



## CODE OF PRACTICE



# FOR THE CARE AND HANDLING OF HATCHING EGGS, BREEDERS, CHICKENS, AND TURKEYS

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## Preface

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The National Farm Animal Care Council (NFACC) Code development process was followed in the development of this Code of Practice. The Code of Practice for the Care and Handling of Hatching Eggs, Breeders, Chickens, and Turkeys replaces its predecessor developed in 2003 and published by the Canadian Agri-Food Research Council (CARC).

The Codes of Practice are nationally developed guidelines for the care and handling of farm animals. They serve as our national understanding of animal care requirements and recommended practices. Codes promote sound management and welfare practices for housing, care, transportation, and other animal husbandry practices.

Codes of Practice have been developed for virtually all farmed animal species in Canada. NFACC's website provides access to all currently available Codes ([www.nfacc.ca](http://www.nfacc.ca)).

The NFACC Code development process aims to:

- link Codes with science
- ensure transparency in the process
- include broad representation from stakeholders
- contribute to improvements in farm animal care
- identify research priorities and encourage work in these priority areas
- write clearly to ensure ease of reading, understanding and implementation
- provide a document that is useful for all stakeholders.

The Codes of Practice are the result of a rigorous Code development process, taking into account the best science available for each species, compiled through an independent peer-reviewed process, along with stakeholder input. The Code Development process also takes into account the practical requirements for each species necessary to promote consistent application across Canada and ensure uptake by stakeholders resulting in beneficial animal outcomes. Given their broad use by numerous parties in Canada today, it is important for all to understand how they are intended to be interpreted.

**Requirements** - These refer to either a regulatory requirement or an industry imposed expectation outlining acceptable and unacceptable practices and are fundamental obligations relating to the care of animals. Requirements represent a consensus position that these measures, at minimum, are to be implemented by all persons responsible for farm animal care. When included as part of an assessment program, those who fail to implement Requirements may be compelled by industry associations to undertake corrective measures or risk a loss of market options. Requirements also may be enforceable under federal and provincial regulation.

**Recommended Practices** - Code Recommended Practices may complement a Code's Requirements, promote producer education, and can encourage adoption of practices for continual improvement in animal welfare outcomes. Recommended Practices are those that are generally expected to enhance animal welfare outcomes, but failure to implement them does not imply that acceptable standards of animal care are not met.

Broad representation and expertise on each Code Development Committee ensures collaborative Code development. Stakeholder commitment is key to ensure quality animal care standards are established and implemented.



## Preface (continued)

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This Code represents a consensus amongst diverse stakeholder groups. Consensus results in a decision that everyone agrees advances animal welfare but does not imply unanimous endorsement of every aspect of the Code. Codes play a central role in Canada's farm animal welfare system as part of a process of continual improvement. As a result, they need to be reviewed and updated regularly. Codes should be reviewed at least every five years following publication and updated at least every ten years.

A key feature of NFACC's Code development process is the Scientific Committee. It is widely accepted that animal welfare codes, guidelines, standards, or legislation should take advantage of the best available research. A Scientific Committee review of priority animal welfare issues for the species being addressed provided valuable information to the Code Development Committee in developing this Code of Practice.

The Scientific Committee report is peer reviewed and publicly available, enhancing the transparency and credibility of the Code.

*The Code of Practice for the Care and Handling of Chickens, Turkeys And Breeders: Review of scientific research on priority issues* developed by the poultry Code of Practice Scientific Committee is available on NFACC's website ([www.nfacc.ca](http://www.nfacc.ca)).



# Introduction

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Codes of Practice strive to promote acceptable standards of care for animals in such a way that achieves a workable balance between the welfare needs of animals and the capabilities of producers. Poultry production in Canada involves interaction between several sectors that specialize in specific phases of production. Each of these sectors utilizes technologies and practices intended to support both optimal bird welfare and productivity. Broiler and turkey breeding farms produce hatching eggs. Hatcheries receive, store, incubate, and hatch these eggs, and then transport chicks and poults to farms where they are reared in environments that meet their specific health and welfare needs. This Code addresses the welfare needs of birds in all of these unique phases of production.

Welfare is intrinsically linked to the people who have been entrusted with the care of birds and hatching eggs. Ultimately, it is the responsibility of producers to ensure that all personnel perform their duties properly and that they are competent in the tasks that they are assigned. Even those who have demonstrated their competency in their regular tasks need to be monitored occasionally to ensure that they continue to carry out their responsibilities according to management expectations. This applies to those who work on-farm or at hatcheries, whether compensated or not, as well as those service providers that are hired to perform specific tasks (e.g. catchers).

Genetics and environmental factors have allowed for a steady increase in poultry meat production. This increased production has created welfare challenges due to the birds' ability to grow very quickly. There is a complex interaction between genetics, husbandry, and environment that affects birds' health and welfare. It is important to recognize the impact that selection for high productivity can have on an animal's overall well-being. Breeding programs that emphasize bird welfare in conjunction with production traits are encouraged.

This Code is a guideline for the care and handling of broiler and turkey hatching eggs, broiler and turkey breeders, broiler chickens, and turkeys, and as such plays an important role in the poultry industry's ongoing efforts to assess animal care on poultry farms across Canada. The Code development process also identifies research gaps so that research can be conducted in areas that help to improve bird welfare. This Code does not apply to meat processing or transportation beyond the farm gate. All applicable provincial and federal acts and regulations continue to take precedence.

As a guiding principle, Requirements in this Code are intended to be outcome- or animal-based, as they are most directly linked to animal welfare, and can be applied in a wide range of animal production systems. Since Requirements will often state the necessary outcome, the producer has flexibility to determine how the outcomes can be achieved using individual management and husbandry practices. Recommended Practices encourage continuous improvement in animal care. However, failure to implement Recommended Practices does not imply that acceptable standards of animal care are not being met.

The World Organization for Animal Health (OIE) develops production guidelines aimed at improving the health and welfare of animals globally. As a member of the OIE, Canada is committed to these guidelines, and the Code Development Committee has kept them in mind during the revision of this Code of Practice.



# Glossary

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**The following terms and definitions refer only to how the terms are used in this document.**

**Ad Libitum:** Providing birds with unrestricted access to feed and/or water at all times.

**All-In/All-Out:** A production strategy whereby all birds are moved into and out of facilities and/or between production phases.

**Ammonia:** A noxious gas common in animal production that forms during breakdown of nitrogenous wastes in animal excrement.

**Beak Treatment/Beak Trimming:** Treatment or removal of a portion of the beak.

**Bedding:** Loose material such as wood shavings or chopped straw that is added to housing environments.

**Biosecurity:** Measures designed to reduce the risk of introduction, establishment, and spread of animal diseases, infections, or infestations to, from, and within an animal population.

**Bird:** A chicken or turkey of any age, size, weight, or sex.

**Break-Out:** The process of opening unhatched eggs to look for embryo abnormalities as a technique to identify causes of hatchability problems.

**Breeder:** A mature male or female chicken or turkey used for breeding.

**Broiler Breeder:** A mature male or female chicken used for breeding to produce broiler hatching eggs.

**Broiler Chicken:** A chicken that is raised for meat production.

**Brooding:** The period after hatch when special care and attention must be given to chicks (e.g. up to 7 days) and poults (e.g. up to 14 days) to ensure their health and survival due to their immature thermal regulation systems.

**Broody Hen:** Turkey hens that exhibit behaviour consistent with incubating eggs to hatch.

**Broody Pen:** A separate area where broody hens may be moved to in an effort to manage broodiness and to keep hens laying.

**Cannibalism:** The act of one bird consuming the flesh of another bird.

**Chick:** A hatched young chicken; usually refers only to the first few days of life when the bird is still covered in down.

**Competent:** Demonstrated skill and/or knowledge in a particular topic, practice, or procedure that has been developed through training, experience, or mentorship, or a combination thereof.

**Cull/Culling:** The process of removing birds or hatching eggs from production based on specific criteria.

**Dark Period:** Length of time where light intensity is no more than 20% of the light intensity of the light period.

**Diurnal Lighting:** A daily lighting pattern that distinguishes between light and dark.

**Downtime:** The period of time between flocks that allows for the reduction in numbers of disease-causing micro-organisms within the barn or range area.

**Embryo:** A bird in its earliest stages of development following cleavage of the zygote and ending at hatching.

**Enrichment:** Enhancement of an animal's physical or social environment.





## Glossary (continued)

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**Euthanasia:** The process of ending the life of a bird in a way that minimizes or eliminates pain and distress. It is characterized by rapid, irreversible unconsciousness (insensibility), followed by prompt death.

