fractures, hens in lay should be able to consume enough calcium and phosphorus daily to support eggshell formation and to minimize bone loss.

### **Guidelines for Feed**

1. *Access to fresh feed must be provided at all times. Feed must not become stale, moldy, rodent- or insect-infested, or contaminated with litter or feces.*
2. *A minimum of 1.5 linear inches of feed trough must be provided per hen when straight troughs are used (3 inches per hen when only one side of the feeder is accessible), or 1.5 perimeter inches of circular feeder space when round pans are used.*
3. *Feeders must be designed and placed in a manner to allow all hens access to feed.*

Drinkers should be designed to prevent water spillage.

Birds should be monitored closely for their ability to find and obtain water when first moved to the layer barn, especially if the type of watering device differs from that used previously by the birds. Water cups should be filled manually, or water nipples may need to be triggered for a few days (or even a few weeks) until the birds learn how to operate the drinker. Birds need to learn to use drinker devices that require them to press a lever or other releasing mechanism. If birds are not familiar with these types of drinkers when they are moved to the layer barn, adjustments to the drinkers should be made as needed to ensure adequate water intake.

Water pressure must be carefully regulated when using automatic watering devices. Pressure regulators and pressure meters should be located close to the level at which water is being delivered. Water meters should be used to measure consumption. Manufacturer recommendations should be used initially and adjusted if necessary to obtain optimal results.

Water being consumed by hens should be tested at least once per year to ensure the water is potable.

### **Guidelines for Water**

4. *Hens should not need to travel more than 26 feet within the barn to reach drinkers.*
5. *Access to water must be provided at a minimum rate of:*
  - *1 bell drinker per 100 hens (0.4 inches of circular space per hen), (OR)*
  - *0.5 linear inch of water trough per hen when straight troughs are used (1 inch per hen when only one side of the trough is accessible) (OR)*
  - *1 nipple drinker or cup per 10 hens.*
6. *Clean, fresh water must be accessible at all times, except when water is shut off temporarily in preparation for the administration of vaccines or therapeutic medications in the water.*
7. *Water must be provided in quantities sufficient to promote normal hydration, health, and productivity.*
8. *Water must be monitored to mitigate contamination from litter or feces.*

## PERCHES

Perches are designed to allow hens living in large flocks to roost comfortably with a minimum of disturbance, to provide hens with a refuge from injurious pecking, and to minimize flightiness. All barns must provide a minimum of 6 inches of elevated perch space per hen. At a minimum, 20% of this perch space must be at least 16 inches above the adjacent floor and at least 1 horizontal foot away from adjacent perches and walls.

Perches should be constructed of easily cleaned material that does not harbor mites and minimizes keel, foot, and nail damage. Perches should have no sharp edges. The ends of hollow perches should be capped. Perches should be designed and constructed to prevent injury to hens that are mounting or dismounting, as well as any hens nearby.

Perches should not extend into the nest area. The width of the perch must allow hens to wrap their toes around the perch and balance evenly in a relaxed posture for an extended period. Too wide of a perch prevents hens from wrapping their toes around the perch in a locked grip. Perches are generally 1.6 to 2 inches in diameter or have a top surface width of 1.6 inches. A perch width less than 0.75 inches or greater than 3 inches is not allowed. A minimum gap of 0.5 inches is needed on each horizontal side of any perch so that hens can grip the perch without trapping their nails.

Adjacent perches must be at least 1 foot apart horizontally to allow hens to easily perch simultaneously. Perches should be at least 8 inches from the back wall to encourage locomotion behind the perches, thereby reducing manure build-up.

### **Guidelines for Perches**

- 1. A minimum of 6 inches of usable linear perch space must be provided per hen so that all hens can perch simultaneously.*
- 2. At least 20% of the perch space must be elevated a minimum of 16 inches above the adjacent floor and at least 1 horizontal foot away from adjacent perches and walls to allow hens to get away from aggressors and avoid injurious pecking.*
- 3. Perches must be positioned to minimize fecal fouling of birds, feeders, or drinkers below.*
- 4. A minimum distance of 7.5 inches from the top of the perch to the ceiling or other structures is needed for hens to be able to use the perch comfortably.*

## LITTER

Scratch areas covered with litter are provided for hens living in large flocks to reduce the risk of feather pecking, reduce cannibalism, and minimize flightiness. Additionally, it allows hens the opportunity to dust bathe. All cage-free barns must provide at least 21.6 square inches per hen of scratch area, sometimes referred to as “litter area.” This scratch area is included in the total floor space. Scratch space must be comprised of a solid floor. Further research projects are needed regarding the amount of litter space and may change when research warrants a change.

