



STATE OF MAINE
DEPARTMENT OF AGRICULTURE, CONSERVATION & FORESTRY
ANIMAL HEALTH
28 STATE HOUSE STATION
AUGUSTA, MAINE 04333-0028

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**Best Management Practices (BMPs)
for Farms with over 10,000 Birds**

Note: The following BMPs are intended for poultry facilities housing caged or cage-free egg-laying hens.

1. **Management:** A high degree of caring and responsible management and oversight is vital to ensure the highest standards of animal welfare. Managers and caretakers must be thoroughly trained, skilled, and competent in animal husbandry and welfare, as well as possessing a good, working knowledge of their management system and the hens under their care.
 - a. Designated Animal Welfare and Training Manager: Each company must designate an individual whose responsibility it is to oversee the care, welfare, and husbandry of the animals on the farm, and to administer a comprehensive program of employee training on the care and welfare of the birds. This individual must be provided with the authority, financial resources, and personnel to implement the provisions of these BMPs.
 - b. Veterinarian: Each company must employ the services of a licensed veterinarian with expertise in poultry health management to develop and implement a health management plan specific to the farm. This veterinarian must also be provided with the authority, financial resources, and personnel needed to carry out the provisions of the health management plan.
 - c. Records and Documentation: For each flock, comprehensive production records must be maintained in graphic or tabular form. These records should include clinical performance parameters, including but not limited to hen eggs/week production, mortality, feed, and water availability, along with daily house temperature.
 - d. Standard Operating Procedures (SOPs): Comprehensive instructions (bilingual if necessary) must be developed and implemented for the following categories: *feeding, ventilation, alarm systems, emergency response plan, lighting, water supply and consumption, flock inspection, culling practices, removal of dead hens, euthanasia, pest control, equipment maintenance, transportation, and handling.*
 - e. Biosecurity Standard Operating Procedures (SOPs): For each flock, SOPs must be developed and implemented for the following categories: disease prevention, alarms and emergency, transportation and handling, vaccination procedures, and visitor access.
 - f. Training of Personnel: All personnel involved in the care of the birds must be trained in best management practices on the handling, care, and welfare of the birds under their supervision. New employees must be provided with an orientation on these BMPs prior to starting work in the poultry houses. Documentation confirming training in aspects of flock welfare must be maintained by the designated animal welfare manager and available for inspection by Department personnel during regular business hours. Regular training updates must be provided to all employees. Caretakers must be trained to recognize the normal and abnormal behavior of hens,

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and to recognize the signs that indicate good health and welfare, so employees are able to immediately determine and report when a problem arises.

- g. **Inspection of Birds and Facilities:** Birds and facilities are inspected a minimum of twice daily, and records of these inspections are documented and kept on file. On completion of inspection, records are kept of sick, injured, or dead birds. If sick birds are observed, a supervisor must be notified immediately.
- h. **Equipment and Installations:** All equipment and fixtures have been selected, installed, and maintained to optimize the well-being of flocks, including but not limited to ventilation, feeding, water supply, lighting, nests, litter, slats, perches, electrical connections, and alarm systems. Cages must be kept in an adequate state of repair to contain the birds and will be inspected prior to a new flock being housed.
 - i. **Power Supply and Alarm Systems:** The farm shall be in possession of a standby generator with sufficient power capacity to operate fans, feeders, waterers, and lights. This generator should be functional and tested weekly, with records kept of this testing. Side curtains, if installed, open automatically in the event of a power failure or high temperature, or can be opened manually.
 - ii. **Ventilation:** The design and capacity of the ventilation system is sufficient to ensure that the temperature and humidity is maintained within the thermal neutral zone of the birds, and that ammonia levels are maintained at healthy levels for both humans and birds.
 - iii. **Automatic Ventilation Systems:** These systems must be equipped with an alarm that gives adequate warning of the failure of the system to function properly and must operate if the power has failed.
 - iv. **Responsible employees** are able to demonstrate the ability to operate all equipment competently. Employees carry out routine maintenance and are able to recognize common signs of malfunction. Employees must be trained in actions to be carried out in the event of equipment failures.
- i. **Pests and Predators:** Humane precautions are in place to protect laying hens from predators and rodents. The entry of wild birds into houses must be prevented. Other predators, dogs, and cats, must not be permitted in the hen house.
- j. **Food:** Hens are provided with a diet which is appropriate to their age and species, and which is fed to them in sufficient quantity to maintain them in good health and satisfy their nutritional needs. The nutrition plan has been developed and regularly updated in consultation with the flock veterinarian or nutritionist.
 - i. **Producer** has records of the feed concentrates with certification or proof that the diet has been developed by a poultry nutritionist.
 - ii. **Producer** does periodic analysis of feed samples to determine nutritional content and presence of any harmful or banned substances.
 - iii. Hens have free access to nutritious food each day.
 - iv. **In-feed antibiotics** are given for therapeutic reasons as prescribed by the flock veterinarian. Therapeutic use is consistent with accepted Food and Drug Administration “prudent Use Principles” and complies with drug withdrawal times.