**Feather Pecking:** A behaviour problem in domestic birds that involves a bird pecking (or plucking) the feathers of flock mates.

**Flock Inspection(s):** The process of routinely checking flocks (e.g. for bird health and well-being, availability and access to feed and water, mortality) and/or barns (e.g. for environmental conditions, operating condition of equipment), which can be done primarily in person or alternatively through remote access where appropriate and feasible.

**Free-Range:** A system where birds are allowed access to an outdoor area when weather permits.

**Free-Run:** A system where birds roam freely inside a barn but do not have outdoor access.

**Hatchery:** A facility that receives hatching eggs from poultry breeder operations and cares for them through storage, incubation, hatching, processing, and holding.

**Hatching Egg:** A fertilized bird egg that is suitable for incubation and hatching.

**Hot Blade Trimming:** Beak trimming performed using the hot-blade (HB) method, either manually or with automated equipment.

**Incubation:** The act of keeping hatching eggs in conditions that are favourable for growth and development in order to hatch them.

**Insensible/Insensibility:** The point at which an animal no longer has the ability to feel pain or perceive and respond to its environment (e.g. light).

**IR (Infrared) Beak Treatment:** Beak treatment performed using an infrared (IR) energy light.

**Litter:** The combination of bedding and/or bird excreta, feathers, feed, dust, and other materials on floors of bird housing systems.

**Mass Depopulation:** The on-farm killing of an entire flock or of a large number of birds.

**Microwave Treatment:** Treatment of toes and/or spurs by microwave energy.

**Monitor:** The act, by company personnel, of conducting a planned sequence of observations, tests, or measurements to assess whether a critical control point, a process control, and/or a prerequisite program is under control. This can include recording the results of those observations (1).

**Moult:** A natural seasonal event in which birds substantially reduce their feed intake, cease egg production, and replace their plumage. Induced or controlled moulting is a process that simulates natural moulting and extends the productive life of breeders (2).

**Non-Penetrating Captive Bolt:** A specially designed device that propels a blunt bolt with great force that, when applied in the correct position, causes immediate loss of sensibility and results in death.

**Penetrating Captive Bolt:** A specially designed device used for stunning and euthanasia that, when applied in the correct position, causes immediate loss of sensibility and results in irreversible brain injury and death.

**Personnel:** All individuals, including family members, who have responsibilities for working with or caring for hatching eggs or birds. This excludes external service providers.



## Glossary (continued)

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**Plan:** A set of actions, which may be recorded in writing, that have been thought of as a way to accomplish or achieve a desired outcome.

**Poult:** A hatched young turkey; usually refers only to the first few days of life when the bird is still covered in down.

**ppm:** Parts per million.

**Pullet:** A young female domestic chicken that has not yet reached sexual maturity (i.e. begun to lay eggs).

**Range:** The outdoor area to which birds may have access from indoor production systems.

**Rooster:** A sexually mature male chicken.

**Social Hierarchy:** The order whereby individual birds establish their dominance position within a group of birds.

**Spiker Rooster:** A rooster that is introduced to established breeder flocks during production.

**Stockmanship:** The practice of undertaking the immediate day-to-day husbandry tasks associated with looking after birds.

**Toe Treatment(s):** A process that physically alters toes on birds and that includes toenail clipping and toe trimming.

**Tom:** A male turkey used for breeding or meat production.

**Training:** The act that aims to impart skills and/or knowledge on a formal or informal basis (e.g. through mentoring) that results in the recipient's understanding and/or ability to perform assigned duties.

**Turkey Breeder:** A mature male or female turkey used for breeding to produce turkey hatching eggs.

**Turkey Hen:** A female turkey used for breeding or meat production.

**Unfit for Transport:** A bird with signs of infirmity, illness, injury, or a condition that indicates that it cannot be transported without suffering (10).

**Wet Bird:** A bird with wet or moist feathers in contact with the skin and/or wet or moist skin resulting in decreased capacity to thermoregulate.

# 1

## Personnel Knowledge and Skills

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Management is responsible for setting and maintaining the priority for poultry welfare. Stockmanship is one of the most important determinants of poultry welfare. This responsibility rests with all personnel, those entrusted with the day-to-day care of birds as well as those contracted to perform specific duties (e.g. vaccinating, catching, artificial insemination).

Frequent, positive interactions with humans, even regular visual contact, have been linked to reduced fear and stress in birds (3).

Before they are assigned their duties, personnel need to be knowledgeable of the basic needs of the birds entrusted to their care. This can be accomplished through training, which may be formal or informal (e.g. through mentoring), or a combination of both (Refer to *Glossary*).

### **REQUIREMENTS**

***A Code of Conduct covering bird welfare must be developed and communicated.***

***All individuals who work with or care for hatching eggs or birds must be competent in the tasks they are assigned.***

***Personnel must be monitored and receive additional training as necessary.***

### **RECOMMENDED PRACTICES**

- a. develop a written Code of Conduct covering bird welfare, and ensure that all personnel are aware of it (e.g. ask personnel to sign it, review annually with personnel). Refer to *Appendix A - Sample Bird Welfare Policy*
- b. make this Code of Practice available to all personnel
- c. identify supervisors or managers that personnel can approach with poultry welfare questions or concerns. Implement a confidential means of reporting concerns
- d. ensure that personnel have a thorough knowledge of any equipment they will be using
- e. supervise external service providers to ensure that bird welfare is not compromised.

## 2

# Hatcheries

Hatcheries are specialized facilities that receive fertilized eggs from poultry breeder operations and care for them through storage, incubation, hatching, processing, and holding. Hatcheries also perform various management procedures on eggs and newly-hatched chicks and poults to protect their health and prepare them for the growing phase. This Code covers those hatcheries that incubate hatching eggs used in poultry (meat) production.

Research indicates that the stage of incubation at which embryos become sensible to pain can be as early as 50% of incubation (4). Environmental or management problems during storage or incubation of eggs may cause premature embryo development, abnormalities, or even death (5), all of which have obvious implications for bird welfare. It is for this reason that this Code includes recommendations for the handling and management of hatching eggs.

## 2.1 Emergency Management and Preparedness

Refer to *Section 5.4 - Emergency Management and Preparedness*.

## 2.2 Hatching Egg Management and Incubation

Proper handling, storage, and incubation of hatching eggs is important to promote healthy embryo development and to minimize embryo mortality. Optimal hatchability is obtained when eggs begin incubation within 7 days of being laid (6) (7).

### REQUIREMENTS

***Hatching eggs must be transported, handled, stored, and incubated in ways that promote healthy embryos.***

### RECOMMENDED PRACTICES

- a. keep vehicles used to transport hatching eggs clean, and sanitized or disinfected, and in good working order to ensure that eggs arrive at their destination in good condition
- b. ensure vehicles have sufficient capabilities for heating or cooling and ventilation to maintain similar conditions provided in the hatchery egg storage area, even if the vehicle is stationary for a period of time
- c. protect eggs from unintended fluctuations in temperature
- d. maintain relative humidity levels during egg storage that prevent excessive moisture loss
- e. maintain environmental conditions in accordance with the projected egg storage time
- f. check for cracked and dirty eggs during traying, and remove eggs that are unacceptable
- g. tray eggs with the blunt end up
- h. prevent cooler, heater, and/or humidifier fans from blowing directly on the eggs during storage.

## 2.3 Hatching Egg Transfer

Transfer is the process of moving eggs from the incubator to the hatcher, which occurs after embryos are sensible to pain. Eggs may be vaccinated or medicated at this stage (Refer to *Section 5.1 - Flock Health Plan*). Damaged or contaminated eggs are removed; infertile eggs may also be removed.

## REQUIREMENTS

***Hatching eggs must be handled and transferred in ways that promote healthy chicks and poults.***

***Eggs with the possibility of live embryos that are removed at transfer must be euthanized (Refer to Appendix B - Methods of Euthanasia).***

***Vaccines and treatments must be stored, mixed, and administered according to the manufacturers' recommendations and/or the recommendation of a veterinarian.***

***Manufacturers' instructions for use, sanitation, and maintenance of automated equipment used during transfer, including for administering vaccines, medications, and/or nutrients, must be followed.***

## 2.4 Chick and Poulth Processing

After hatching, chicks and poults are removed from the hatchers and separated from the egg shells. Processing may include sexing, grading, vaccination and medication, and physical alterations (Refer to *Section 2.5 - Physical Alterations and Bird Identification*). Assessing the viability of chicks and poults, including fitness for transport, is an important part of processing.

Some aspects of processing may be automated, so regular inspection and maintenance of processing equipment is important to ensure safe handling of the chicks and poults.