Litter entering the barn should be free of visible mold or soiled areas. Litter with stale or “off” odors should not be used. Many types of litter can work in an egg production system. The most important feature is to properly manage litter condition, so it does not become wet, caked, or hard-packed. Litter should be of adequate depth throughout the scratch area to insulate birds from direct contact with the floor and to mix with the manure, but litter should not be so deep as to encourage egg laying on the floor. The litter should be removed and replaced with fresh litter between flocks.

If the scratch area provided does not allow for adequate claw wear, surfaces that hens scratch with their claws when feeding should be covered with an abrasive material that helps to prevent overgrown claws.

A ramp between the scratch area and the slats aids movement between these areas and may help to reduce the risk of floor eggs, injurious pecking, and bone fractures.

### **Guidelines for Litter**

- 1. Hens must have continual access to a scratch area covered with litter. In systems with internal confinement doors, hens may be confined for up to 6 weeks after initial placement for training. After this initial training, hens must have continual access to a scratch area covered with litter. A maximum of an additional 30 days is allowed for confinement over the remaining life of the birds. Records, including dates, times, and justification for confinement, must be maintained.*
- 2. A minimum of 21.6 square inches per bird of scratch area must be provided. The scratch area must be in useable floor space.*
- 3. The litter must be of adequate depth with minimal bare spots throughout the scratch area.*
- 4. The litter must be maintained in a loose, friable condition. Wet and hard-packed areas must be corrected daily.*



## NEST SPACE

Nests are provided in cage-free systems to facilitate egg collection, to minimize the risk of cloacal cannibalism, to satiate the hens innate desire, and for food safety and sanitary reasons. Every effort should be made to avoid eggs being laid outside nests. All eggs laid outside nests should be gathered at least once daily. Using management tools (e.g., electric wire) to discourage eggs from being laid near the wall and generally outside of the nest is permissible.

Nests should be draft-free and dark inside. Nests should be designed in ways that encourage settled nesting behavior and result in hens laying in nests. Flooring substrates that encourage nesting behavior include AstroTurf, rubber mats, plastic nest pads, snap-on plastic inserts, straw, or hay. Nest flooring with concave contours is also attractive to hens. Nests with wire floors or plastic-coated wire floors alone should be avoided. Privacy is an important aspect of a nest that encourages a hen to settle to lay, and nests must be enclosed in a way that does not allow a hen to see out while she is sitting. Research indicates that lights in nest boxes increase the risk of cannibalism. Nests should be constructed and maintained to protect hens from external parasites and disease organisms.

### **Guidelines for Nest Space**

- 1. For community nest a minimum of 9 square feet of nest space per 100 hens must be provided. For individual nest boxes a minimum of 1 nest per 5 hens must be provided.*
- 2. Nests must be provided with a suitable floor substrate that encourages nesting behavior.*
- 3. Nests must be regularly inspected and maintained as necessary to ensure that they are in good repair and unlikely to cause injury and to ensure that manure does not accumulate.*
- 4. For equipment installed after December 31, 2025, nest space cannot also be included in the floor or perch space calculations. (See floor space for additional details)*
- 5. Nests must be provided with curtains and/or dividers. Nest sides must extend close to the floor and preferably not have vertical gaps. Vertical gaps between flaps that allow the eyes of a hen sitting in the nest to be observed do not provide optimal desired privacy.*

## ENVIRONMENTAL: AIR QUALITY, TEMPERATURE, AND LIGHTING

Housing should protect birds from exposure to anticipated adverse environmental conditions, including excessive heat, cold, and precipitation. Bird movement and litter in cage-free systems can result in higher concentrations of bacteria, fungi, internal and external parasites, noxious gases, and dust in the air compared to cage systems. Air quality can deteriorate rapidly when the ventilation rate is reduced in winter to conserve heat. Good husbandry, appropriate barn construction, proper ventilation, and careful attention to sanitation are needed to ensure acceptable temperature and air quality.