- v. In-feed anti-parasitic agents may be used as prescribed by the flock veterinarian.
 - vi. Food is removed from all feeders when the flock has been depopulated, and this feed is not reused for other flocks.
 - k. Water: Hens have continuous access to an adequate water supply of clean, fresh, drinking water at all times.
 - i. Water lines are placed at an optimum height for the size and age of birds, and are of an appropriate design.
 - ii. Water pressure or water availability is verified and recorded weekly, and log sheets are kept and available to inspectors.
 - l. Pullets: Feeding and watering regimes for replacement pullets are similar to those in the laying house. Inspectors are given access to rearing houses during pullet grow-out stage.
 - i. Pullet raising premises are thoroughly cleaned before restocking.
 - ii. Pullets are housed in production houses prior to the onset of laying.
 - iii. Upon movement into production houses, pullets must be accompanied by Certificate of Conformance for Beak Trimming, Certificate of Conformance for Handling and/or Transportation, and NPIP Compliance Document Form 9-3.
 - m. Backfilling: Other than a catastrophic event, backfilling (the practice of placing new birds into an existing flock) of cages to replace mortality is prohibited. A catastrophic event is defined as a natural disaster, disease problem, or other event beyond the control of the producer. Under these circumstances, backfilling of hens up to 90% of the original flock capacity is permitted. Prior approval must be obtained.
 - n. Incomplete Flock: A house that is not completely filled on the original date of housing will be considered as an incomplete flock and may accept additional pullets at a later date to complete filling of the house to allowable cage space allowance limits. Company records must document when the layer house was supplied with new pullets, and when additional pullets were added. Empty cages at the date of original housing must be set aside to accept additional pullets to assure that no commingling of the original pullets and additional pullets occurs.
- 2. **Environment:** The environment in which hens are housed takes into account their welfare needs and is designed to protect them from physical and thermal discomfort, fear, and distress.
 - a. Biosecurity and Disease Prevention: Precautions have been implemented to limit the introduction of disease, including limiting entrance points to buildings, and excluding visitors unless wearing protective clothing and footwear as recommended by the flock veterinarian and flock biosecurity SOP.
 - b. Buildings: A checklist for each house is available, posted, and contains the following information for all hens or birds in the housing system: total floor or cage space area available; total number of birds; target air quality parameters, ammonia levels; lighting program and light intensity; feeding schedule.
 - i. Emergency procedures are posted in full view in the housing system, to include actions in case of: a) fire, flood, or natural disaster, b) failure of automatic equipment, c) temperatures outside acceptable limits, and d) loss of primary water system.

- ii. No sharp edges or protrusions likely to cause injury, distress, or impalement of birds.
 - iii. Absence of projections, damaged partitions, live electrical connections, or electrical leakage which could injure the hens.
 - iv. Hens have no possibility to come into contact with paints, wood preservatives, toxic disinfectants, or other toxins.
 - v. Cages and floor systems are designed so that all hens can be easily seen.
 - vi. 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. The ammonia concentration to which the birds are exposed should ideally be less than 10 ppm and should not exceed 25 ppm, but temporary excesses shall not affect bird health.
- c. Lighting: Within each period of 24 hours, the lighting system in the hen house provides a minimum of eight hours of artificial light and/or daylight, and a minimum period of darkness or the natural period of darkness, if less.
 - i. Lighting patterns in all houses are recorded and kept on file.
 - ii. Daytime lighting levels allow the birds to see and be inspected without difficulty. The lighting system in hen houses is designed and maintained to give 0.5 to 1.0 candles through the house with the exception of shaded areas.
 - iii. The reduction of light levels to prevent cannibalism is only used as a last resort.
- d. Space Allowance, Caged: All new houses constructed after January 1st, 2010, must meet the following space requirement: 1) for brown egg-layers: 76 square inches of floor space per bird, 2) for white leghorn hens: 67 square inches of floor space per bird. For current buildings, the "house average" method for calculating birds per cage can be employed.
 - i. Measurements verify adequate stocking rate and compliance to meet the standards.
 - ii. By 14 days after flock is housed, statistical sampling methodology will be used to verify stocking rates and compliance with space requirements; 90 cages distributed throughout a house will be inspected, and hen numbers in each cage recorded.
 - 1. One cage out of 90 found to be occupied by six birds is allowed.
 - 2. Two cages out of 90 found occupied by six birds will require corrective actions to be taken.
 - a. Two cages of six found within the rows predetermined by management to hold five birds per cage will cause management to recount and adjust those rows only within 7 days.
 - b. Two cages of six found within the rows predetermined by management to hold four birds per cage will be cause for management to inspect and adjust birds per cage in all rows of four birds per cage within 7 days.
 - c. Two cages of six birds found in one predetermined row of four per cage and in one of the rows of five will be cause for the management to have the entire house recounted and adjusted so that no cage contains six birds within 7 days.
- e. Space Allowance, Cage-Free: A minimum of 1.5 square feet per hen must be allocated to allow for performance of normal behavior. In a house with perching/roosting area over a