## REQUIREMENTS

***Chicks and poults, as well as boxes with chicks or poults, must be kept, treated, and handled in ways that prevent injury and minimize stress.***

***Chicks and poults, as well as boxes with chicks or poults, must not be dropped from heights that may cause injury.***

***Live chicks and poults must be removed from hatch residue.***

***Chicks and poults must be inspected regularly to ensure that they appear, behave, and sound normal.***

***Prompt action must be taken to identify and remedy the causes of chick and poulth injuries.***

***Injured or malformed chicks and poults that are suffering and unhatched live embryos not destined for further examination (break-out) must be euthanized as soon as possible, within 1 hour after completion of flock processing.***

***Break-out of unhatched eggs must take place within the day of hatch.***

***Vaccines and treatments must be stored, mixed, and administered according to the manufacturers' recommendations and/or the recommendation of a veterinarian.***

***Chicks and poults must never be squeezed, except for the purpose of sexing by vent examination.***

***All loose chicks and poults must be retrieved as soon as possible and at a minimum at every flock change.***

### **RECOMMENDED PRACTICES**

- a. monitor hatchability and cull rates. Take steps to identify and remedy significant deviations from expected rates
- b. do not drop chicks and poults from heights exceeding 15 cm (5.9 in) onto a hard surface or 30 cm (11.8 in) onto a soft surface
- c. move hatching trays with live chicks or poults smoothly. Tip trays to remove chicks, poults, and hatch residue in such a way that the chicks and poults do not pile or become trapped.

## **2.5 Physical Alterations and Bird Identification**

Part of the processing of chicks and poults at hatcheries can involve physical alterations that are intended to protect their welfare in the long-term, even though the procedures themselves may cause pain in the short-term (8) (9). Such physical alterations fall into one of two categories: the removal of part of the anatomy that (i) is likely to be injured (snood, comb), or (ii) is likely to cause injury to other birds (toes, beaks, spurs). For more information, refer to *Section 6.7 - Managing Harmful Behaviour*.

Beak treatments remove the tip of the beak to help reduce feather pecking and cannibalism. Unlike hot blade trimming, infrared treatment uses an infrared energy light that is less painful (9). Toenail clipping prevents birds from injuring other birds during mating and periods of high activity. When performing toe treatments, the objective is to remove the nail with minimal tissue damage.

Genetics and management may affect whether such alterations are of benefit for the specific birds on a given farm (9). Hatcheries should stay informed about the latest methods and equipment for performing procedures.

### **REQUIREMENTS**

***Physical alterations to beaks, toes, spurs, combs, and snoods must be reviewed and evaluated regularly for welfare improvements and to determine the need for these practices.***

***All equipment used to perform physical alterations must be regularly inspected, maintained, calibrated, cleaned, and used according to manufacturers' instructions.***

### **RECOMMENDED PRACTICES**

- a. use preferred methods as listed in *Table 2.1 - Possible physical alterations performed on day-old chicks or poults in hatcheries*
- b. adopt new, more humane technologies and methods for performing physical alterations as they become available
- c. use strains that do not require physical alterations
- d. ensure that identification devices permanently or temporarily attached to birds are lightweight and safe to both the identified bird and to other birds in the flock.

**Table 2.1 - Possible physical alterations performed on day-old chicks or poults in hatcheries.**

Alteration	Birds	Methods (in order of preference)
Beak Treatment	All except broiler chickens	Infrared treatment Hot blade trimming
Toe Treatment	Turkeys Broiler breeder roosters Turkey breeders	Microwave treatment Hot blade trimming
Spur (dew claw) Removal	Turkeys Turkey breeder hens Broiler breeder roosters	Microwave treatment Scissors
Comb Removal	Broiler breeder roosters	Scissors
Snood Removal	Turkeys Turkey breeders	Manually Tweezers or huller

## 2.6 Holding, Loading, and Transporting Chicks and Poults

It is important that stress is minimized throughout the transport process and that chicks and poults arrive at their final destination in good condition.

The federal requirements for animal transport are covered under the *Health of Animals Regulations, Part XII* (Transportation of Animals) (10).

A separate Code of Practice for transportation, which applies to vehicles transporting animals on public roads and highways, is available on the National Farm Animal Care Council's website. Refer to *Appendix K - Resources for Further Information*. However, hatcheries typically manage the entire transportation process due to the fact that they own and operate specialized equipment and employ the drivers; therefore, the condition of chicks and poults during transport falls within the scope of this Code, as well. This Code also applies to situations where non-specialized equipment is used for the transport of chicks and poults.

Chicks and poults possess energy and water reserves in the form of the yolk sac, which serves to sustain chicks and poults for a period of time after hatch (11) (12). Depending on the strain, these reserves can sustain chicks and poults for up to 72 hours and, along with appropriate thermal conditions during transport, help to protect chick and poult health (11) (12).

It is the responsibility of the hatchery to ensure that chicks and poults are fit for the intended journey. Fit chicks and poults are those in good physical condition and health that are expected to reach their destination in good condition.

### REQUIREMENTS

***Boxes with chicks or poults must be moved smoothly and in such a way that the chicks or poults do not pile or become trapped.***

***Boxes containing chicks or poults must not be thrown or dropped.***

***Chicks and poults that are deemed unfit for transport must be cared for or euthanized.***

***Appropriate environmental conditions must be maintained throughout the transport process to ensure that chicks and poults arrive at their final destination in good condition.***

***Chicks and poults must be able to stand erect during transport.***

## **RECOMMENDED PRACTICES**

- a. maintain holding areas for boxes of chicks or poults at a temperature range of 21-27°C (70-80°F) and a relative humidity range of 40-60%
- b. monitor the vent temperature of a sample of chicks and poults during holding to ensure that they maintain a normal core body temperature range (39.5-40.5°C [103-105°F]). A human ear thermometer is a good tool for this application
- c. if travelling in a non-climate-controlled vehicle, consider both the outside temperature and the duration of transport when determining the optimum density of chicks or poults in boxes. In hot weather or when transporting chicks or poults over long distances, reduce the packing density
- d. provide no less than 24.5 cm<sup>2</sup> (3.8 in<sup>2</sup>) box floor space per chick and 27.1 cm<sup>2</sup> (4.2 in<sup>2</sup>) box floor space per poult. The maximum group size for a single compartment should be adjusted according to the equipment specifications
- e. adjust vehicle temperature prior to loading chicks and poults to prevent them from becoming overheated or chilled
- f. monitor and adjust ventilation, temperature, and spacing of boxes so that chicks and poults are able to maintain their normal core body temperature
- g. minimize the change in environment if, during transportation, boxes are to be transferred between vehicles
- h. use clean boxes. Keep vehicles used to transport chicks or poults clean, and disinfected or sanitized, and in good working order to ensure that chicks and poults arrive at their destination in good condition
- i. check chicks and poults at random to ensure that they appear, behave, and sound normal prior to departure
- j. deliver chicks and poults as soon as possible after hatching
- k. deliver all chicks and poults destined for any given barn floor at the same time to avoid challenges associated with meeting different age-related needs
- l. provide gel pucks or alternative sources of hydration to chicks and poults when the duration between hatch and placement is expected to exceed 24 hours.

### **2.7 Pest Control**

Refer to *Section 5.2.2 - Pest Control*.

### **2.8 Euthanasia at Hatcheries**

Refer to *Section 8.1 - Euthanasia at Hatcheries*.



# 3

## Housing and Environment

### 3.1 Housing

Birds are typically housed indoors in free-run systems. Free-range systems, which allow access to the outdoors, can also be used. Housing needs to provide appropriate space, ventilation and temperature, and protection from predators. Premises and equipment need to be maintained and cleaned to eliminate any refuge for rodents, wild birds, and other animals that could introduce diseases to the flock. (Refer to *Section 5 - Flock Health Management*.)

#### REQUIREMENTS

***Poultry housing and its components must be designed, constructed, and regularly inspected and maintained in a manner that minimizes the potential for injury and allows for inspection of all birds.***

### 3.2 Feed and Water Equipment

Providing all birds access to feed and water is essential to birds' health and productivity, and important in minimizing competition for resources. Refer to *Section 4 - Feed and Water* for additional guidelines on bird nutrition and hydration.

#### REQUIREMENTS

***Feed and water equipment must be maintained in good working order, and any defective systems must be attended to without delay.***

#### RECOMMENDED PRACTICES

- a. design, construct, and locate feed and water equipment to minimize the risk of contamination and competition
- b. follow manufacturer recommendations, if available, for guidance on feeder and drinker spaces. If not available, refer to *Appendix C - Recommended Feeder and Drinker Spaces for Broiler Chickens* and *Appendix D - Recommended Feeder and Drinker Spaces for Turkeys*.