Relative humidity (RH) is shown to impact several parameters that may impact hen welfare, including ammonia levels, litter quality, dust, and combined with high temperatures, RH can directly impact hen welfare. Generally, other air quality aspects will be in good condition when RH is well controlled. The recommended target temperature for laying hens is between 18° – 24°C (65 – 75°F), and the recommended target RH is 50 – 70%. A warmer air temperature can be used at higher air velocity (e.g., 1-1.5 m/s or 200 – 300 ft/min) in the summertime, which may be achieved through tunnel ventilation. Barn ventilation systems primarily function through the use of outdoor ambient conditions with supplemental heat when needed. As such, indoor conditions are dependent on outdoor conditions, and targets are sometimes not achievable. In hot, humid conditions, ventilation systems should be designed to be capable of maintaining indoor temperatures within 3°C (5°F) and 5% RH relative to external conditions.

Barn temperature should be adjusted in a timely manner if bird behavior indicates that birds are too hot (panting or sitting with wings held out) or too cold (huddling and ruffling of feathers). Night-time cooling (i.e., leaving all ventilation fans running throughout the night) may be used to lower the daily average temperature toward the thermal comfort range, thus alleviating heat stress accumulated during the day.

Lighting can impact hen welfare and production traits. Keel or other bone injuries/damages can be caused by poor navigation of the system, which may happen if the lighting is insufficient. Likewise, injurious and cannibalistic pecking can be stimulated by excessive lighting. Moreover, feed and water intake may be negatively affected by inadequate lighting. Multiple zones of lighting are recommended. Hens often prefer to lay eggs in dark/dim, calm areas. Strategic lighting can help to discourage floor eggs (e.g., by providing brighter light under the system) and encourage hens to use nests and return to the system at night (e.g., through sequentially turning lights off). A simulated “dawn” (i.e., gradually increasing light intensity) may reduce fearfulness. Periods of darkness allow the hens to rest and can positively impact egg production and egg quality.

### ***Guidelines for Air Quality and Temperature***

1. Barns must be designed and operated to provide a continuous flow of fresh air for every bird. Sufficient ventilation must be maintained to avoid excessive concentrations of carbon monoxide, ammonia, and dust.
2. The ammonia concentration to which birds are exposed should be less than 10 ppm and must rarely exceed 25 ppm.
3. Housing must be designed and operated to maximize the likelihood of birds being able to maintain their normal body temperature without difficulty, e.g., adequate ventilation capacity, evaporative cooling if equipped, or supplemental heating. It is understood that occasional unforeseen extreme weather (e.g., a heat wave) can result in temporary thermal stress.
4. Air temperature and relative humidity (RH) within the barn must be tracked and monitored. When outdoor temperature or a combination of air temperature and RH reaches stressful levels, as evidenced by behaviors such as the onset of panting, corrective actions must be taken, namely, maximizing ventilation rate, hence increasing air velocity, and activating evaporative cooling if equipped.

### **Guidelines for Lighting**

1. Light intensity must be at least 0.5 foot-candle at feeders, drinkers, perches, and litter throughout the barn during the daytime lighting period.
2. Sufficient lighting must be provided to allow for effective inspection of all birds at least once daily.
3. The lighting period must be no fewer than 8 hours and no greater than 18 continuous hours in closed barns or natural day length in open barns. The dark period may be interrupted for one nightly feeding (e.g., during hot summer days).
4. Light intensity must be lowered gradually or in steps prior to lights going out for the night to encourage hens to move up onto slats, tiers, and perches and get settled for the night. Natural light during dawn or dusk is adequate to meet this standard.

### **MOLTING**

In the wild, birds shed and renew their old, worn feathers; this normal process is called molting. A molt often occurs seasonally in response to changes in temperature or light. Chickens kept for commercial egg production have a different molting pattern. They have been bred for high performance, and their environment, with respect to temperature and light, is usually controlled to remove major seasonal influences.

In commercial egg production, an induced molt provides a way to extend the life of the hen and rejuvenate her reproductive cycle. The practice of inducing a molt allows the farmer to bring all hens into a molt at the same time rather than waiting for a natural molt to occur, thereby sustaining more efficient rates of egg production and improved egg quality. Induced molting results in approximately 20 to 30% fewer hens being added to the flock each year, and thus significantly fewer end-of-lay hens being handled, transported, and slaughtered. Without molting, a flock's life is usually ended at about 75 to 85 weeks of age, whereas with molting, the life of that flock may be extended to 110 weeks or longer. University and government research has provided a variety of effective feeding methods that can be used during the induced molt period.