droppings pit or belt, the minimum space can be 1.25 square feet per brown egg-layers, and 1.0 square feet for white leghorn hens. In a multi-tier system with feeders and waterers on overhead perches or platforms, and in which the perches or platforms provide sufficient space for at least 55% of the hens to perch, a minimum of 1.0 square foot of available space must be provided.

- i. All hens in such systems must have sufficient freedom of movement to be able to, without difficult, stand normally, turn around, and stretch their wings.
 - ii. Birds have the ability to perch or sit quietly without repeated disturbance. Particular attention is given to the provision of food and water in areas frequented by subordinate hens.
 - iii. Measurements verify adequate stocking rate and compliance to meet the standards.
 - iv. Perches: Perches are provided at not less than 6" per hen, including the lighting rail immediately in front of the nest boxes.
 1. Some perches are raised above the floor space to allow hens to avoid aggressors.
 2. There is a gap of not less than 0.5" on either side of any perch to allow hens to grip the perches without the risk of trapping their claws.
 3. Perches are positioned to minimize the dirtying of hens below, and, where possible, must be over a droppings pit.
 4. Perch space of not less than 72 square inches per bird is provided on a slatted or mesh floored area.
 5. Only perches located 12" or more above the floor are calculated as part of the perching space, although more perches may be provided adjacent to one another to make a perforated floor.
3. **Health**: Hens must be protected from pain, injury, and disease. The environment in which hens are housed must be conducive to good health. All producers must develop a farm-specific flock health management plan in consultation with their flock veterinarian.
 - a. Health Plan and Records: A health management plan is developed and regularly updated in consultation with the flock veterinarian. The plan includes any vaccinations, treatments, and other aspects of flock health management such as causes of morbidity as well as tolerance limits on overall flock performance.
 - b. The Maine Salmonella Enteritidis Risk Reduction Program for the control of Salmonella enteritidis has been implemented on all farms.
 - c. Birds present no injuries attributable to physical features of their environment or to handling procedures. If injuries are found, they are immediately addressed and a program of preventative action is specified in the health management plan.
 - d. Flock performance data are continually monitored for indicators of disease or production disorders. If any flock performance parameters fall below tolerance limits as specified in the flock health management plan, the veterinarian is informed and an action plan is developed to remedy the problem.
 - e. Sick hens and any hens suffering from injury such as open wounds, fractures, or prolapsing of the vent are segregated and treated without delay or humanely euthanized.
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- g. Artificial appliances designed to prevent cannibalism, such as blinkers attached to the beak or nostrils, are not permitted.
- h. Euthanasia: Each farm has a written Standard Operating Procedure and has trained employees for routine and emergency humane euthanasia using on-farm methods carried out by these trained personnel or the flock veterinarian.
 - i. Euthanasia should be carried out according to guidelines developed by the American Veterinary Medical Association.
 - ii. Methods currently considered acceptable for humane euthanasia include: modified atmosphere killing (MAK) using carbon dioxide gas; cervical dislocation; non-penetrating captive bolt; and electrocution.
 - iii. When using a modified atmosphere killing cart of similar system, the protocols must be developed in consultation with the flock veterinarian and must have prior approval from the State Veterinarian.
- i. Carcass Disposal: Carcass disposal must be carried out in compliance with the Department's Carcass Disposal rules. Emergency disposal methods must receive prior approval from Department personnel.
- j. Beak Trimming: Whenever possible, genetic stock should be used whose offspring require little or no beak trimming. When beak trimming is necessary to prevent feather picking and cannibalism, it must be carried out only by properly trained personnel, and must be monitored regularly for quality control. The following guidelines must also be followed when beak trimming is employed:
 - i. Beaks must be trimmed when chick are 10 days old or younger with a precision automated beak trimmer.
 - ii. Individuals responsible for beak trimming must be properly trained and monitored regularly.
 - iii. The blade of the trimmer must be cleaned regularly.
 - iv. Depending on the recommendation of the flock veterinarian, vitamins C and K may be added to the water.
 - v. After beak trimming, the levels of feed and water should be increased until the beaks are healed.
 - vi. To minimize weight loss, birds should be fed a pre-starter, starter, or high-density stress diet for about one week following beak trimming.
 - vii. Birds should not be subjected to stressful conditions (e.g. handling, moving, vaccination) for two weeks following.
- k. Guidelines for Molt Program:
 - i. Only non-feed withdrawal molt methods will be permitted after January 1st,2010.
 - ii. Hens should be provided with a feed source that is suitable for non-producing hens.
 - iii. Water must be available at all times.
 - iv. The light period should be reduced to now fewer than eight 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.
 - v. During the molt period, body weight loss should be sufficient so as not to compromise hen welfare in the subsequent laying period.
 - vi. Total mortality during the molt should not substantially exceed normal variations in flock mortality.