### 3.3 Environmental Management

#### 3.3.1 Temperature, Ventilation and Air Quality

##### Temperature

Optimal temperature ranges are not the same for all birds or stages of production. Generally, birds can maintain their body temperature after the first few days of age through a variety of behavioural mechanisms, assuming that the ambient temperature is within certain limits. (Refer to Tables 3.1 and 3.2.)

Bird behaviour can be used as a reliable indicator of thermal comfort. Signs that indicate that temperature is too high include:

- crowding of chicks or poults away from the heat source
- frequent spreading and flapping of wings
- panting

Conversely, signs that indicate a temperature is too low include:

- crowding around the heat source
- feather ruffling
- rigid posture
- trembling
- huddling or piling on top of each other
- distress vocalization.

**Table 3.1 - General guidelines for optimal broiler breeder and broiler chicken production barn temperature ranges (assuming 50-70% relative humidity). Temperature should be measured at bird level.**

Bird Age	Temperature Range
1-7 days	30-34°C (86-93°F)
1-5 weeks	Lower by 2-3°C (4-6°F) each week
6 weeks on	18-24°C (65-75°F)

**Table 3.2 - General guidelines for optimal turkey barn temperature ranges (assuming 50-70% relative humidity). Temperature should be measured at bird level.**

Age	Temperature Range
1-7 days	32-35°C (90-95°F)
1-5 weeks	Lower by 2-3°C (4-6°F) each week
6-10 weeks	15-24°C (59-75°F)
11 weeks on	13-24°C (55-75°F)
Breeders	7-24°C (45-75°F)

**Table 3.3 Determining Humidex values (“feels like” temperature) based on temperature and relative humidity.**

Relative Humidity	Temperature			
	20 °C	25 °C	30 °C	35 °C
50%	22°C	28°C	36°C	45°C
60%	24°C	30°C	38°C	46°C
70%	25°C	32°C	41°C	49°C
75%	26°C	33°C	42°C	50°C
80%	26°C	33°C	43°C	52°C
85%	27°C	34°C	44°C	53°C

For more information about managing the environmental temperature for chicks and poults, refer to *Section 6.2 - Receiving and Brooding Chicks and Poults*.

### **Ventilation and Air Quality**

Ventilation plays a key role in maintaining a comfortable and healthy environment for birds. Air quality is a complex issue, interacting with a number of important factors, such as bird size and age, stocking density, ambient temperature and relative humidity, dust, and ammonia levels.

Ammonia is an irritant. Domestic fowl are able to detect it at 5 ppm and concentrations greater than 25 ppm can cause short-term damage to respiratory systems and feet, and can lead to corneal ulcerations (8). Bird health and welfare may be compromised at ammonia levels as low as 10 ppm (8). It is important to use reliable tools to measure ammonia levels. Relying solely on smell is not sufficient since individuals' sense of smell can become accustomed to the odour (13).

High concentrations of carbon monoxide (CO) and carbon dioxide (CO<sub>2</sub>) can affect bird welfare and can even be lethal. CO<sub>2</sub> is produced by the birds' respiration as well as by the burning of hydrocarbon fuels (oil/gas) used in heating equipment. In an insufficiently ventilated barn, toxic CO may be produced. Both CO and CO<sub>2</sub> are odourless and colourless.

#### **REQUIREMENTS**

***Poultry housing must be designed and constructed in a manner that allows for good ventilation and air quality with respect to temperature, relative humidity, dust level, ammonia, and carbon dioxide.***

***Heating and ventilation systems must be inspected regularly and maintained in working order.***

***Bird behaviour must be observed and necessary corrective action taken as soon as possible if birds are displaying signs of thermal discomfort.***

***Action must be taken to manage ammonia levels if they reach a harmful range (e.g. 20 to 25 ppm).***

#### **RECOMMENDED PRACTICES**

- a. monitor ammonia levels on a weekly basis using appropriate measuring devices. Increase monitoring frequency during cold and/or humid weather. Take steps to avoid ammonia concentrations exceeding 10 ppm. Action to control ammonia levels includes the following: increase ventilation and/or heat, evaluate stocking densities for subsequent flocks, minimize water leaks/spillages
- b. monitor CO<sub>2</sub> and CO levels by utilizing appropriate measuring devices
- c. monitor daily minimum and maximum temperatures and relative humidity in barns to assist in managing air quality. Investigate abnormal fluctuations and take corrective action
- d. maintain uniform air movement throughout the barn
- e. protect birds from drafts during cold weather
- f. aim for a relative humidity level between 50% and 70%. Higher relative humidity will negatively affect litter quality and may increase the chance of heat stress in birds at high temperatures. Take corrective action if humidity levels exceed 70%
- g. maintain barn temperatures in a range appropriate for the age of birds. Refer to Tables 3.1 and 3.2 and/or consult the primary breeder, hatchery, or chick/poult supplier for guidelines
- h. balance the interactions between temperature and relative humidity by adjusting heating and ventilation systems. Refer to Table 3.3 for guidance on determining Humidex values
- i. take measures to lower the risk of heat stress during hot weather (e.g. increase ventilation, utilize misters, hose the barn roof, utilize evaporative cooling systems)

- j. adjust chick/poult orders so that stocking densities are appropriate for the expected seasonal conditions the birds will experience during production
- k. install and maintain an automated alarm system to alert personnel if barn temperature falls outside of the target range
- l. check birds frequently during hot and humid conditions.

### 3.3.2 Bedding and Litter Management

Good litter quality will help maintain air quality as well as reduce the incidence of litter-related problems, which can occur if litter is too wet or too dry. Litter that is too wet may lead to health problems (e.g. hock burns, foot pad lesions, breast blisters). Litter that is too dry results in higher dust levels, which can lead to respiratory problems. Litter that is at the correct moisture level will compact loosely in the hand after squeezing. Litter that is too wet will compact tightly, whereas litter that is too dry will not compact at all.

Environmental factors such as ventilation, diet, and bedding material can all affect litter quality (8).

#### REQUIREMENTS

***Bedding that is provided must not be harmful or toxic to birds.***

***Bedding or litter must be available to provide opportunities for birds to express normal behaviours (e.g. scratching, foraging, dust bathing).***

***Litter condition must be monitored daily and action taken immediately to improve poor litter conditions (i.e. litter that is too wet or too dry).***

***Fresh bedding must be provided for chicks and poults at placement.***

#### RECOMMENDED PRACTICES

- a. monitor litter condition throughout the barn. Pay special attention to litter around feeders and waterers, which is often wetter than elsewhere in the barn and may need corrective action
- b. balance moisture levels in litter to avoid excessive dust (too dry) or caking (too wet)
- c. inspect bedding used in barns for visible mould or other contaminants
- d. monitor and manage the incidence and severity of hock burns, breast blisters, and foot pad lesions. These are signs of poor litter quality.

## 3.4 Lighting

Darkness benefits birds by allowing them to sleep and develop 24-hour day/night rhythms, which is important in immune function, growth rate, digestion, lameness, and general health (14).

Supplemental heat is essential in maintaining newly hatched birds' body temperature during the first few weeks of life when natural brooding is not utilized. However, the use of radiant heat lamps results in constant exposure to light. Continuous light can negatively impact eye development of newly hatched birds and disrupts rest, which affects the synchronization of activities.

Some chicks and poults continue to rest after arrival from the hatchery, while others seek out food and water. An intermittent lighting program divides the day into resting and activity phases and can assist with synchronizing activity to stimulate food and water intake through group behaviour (15). Synchronizing activity has been shown to promote better rest and can reduce the development of feather pecking by separating active and inactive birds.

Providing a dark period for broiler chickens and turkeys controls growth early in life, which gives skeletal and metabolic systems a chance to develop before the birds get heavy (14). Lighting programs also assist in managing the growth, onset of sexual maturity, and productivity of breeders.

Rearing birds at low light intensities could result in interrupted resting bouts and a lack of obvious resting and wakeful periods (8). Four hours or more of darkness per day results in significant improvements in welfare parameters as compared to 0-1 hours of darkness (8).