Because of their mobility, hens in cage-free flocks might be more susceptible to injury during molting than those in cage flocks. Injuries could occur if de-feathered hens fall from tiers or contact structures in the barn. Re-emerging feathers could also trigger pecking by other hens in the flock. Special consideration should be given to monitoring injuries in cage-free flocks during the molt and to initiating corrective actions in the event of problems.

### **Guidelines for Molting**

1. Only non-feed withdrawal molt methods are permitted.
2. Hens must be provided with a palatable feed source that is suitable for non-producing hens.
3. Water must always be available.
4. Low body weight or unthrifty hens must be culled prior to initiating the molt, and inspection frequency increased during the molt period to rapidly identify and euthanize hens in a compromised condition.
5. The light period can be reduced for the duration of the rest period to no fewer than 8 hours in closed barns or to natural day length in open barns, and the normal layer lighting program resumed when the flock is placed back on a layer diet.
6. Body weight loss during the molt period must not compromise hen welfare. Body weight loss at the end of the molt must not exceed 25% of the average flock weight measured before the induction of the molt.
7. Corrective actions must be implemented if mortality during the molt increases more than 0.5% (3-day average) over pre-molt mortality.

## MULTI-TIER SYSTEMS

The following are additional guidelines specific to multi-tier systems. For topics not covered in this section, refer to other relevant sections of these guidelines.

For tiers above head height, access should be provided to allow animal caretakers to access the hens without climbing on the side of the multi-tier configuration.

Ensuring hens have easy access between tiers is critical. Research shows many benefits to the thoughtful design of aids, such as perches, platforms, and ramps, including reduced injuries and increased access time. Particularly, hens appear to prefer well-designed ramps vs. perches or platforms to access tiers. Aids to access tiers should be plentiful throughout the system so that hens can access them as desired.

### ***Guidelines for Multi-Tier Systems***

1. Multi-Tier Systems must be designed to allow proper inspection of hens at all levels and permit personnel to access sick and injured birds and remove dead ones. Systems must be designed to allow proper inspection of the feeders, waterers, and nests.
2. Systems should be designed in such a way that hens are able to easily move vertically and horizontally in a way that minimizes injury. Each tier must safely allow hens to access other tiers, including the littered floor. For example, perches/platforms can facilitate horizontal movement between tiers, and ramps can be used to facilitate movement from the littered area to raised tiers.
3. Only the floor area and the tiers (defined as the area that may provide water, food, or perches for the hens) can be counted as usable space when calculating stocking density. Tiers must be designed to allow the hens to stand comfortably upright and move freely into and out of the area.
4. Raised tiers must be designed to minimize hens in lower tiers from upper-tier fecal contamination. Each tier must have a system to remove manure, such as a manure belt.

## INCOMPLETE AND BACKFILLING FLOCKS

A Program Participant may place hens within a barn for 20 days after the initial hen placement within the barn. After 20 days, the flock is considered an established population unless the Program Participant declares an incomplete flock. Additional birds cannot be added to an established flock even if UEP Certified space allowance has not been optimized. When an incomplete flock is declared, birds added afterwards must be segregated from the originally placed hens so that the commingling of birds from multiple ages and dates of placement does not occur. Program Participant records must document when the layer barn was initially supplied with birds and when and where additional birds were added.

Generally, hens cannot be placed in an established flock; doing so is termed backfilling. This is a prohibited practice within UEP Certified Program unless permission is obtained following a catastrophic event. Regardless of the scenario, hens may not be stocked above the UEP Certified standards.

## ACKNOWLEDGMENTS

United Egg Producers wishes to thank:

- ❖ The independent Scientific Advisory Committee members for their professional expertise and research of the scientific literature.
- ❖ UEP's Producer Committee for Animal Welfare members for establishing guidelines for the industry.
- ❖ UEP's Board of Directors for their proactive initiative of establishing a Scientific Advisory Committee and ultimately adopting the committee's recommendations.
- ❖ FACTA, USDA-AMS, and Validus for their independent audits.