4. **Transport:** Animal transport systems must be designed and managed to ensure hens are not caused avoidable distress or discomfort. The transport and handling of hens must be kept to an absolute minimum. Personnel involved in transport must be thoroughly trained and competent to carry out the tasks required of them.
 - a. Catching and removal at the end of the laying cycle (also called “depopulation”): All personnel involved in catching and transportation of birds are properly trained and are competent in their responsibilities.
 - i. Managers have full and detailed written instruction for the catching staff.
 - ii. All catching staff have copies of these instructions, are able to read them (bilingual instructions must be supplied if appropriate) and are aware of their responsibilities and duties.
 - iii. A member of the catching crew is responsible for supervising, monitoring, and maintaining high welfare standards throughout the depopulation.
 - iv. Catching takes place in low lighting to minimize birds’ fear reactions.
 - v. All feeders, waterers, and other obstacles are removed or raised prior to catching to minimize the risk of injury or bruising to the employees or birds.
 - vi. Actions are taken to prevent hens from crowding together.
 - vii. Hens are put in transport trays or dollies in the house. Doorways are large enough to allow safe passage of transport trays or dollies.
 - viii. Birds moved in or out of caged production systems should be handled as to minimize bone breakage or injury. Therefore, pullet and hen handling systems must include: (a) removing birds from the cage one or two at a time by grasping both the legs and the neck; (b) supporting the bird’s breast as she is lifted over the feed trough; (c) handling birds in an upright position.
 - ix. Unfit birds are not transported but instead are immediately and humanely euthanized in accordance with farm protocols.
 - x. Hanging racks should not be used to move birds.
 - xi. 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.
 - b. Trucking: Personnel in charge of chicken transporters and trucks demonstrate competence in handling hens when loading and unloading them and while in transit.
 - i. The drivers of transport vehicles must be aware of climate conditions and make necessary adjustments (e.g. to bird density, tarps, fans, water sprays, curtains in cold or inclement weather, etc.) to keep birds thermally comfortable. When the weather is hot, a central passageway is left free of birds and crates to allow increased ventilation. In hot weather, management should consider transporting hens at night or in the coolest part of the day.
 - ii. Water must not be withdrawn prior to transport.
5. **Unannounced Inspections:** The Department of Agriculture, Conservation, & Forestry will conduct regular, unannounced inspections to assure compliance with these BMPs.
6. **Commissioner’s Authority to Control Diseases:** Pursuant to Title 7 MRSA §1753, the Commissioner of Agriculture currently has broad authority to “prevent the introduction of contagious, infectious, and parasitic diseases, and exposure thereto, among domestic animals in

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the State, especially those diseases transmitted to people, either directly or indirectly, and those of greatest economic importance.” Under this authority, a violation of the provisions of these BMPs affecting bird health and welfare or representing an immediate threat to public health could result in the immediate termination of egg production and distribution in the affected house or complex until such time as the violation is corrected.