### **REQUIREMENTS**

***Chicks and poults must be provided with a minimum of 1 hour of darkness in each 24 hour period after 24 hours of placement, and the dark period must be gradually increased to a minimum of 4 hours in each 24 hour period by day 5 of placement.***

***From day 5 of placement through to no sooner than 7 days prior to catching, birds kept in barns must have a dark period of at least 4 consecutive hours in each 24 hour period.***

***Dark periods must be no more than 20% of the light intensity of the light period.***

***Light intensity must be adequate during the light period to allow birds to navigate their surroundings and for daily inspections (e.g. 5 to 10 lux). Light intensity may only be reduced temporarily to correct abnormal behaviour.***

***Light control systems must be inspected regularly and maintained in working order.***

### **RECOMMENDED PRACTICES**

- a. evaluate the lighting regimen as a potential contributing factor to behavioural problems such as aggression or flightiness
- b. inspect and service light bulbs frequently, as their brightness decreases with age and dust accumulation
- c. begin lighting programs immediately after placement
- d. provide a light intensity of no less than 20 lux for chicks and 50 lux for poults during the light phase for the first 3 days of life to help birds locate feed and water. Thereafter, light intensity during the light phase should provide adequate illumination for normal feed and water intake and normal activity, as well as easy inspection of all birds
- e. after day 3 of placement, start to gradually provide at least 6 continuous hours of darkness that is no more than 10% of the light intensity of the light period in any one 24 hour period
- f. measure light intensities at bird level
- g. minimize large variations in light intensities throughout the barn
- h. refer to *Appendix E - Management Practices to Transition to Day-Night (Diurnal) Lighting Programs* for guidance.

## 3.5 Stocking Densities

Optimal stocking density is significantly affected by housing factors, such as ventilation, litter management, and the method of delivery of both feed and water. Bird welfare and successful performance depend on the complex interaction of these and other factors, rather than on the observance of a single maximum stocking density allowance (16).

Stocking density is typically measured as the mass of birds per unit of available interior barn space, and expressed as kg/m<sup>2</sup>. Bird weight is a key factor in planning appropriate stocking densities, which should be calculated using interior dimensions of the available barn space and the expected shipping weight of the birds.

Producers are encouraged to review the performance of previous flocks when determining target stocking densities for future flocks.

Research on stocking densities for turkeys and breeders is limited.

### REQUIREMENTS

***Birds must have enough space to move freely and be able to stand normally, turn around, and stretch their wings without difficulty.***

***Space allowance must be sufficient to allow all birds to be able to sit at the same time.***

***Health and/or injury data, if available from processors, must be used to help determine if on-farm stocking densities are contributing to recurring health and/or welfare problems (e.g. foot pad and breast lesions, cellulitis, bruises).***

***The number of birds must not exceed that which can be accommodated by the available barn space and equipment (e.g. feeders, waterers, nest boxes).***

### ***Additional requirements for broiler breeders***

***Stocking densities for broiler breeders must not be greater than 34 kg/m<sup>2</sup>.***

### ***Additional requirements for broiler chickens***

***Stocking densities for broiler chickens must not normally exceed 31 kg/m<sup>2</sup> at any time.***

***Stocking density may be increased to a maximum of 38 kg/m<sup>2</sup> when the following conditions are maintained:***

- ***daily environmental monitoring (temperature, and relative humidity or ammonia) that demonstrates acceptable ranges are maintained and recorded***
- ***daily water intake is monitored and recorded***
- ***a Flock Health Plan is developed and followed***
- ***alarms are installed and maintained to alert personnel when environmental conditions are out of acceptable ranges***
- ***ongoing health and/or injury data indicate that the increased stocking density does not compromise bird welfare.***

***Additional requirements for turkeys***

***Stocking densities for turkeys must not normally exceed limits contained in Column (a) in Table 3.4. Stocking densities may be increased to limits contained in Column (b) in Table 3.4 when the following conditions are maintained:***

- ***daily environmental monitoring (temperature, and relative humidity or ammonia) that demonstrates acceptable ranges are maintained and recorded***
- ***daily water intake is monitored and recorded***
- ***a Flock Health Plan is developed and followed***
- ***alarms are installed and maintained to alert personnel when environmental conditions are out of acceptable ranges***
- ***ongoing health and/or injury data indicate that the increased stocking density does not compromise bird welfare.***

**Table 3.4: Maximum Stocking Densities for Turkeys**

Average Turkey Weight	Column (a) Maximum Stocking Density	Column (b) Conditional Maximum Stocking Density
6.2 kg and under	40 kg/m <sup>2</sup>	45 kg/m <sup>2</sup>
Over 6.2 kg but not more than 10.8 kg	45 kg/m <sup>2</sup>	50 kg/m <sup>2</sup>
Over 10.8 kg but not more than 13.3 kg	50 kg/m <sup>2</sup>	60 kg/m <sup>2</sup>
Over 13.3 kg	55 kg/m <sup>2</sup>	65 kg/m <sup>2</sup>

**RECOMMENDED PRACTICES**

- a. target stocking densities below the required densities
- b. reduce stocking densities for future flocks if problems such as excessive heat or humidity due to weather, equipment problems, poor litter quality, disease, or other health challenges (e.g. footpad lesions, lameness) occur and cannot be controlled with other management practices
- c. consult a specialist (e.g. poultry veterinarian, breeder company representative, other qualified advisor) for guidance on managing stocking densities if problems arise.

**3.6 Nests (Broiler Breeders and Turkey Breeders)**

Broiler and turkey breeder hens have a strong motivation to isolate themselves at egg-laying and to perform nesting behaviour. The layout of the barns and ventilation patterns can affect hens' willingness to use nests for egg-laying.

Some of the factors affecting nest use in breeders include (but are not limited to):

- the ratio of birds to nests
- lighting
- ventilation
- type of nest
- ease of access by birds, including slat slope and height
- placement of feeders and waterers in relation to nests.

### **REQUIREMENTS**

***A sufficient number of appropriately-sized nests for the strain and number of hens in each group must be provided.***

### **RECOMMENDED PRACTICES**

- a. provide one nest for every 4 to 7 hens or as recommended by nest manufacturers' guidelines whenever available
- b. provide community nests at a rate of 40 broiler breeder hens per meter per side of nest, or as recommended by nest manufacturers' guidelines whenever available
- c. maintain nests in a good state of repair and provide substrate.

## **3.7 Hatching Egg Room Environment**

Improper handling, storage, or incubation of hatching eggs can cause unhealthy embryo development and mortality. Optimal hatchability is obtained when eggs begin incubation within 7 days of being laid (6) (7).

Environmental factors during egg storage that affect hatchability and chick and poult welfare include storage time, storage temperature, relative humidity during storage, and flock age. Refer to the specific storage guidelines provided by the primary breeder for the strain.

### **REQUIREMENTS**

***Hatching eggs must be stored in ways that promote healthy embryos.***

### **RECOMMENDED PRACTICES**

- a. maintain egg storage temperatures at a constant level once the eggs have cooled
- b. coordinate egg storage temperatures with the hatchery
- c. prevent cooler, heater, or humidifier fans from blowing directly on the eggs during storage.

## **3.8 Additional Considerations for Outdoor Access, Semi-Confined, or Range Production**

In Canada, most chickens and turkeys are raised indoors, due to extremes in weather and the risk of predation and disease. Providing outdoor access offers opportunities for environmental enrichment and increased exercise. There are challenges associated with raising birds in range systems, including pests, predators, risk of disease transmission from other birds and animals, and the difficulty of sanitizing the environment. In cases where birds are raised with outdoor access, producers are responsible for ensuring that their needs are met and their welfare protected to the same extent as birds kept indoors. This Code recognizes, however, that the practical means used to achieve these goals may be different from birds housed indoors.

Shelters are provided to protect birds from inclement weather, and can include barns or other free-standing structures.



### **REQUIREMENTS**

***Shelter must be provided to protect birds raised outdoors from inclement weather.***

***The range area must provide sufficient shaded areas to accommodate the size of the flock.***

***The range area must be kept free of debris that may shelter pests.***

***Feed and water must be provided in a way that discourages access by wild birds.***

***The outdoor range must be sited and managed to avoid muddy or unsuitable conditions; this includes the areas under the feeders and waterers.***

***When birds have access to the range from a barn, barns must be designed to allow easy access to and from the range area for all birds.***

### **RECOMMENDED PRACTICES**

- a. ensure that the majority of the range area is covered in vegetation
- b. ensure stocking density of range birds on pasture does not exceed the pasture's ability to maintain vegetation
- c. rotate range areas if possible to allow vegetation to regrow between flocks. This may also help to reduce the risk of disease (17)
- d. provide popholes for broiler chickens and turkeys at a minimum rate of 1 pophole for each 15 meters of linear space
- e. provide windbreaks in open fields where there is a likelihood of strong winds
- f. protect outdoor birds from animals that may prey on the birds or cause fear
- g. use electric fencing outside enclosures and fine netting over enclosures to reduce the risk of predation.

# 4 Feed and Water

## 4.1 Nutrition and Hydration

Feed and water are important for welfare because they contribute to overall bird health and well-being. Working with a qualified advisor (e.g. poultry nutritionist) can assist with ensuring birds are provided with nutritionally balanced diets. Nutrient composition, quantity, and availability of feed that is contaminant-free are all important components of the feed management system, as is access to feeders. Recording feed and water intake is an important practice, since increases or decreases in consumption can be an early indicator of problems.

The contamination of feed with mycotoxins poses a serious threat to the health and productivity of poultry (18). Generally, younger animals are more susceptible to the toxic effects of all mycotoxins.

### REQUIREMENTS

***Birds must be fed a diet appropriate to their age and genetics, and which contains adequate nutrients to meet their requirements for good health and welfare.***

***Feed and water must be acceptable to birds and free from contaminants at a concentration hazardous to bird health.***

***Birds must be provided with fresh, potable water in sufficient quantities for normal hydration, health, and production.***

***Water must be tested at least annually, unless municipal water is used, to ensure its suitability for the birds and corrective action must be taken as necessary.***

***Water must be monitored on an ongoing basis for any changes (odours, rust, cloudiness) that may suggest a change in quality.***

### ***Additional requirements for broiler chickens, turkeys, and turkey breeders***

***Broiler chickens and turkeys must have access to feed and water in sufficient quantities at all times in normal circumstances, up until the time of catching. Interruptions for the purposes of vaccinations or water system maintenance or under veterinary instructions are acceptable.***

***Turkey breeders must be provided with daily access to feed and water that maintains their health and meets their physiological requirements for health.***

### RECOMMENDED PRACTICES

- a. consult a nutritionist or other qualified specialist to ensure the diets meet the nutritional requirements of the birds
- b. test feed when bird health or behaviour indicates that feed may be contaminated or nutritional quality may be compromised
- c. avoid any sudden changes in the quantity, form, or nutritional content of feed. Make dietary changes gradually and according to the recommendations of a nutritionist or other qualified specialist
- d. test water for water treatment chemicals (e.g. chlorine, peroxide), if used, at least monthly at the furthest point from the source at bird access level

- e. use a closed watering system (e.g. nipple drinker) over an open system (e.g. bell type or trough).  
Closed systems limit bacterial growth
- f. flush, clean, and sanitize watering equipment between flocks
- g. ensure that water quality is protected through regular inspection and maintenance of water lines and devices
- h. check water availability more frequently in hot or very cold weather
- i. test surface water sources or wells more frequently to detect potential fluctuations in water quality
- j. check open waterers daily and clean at least weekly
- k. use waterers that minimize spillage
- l. adjust the height of feed and water equipment as the birds grow
- m. monitor all feed and water equipment for proper operation on a daily basis, and take corrective action promptly when necessary

**Additional recommended practices for broiler breeders**

- n. when housing both male and female mature breeders, use feed equipment that allows targeted feeding for male and female birds

**Additional recommended practices for turkeys**

- o. provide grit to aid in digestion and promote feed absorption.

## **4.2 Controlled Feeding and Watering for Broiler Breeders**

Broiler breeders are genetically selected for high feed conversion rates, and therefore have the potential to grow very quickly (8). Allowing these birds free access to feed results in high body weights that can result in serious welfare problems, such as skeletal deformities (which can, in turn, result in breast blisters and hock burns) (8). Maintaining optimal body condition is also important for egg laying, fertility, and bird health.

In order to balance the risks to welfare, broiler breeders are usually prevented from feeding ad libitum. Feed restriction begins at approximately 2-3 weeks of age (e.g. skip-a-day feeding) (8). After breeders reach lay, restriction levels decrease (8). Restricted feeding programs result in chronic hunger, which has an unavoidable negative impact on bird welfare.

Controlled feeding programs can sometimes result in over-consumption of water as birds redirect their appetite to waterers, which can adversely affect bird health and welfare. Therefore, access to water is sometimes restricted to certain times of day, taking into account environmental conditions.

There is a complex interaction between genetics, husbandry, and environment that affects bird health and welfare. However, it is important to recognize the impact that selection for high productivity can have on the overall well-being of broiler chickens and their parent stock. Genetics companies are encouraged to select for more moderate production goals that allow birds to be productive without having to be subjected to such extreme food restriction to protect their health. The industry is committed to support ongoing and new research into feeding strategies to minimize the impact of current genetics on bird welfare, and implement practical solutions as they become available. The outcomes of these shared endeavours will inform the next Code revision.

### **REQUIREMENTS**

***The body weight and uniformity of feed- and water-restricted birds must be monitored.***

***When controlled feeding is used to control excessive body weight gain during pre-lay, any interruption of feed must not exceed 48 hours.***

***Water must be provided daily in sufficient quantities for normal hydration and in a manner that prevents over-drinking.***

### **RECOMMENDED PRACTICES**

- a. adapt the feeding regimen to promote uniformity of bird weight gain
- b. provide water for at least two hours at usual feeding time and for at least one hour before lights-out
- c. utilize alternative feeding strategies that minimize restricted feeding and watering, as they become available (e.g. low energy diets)
- d. scatter-feed a diet with high levels of insoluble fibre. Scatter grit, oyster shells, or grains in the litter (3).

## 5

# Flock Health Management

Disease control is an integral part of bird welfare. Good flock health management incorporates practices that are designed to optimize the health and welfare of poultry. Integrating the three key pillars of monitoring, recording, and managing flock health enables producers to assess practices to correct deficiencies and/or improve health and welfare outcomes.

Pain and discomfort caused by health issues impact bird well-being such that good welfare requires good health.

## 5.1 Flock Health Plan

An effective Flock Health Plan contributes to bird well-being by providing strategies for disease prevention, rapid diagnosis, and effective treatment. Prevention of disease rather than treatment is better for bird welfare. Sanitation measures will help to prevent disease transfer from one flock to the next (19). Isolating poultry flocks from other animals (e.g. wild birds, rodents, insects, pets) reduces the opportunity for disease transmission (19). Humans can also transmit diseases to a poultry flock (19). A poultry veterinarian can assist with recommending appropriate vaccinations (19) to prevent infectious diseases as well as internal and external parasitism.

A Flock Health Plan may include:

- vaccination protocols
- protocols for dealing with internal and external parasites
- observation of all birds for injury or signs of disease
- complete, accurate, and reliable record keeping
- protocols for the prevention, detection, and treatment of disease or injury, including setting targets for measuring incidences of disease and injuries
- protocols for pest control
- protocols for individual bird or group identification and treatment records
- training programs and protocols for handlers
- protocols for introducing new birds to the flock
- protocols for managing sick and injured birds
- protocols for culling birds, including at the end of production cycles
- a record of deaths that occur on-farm for purposes of tracking mortality rates
- protocols for on-farm biosecurity.

Veterinarians play a key role in helping producers attain flock health objectives. While veterinarians are often called after animals are sick or injured, they can play a valuable role on a proactive basis by helping with the development and design of production systems and prevention practices, and should be considered to be part of the flocks' health management team.

### REQUIREMENTS

***A working relationship with a veterinarian must be established.***

### RECOMMENDED PRACTICES

- a. track bird health and consult with a veterinarian when disease is suspected
- b. have a written emergency response/self-quarantine protocol. Refer to *Appendix F - Producer Self-Quarantine Protocol*.

## 5.2 Disease Prevention

Biosecurity is the accepted term used to describe the measures needed to protect against the introduction and spread of diseases (20). An effective biosecurity program is based on two main concepts: i) Exclusion (keeping disease out of the flock) and ii) Containment (preventing disease spread within premises or to other flocks) (21). Consultation with a poultry veterinarian or a qualified advisor can assist with developing a biosecurity program to suit specific situations and needs (21).

Each poultry sector has developed comprehensive biosecurity standards, which include detailed sections on disease prevention that commercial producers are required to follow. These protocols are based on the Canadian Food Inspection Agency's (CFIA) Biosecurity Standards. For non-commercial operations, refer to *Appendix K - Resources for Further Information* for references on developing a biosecurity program. Manuals can be obtained from provincial marketing boards.

Biosecurity protocols can include:

- creating a perimeter around the area where birds are housed to limit the spread of disease
- managing the site with an “all-in/all-out” approach to facilitate effective cleaning
- the use of strict hygiene and sanitation procedures for all individuals who are in contact with the birds
- cleaning facilities and equipment to prepare for receiving birds
- developing a sanitation program for the premises, buildings, equipment, and vehicles
- allowing only necessary personnel 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 (22)
- avoiding contact with poultry stock from other premises wherever possible, particularly on premises where strict sanitary measures (e.g. complete change of clothing; shower-in, shower-out) are not enforced
- ensuring visitors are in compliance with the farm disease prevention or biosecurity protocols
- minimizing the movement of equipment and personnel between buildings
- wearing clean gloves or washing hands before handling birds
- changing or covering footwear upon entering poultry buildings.

It is important to be aware of general clinical signs of disease in birds. Early detection can limit the impact of a disease outbreak (21).

People, including on-farm personnel and visitors, may inadvertently carry infectious agents into the poultry operation.

### REQUIREMENTS

***A disease prevention or biosecurity protocol must be developed and followed.***

### RECOMMENDED PRACTICES

- a. review the disease prevention or biosecurity protocol regularly, and update as deemed necessary
- b. ensure that all farm personnel are aware of and understand their responsibilities in adhering to the disease prevention or biosecurity protocol.

#### 5.2.1 Sanitation

Facilities and equipment need to be cleaned and sanitized regularly to prevent the accumulation of organic waste and potentially infectious agents in the birds' environments.

Effective sanitation measures will help to prevent disease transfer from one flock to the next (19).

Disinfectants are most effective when used on clean surfaces free of organic material such as straw and manure.

If outdoor ranges are used, they also should be kept clean. It is beneficial to allow range areas to dry thoroughly prior to bird placement (19).

### **REQUIREMENTS**

***Buildings and equipment must be cleaned and a disinfectant applied following an outbreak of an infectious disease.***

### **RECOMMENDED PRACTICES**

- a. follow veterinary advice regarding downtime following the outbreak of a disease
- b. clean and sanitize buildings and equipment between flocks.

## **5.2.2 Pest Control**

Rodents, wild birds, and insects can carry infectious disease into poultry operations. Monitoring barns is an important step in preventing and/or controlling rodent populations (23). Damage caused by rodents takes many forms, including consumption and contamination of feed, as well as damage to buildings and insulation. Directly related to health, rodents are carriers of many diseases, which have an impact on biosecurity (23).

It is important to be able to recognize the signs of rodent infestation. Refer to *Appendix K - Resources for Further Information*. Given the extreme difficulty of eliminating rodents, prevention should be the primary objective. Management programs that eliminate entrances, nesting sites, and food and water supplies (23) can help to reduce rodent numbers.

A pest control plan can include:

- monitoring facilities for signs of pest infestation on a regular basis
- eliminating or reducing the number of places rodents can use for shelter (e.g. clutter, garbage, heavy vegetation around buildings)
- storing feed in rodent-proof facilities (e.g. keep feed and garbage bins covered, prevent spillage, make structures rodent-proof)
- preventing wild birds from entering barns (e.g. check and repair intake screens)
- keeping on-farm storage facilities for items such as bedding and crates dry and inaccessible to wild birds and other pests.

### **REQUIREMENTS**

***A plan to prevent and control pests including rodents, small animals, wild birds, insects, and predators must be developed and followed.***

## **5.3 Protecting Bird Health**

Preventing flock health problems is always preferable to having to deal with established problems. There are strategies available to maintain flock health and prevent illnesses (e.g. sanitation, monitoring, biosecurity, vaccination, probiotics, medications).

## **RECOMMENDED PRACTICES**

- a. consult with hatchery or veterinarian for the recommended vaccination schedule
- b. ensure that personnel who work with poultry understand poultry behaviour and can recognize obvious behavioural signs that indicate health problems and/or discomfort
- c. be aware of potential regional or flock-specific risks to bird health that might require preventative measures.

### **5.3.1 Health Monitoring**

Regular monitoring is essential for the early detection and correction of any flock health or management issues. Video surveillance in barns is a helpful tool for producers and can assist in observation and management of flocks with minimal disruption to the birds.

When inspecting the flock, personnel should look for:

- sick or injured birds
- abnormal respiratory sounds/open mouth breathing
- signs of lameness and inability to rise
- poor body condition
- poor feather condition or coverage
- behaviour
- distribution of birds throughout the barn
- access to and availability of feed and water
- proper operation of equipment
- litter quality and environmental conditions
- dead birds.

In addition, personnel should check for early signs of disease. These signs may include unexplained increases in mortality, or changes in feed/water consumption or egg production. Tracking the number of culls and the reason for doing so (e.g. sick, not eating, lame) can be helpful in identifying management practices that need to be improved. Lameness affects the welfare of birds through leg pain and impaired walking ability (8).

## **REQUIREMENTS**

***Flock Inspections must be conducted at least twice daily***

***Mortalities and culls must be recorded daily.***

***Cases involving unexpected illness, death, or increases in mortality rates must be investigated (e.g. consult a veterinarian, submit samples to a lab).***

***Dead birds must be removed and disposed of daily.***

## **RECOMMENDED PRACTICES**

- a. increase frequency of inspections to more than twice daily
- b. if unexplained mortality in a barn increases within a 24 hour period, consult a veterinarian
- c. monitor feed and water intake closely as early indicators of possible health issues
- d. monitor birds for signs of lameness or immobility as early indicators of possible health issues. Consult a veterinarian to help identify possible causes, treatment, and/or strategies for prevention
- e. check birds regularly for parasites. If parasites are detected, administer corrective treatment as soon as possible
- f. conduct inspections in a manner that does not startle the birds



- g. consult other advisors (e.g. hatchery, nutritionist, feed company representative, primary breeder company, other producers) as needed to address health issues related to flock management
- h. maintain accurate flock management and health records (including unusual events such as illness or mortalities, weather events, equipment issues, etc.).

### 5.3.2 Managing Sick or Injured Birds

Flock owners, veterinarians, and laboratories are required to immediately report a bird that is infected or suspected of being infected with a reportable disease to a Canadian Food Inspection Agency (CFIA) District Veterinarian. Reportable diseases are listed in the Reportable Diseases Regulations under the Health of Animals Act. Refer to *Appendix K - Resources for Further Information*.

#### REQUIREMENTS

***Sick or injured birds and birds that exhibit obvious signs of pain must be promptly treated or euthanized (Refer to Section 8 - Euthanasia).***

***Birds that are severely lame must be treated, moved to a recovery pen, or euthanized.***

***Any suspected cases of reportable diseases must be reported to a veterinarian immediately.***

#### RECOMMENDED PRACTICES

- a. monitor the progress of treated birds. If the initial treatment protocol fails, then reassess treatment options (seek veterinary advice), or euthanize
- b. keep records to evaluate the success of treatment regimens for sick or injured birds.

## 5.4 Emergency Management and Preparedness

Emergency management protocols can protect the welfare of birds in the event of an emergency (e.g. power failure, fire, flooding, inclement weather).

Hatcheries and farms generally rely on automated equipment to maintain suitable conditions for hatching eggs, chicks, poults, and birds. They are therefore susceptible to risk during a power outage or equipment breakdown. It is advisable to have alarms to notify personnel of equipment malfunctions as well as generators to provide electricity in the case of a power outage.

Preparedness includes installation, maintenance, and testing of necessary equipment or systems, and personnel awareness. Refer to *Appendix G - Sample Emergency Contact Template* that may be copied, completed, laminated, and posted in each barn.

#### REQUIREMENTS

***A contingency plan for reasonably foreseeable problems that may affect bird welfare must be prepared and reviewed with all personnel.***

***Emergency contact information must be readily available.***

***At least one responsible individual must be available at all times to take necessary steps in the case of an emergency.***

***A backup power system or an alternate method must be available to ensure bird well-being during a power outage.***

***All alarms and fail-safe devices, including alternate power supply, must be regularly tested.***

***Additional requirements for hatcheries***

***An alarm or monitoring system must be used to alert hatchery personnel of failures of critical systems such as heat or electricity.***

**RECOMMENDED PRACTICES**

- a. install and maintain the appropriate number of fire extinguishers in each building housing birds
- b. ensure an adequate supply of feed and water is on hand in case of predicted extremes in weather (or other events) that might interrupt regular deliveries
- c. develop a backup plan to make sure that water is readily available in case of interruptions in the water supply.

## 6

## Husbandry Practices

## 6.1 Stockmanship and Bird Handling

Correct handling methods are essential to prevent stress and injury, and to allow personnel to effectively monitor the health of the flock. Being in an inverted position (upside down) for any length of time is stressful for birds and can cause discomfort (24).

**REQUIREMENTS**

***Birds must be handled at all times in such a manner that minimizes stress or injury. Birds must not be carried solely by the head, neck, one wing, or tail feathers.***

**RECOMMENDED PRACTICES**

- a. minimize time holding or carrying birds
- b. carry birds in an upright position
- c. wear clothing of uniform appearance during the whole production cycle to minimize excitement of the birds when personnel enter the facilities
- d. perform routine activities consistently
- e. ensure that the movement of people and equipment within the barn is quiet and smooth
- f. give an easily perceptible signal to the birds before entering the barn to prevent them from being startled. This practice is particularly important when the light intensity or noise is greater outside the barn than inside
- g. release chickens by setting them down on their feet or from low heights that enable them to land normally, feet first. Avoid releasing in such a way that requires flying
- h. carry heavy turkeys by both legs and one wing, and release gently on the floor on their breasts
- i. gently set small turkeys down on their feet or their breasts.

## 6.2 Receiving and Brooding Chicks and Poults

Special care needs to be taken to ensure that newly-arrived chicks and poults settle in well to their new environments. They need to be protected from abrupt changes in temperature and be able to locate feed and water.

Feedback on chick and poult condition, mortality, and performance can help hatcheries evaluate their management and transport protocols.

Evaluation criteria could include:

- alertness: an alert chick or poult has wide-open bright eyes and appears curious
- vigour: a vigorous chick or poult is instantly active when disturbed and shows no sign of weakness
- condition: a chick or poult in good condition will be firm. The fluff will not be matted, there will be no signs of dehydration, and the navel will be healed. An unhealed navel can become an early access route for bacterial infections. Chicks and poults must be handled in order to be evaluated for condition
- body temperature: the normal body temperature for poults is 39.4-40.6°C (102.9-105.1°F) and for chicks is 40.0-40.7°C (104.0-105.3°F)
- behaviour: chicks or poults should not show signs of distress (e.g. huddling, open-mouth breathing, excessive vocalization)
- normalcy: A normal chick or poult has no apparent deformity or abnormality showing. Apparent abnormalities can be twisted toes or beaks, crippled or straddled legs, etc.

## REQUIREMENTS

***Facilities must be prepared (i.e. heat, clean, feed, water, bedding) in advance of receiving chicks and poults so that they can be placed promptly after arrival.***

***Farm personnel must be present at the time of delivery and placement and must assess the physical condition of the chicks and poults.***

***Steps must be taken to prevent chicks and poults from becoming chilled or overheated during the unloading process.***

***Chicks and poults, as well as boxes with chicks or poults, must be kept, treated, and handled in ways that prevent injury and minimize stress.***

***Chicks and poults, as well as boxes with chicks or poults, must not be dropped from heights that may cause injury.***

## RECOMMENDED PRACTICES

- a. do not drop chicks and poults from heights exceeding 15 cm (5.9 in) onto a hard surface or 30 cm (11.8 in) onto a soft surface
- b. inspect chicks and poults immediately upon arrival. Document any problems and provide feedback to the hatchery
- c. provide supplementary feed and water sources (e.g. trays or paper, jugs or bottles) to ensure that chicks and poults can locate feed and water easily
- d. monitor chicks and poults to ensure that they can access feed and water
- e. check chicks more than twice daily during brooding. Poults may need to be checked more frequently
- f. increase the frequency of monitoring if any of the following are observed: huddling or piling, inactivity, numerous flip-overs (poults), high early mortality, or problems with equipment
- g. prevent chicks and poults from crowding or piling on top of each other in the corners of floor pens
- h. confirm brooding area temperatures at chick/poult level

### **Additional recommended practices for poults**

- i. use circular or oval brooder rings for the first seven days of life
- j. ensure that heaters are suspended above the centre of each brooder ring.

## 6.3 Transferring Birds

Some birds may be moved between facilities (e.g. to grow-out or breeding barns) on-farm or from other operations (Refer to *Section 7 - Transportation*). This may be a stressful period for the birds.

Special care needs to be taken to ensure that newly-arrived birds settle in well to their new environments. They need to be protected from abrupt changes in temperature, be able to locate feed and water, and adapt to their new physical and social environments.

### REQUIREMENTS

***Housing facilities must be prepared (e.g. heat, feed, water) to receive birds in advance of their arrival.***

***Farm personnel must be present at the time of delivery and placement to assess the physical condition of the birds.***

### RECOMMENDED PRACTICES

- a. inspect birds immediately upon arrival and monitor frequently to ensure that they adapt to their new physical and social environments and that they are able to locate and access feed and water
- b. choose time of transfer according to the weather. Avoid moving birds during periods of extreme heat. Transferring breeders as early in the day as possible will allow them to settle in
- c. avoid stresses such as vaccination or beak trimming in the 10 days prior to transfer.

## 6.4 Reproductive Management: Broiler Breeders

Broiler breeders are bred naturally by keeping mixed pens of hens and roosters. The ratio of roosters to hens is important to ensure efficient reproduction and a stable social hierarchy. The appropriate proportion of roosters in a group will vary with bird strain, but typically ranges between 6-10% roosters. Pens with too many roosters may show higher levels of aggression, and hens may be stressed by too many mating attempts. It is also important that hens and roosters be at compatible stages of maturity and body size.

Pullets and roosters may be reared separately and mixed together in the laying barn. In addition, spiker roosters may be introduced into hen groups throughout the laying period. It is important to verify that the vaccination programs for the pullet/hens and rooster groups are compatible prior to mixing in order to protect the health and welfare of the birds during the laying stage.

Some birds bought as hens turn out to be roosters, and if kept in the flock will modify the ratio of roosters to hens and will affect feed allocation and aggression. In addition, keeping mis-sexed roosters in the flock may result in injuries to hens because toe treatments have not been carried out.

### REQUIREMENTS

***Growing, feeding, and lighting programs must be managed so that females reach maturity concurrent with or prior to males.***

***Social interactions between males and females must be monitored. If hens are actively avoiding roosters, then reduce numbers of roosters until social interaction, including mating behaviour, is normal.***

### RECOMMENDED PRACTICES

- a. adjust reproductive management protocols to improve mating behaviour among broiler breeders in subsequent flocks
- b. remove mis-sexed birds
- c. introduce new roosters to pens shortly before lights go off in the evening to reduce fighting
- d. ensure that the vaccination programs of source groups is compatible before mixing birds. Consult your veterinarian
- e. remove overly-aggressive roosters.

## 6.5 Reproductive Management: Turkey Breeders

### 6.5.1 Semen Collection and Artificial Insemination

Due to their large size, turkey breeders are usually bred by artificial insemination. Hens in lay need to be handled gently at all times to protect their welfare and productivity.

#### REQUIREMENTS

***Tom turkeys and turkey hens must be handled in such a way as to prevent injury and minimize stress throughout all aspects of the semen collection and artificial insemination processes.***

#### RECOMMENDED PRACTICES

- a. do not overstimulate toms during collection, or injury may result. Rest for 3-4 days any toms that have shown cloacal bleeding during collection
- b. after collection, release toms slowly and gently back onto the floor.

### 6.5.2 Management of Broody Hens

Broody hens are those that cease laying, preferring to incubate the eggs instead. Preventing and managing broodiness to keep hens laying is an important part of turkey breeder production. Signs of broodiness may include increased nesting time, decline in egg production, protection of the nest, increased vocalizations, reduced feed intake, and reluctance to move (25). Factors that promote broodiness include early sexual maturity, hot weather, lack of uniform lighting or low light intensity, leaving eggs in the nests too long, pens with corners or secluded areas, and not forcing hens out of the nests at egg collection (25).

Broodiness is typically prevented by managing the hens' routines so that they do not become overly comfortable; this will deter them from settling down to brood their eggs. The challenge is to prevent broodiness without disturbing the hens to the point that they stop laying. Good nesting habits are typically established during the first three weeks of lay.

#### REQUIREMENTS

***Steps taken to discourage hens from engaging in broody behaviour must not compromise hens' welfare.***

#### RECOMMENDED PRACTICES

- a. implement a broodiness management program that includes monitoring the onset of sexual maturity in hens. Manage the laying environment and egg collection routine to prevent floor eggs and broodiness
- b. use broody pens to help in managing broody hens.

## 6.6 Hatching Egg Management

Proper handling and storage of hatching eggs is important to promote healthy embryo development and to minimize embryo mortality.

#### REQUIREMENTS

***Hatching eggs must be handled and stored in ways that promote healthy embryos.***

### **RECOMMENDED PRACTICES**

- a. collect eggs at least three times per day
- b. protect eggs from unintended fluctuations in temperature
- c. maintain relative humidity levels during egg storage that prevent excessive moisture loss
- d. clearly identify floor or washed eggs. Dispose of cracked and excessively dirty eggs
- e. tray eggs with the blunt end up
- f. consult the hatchery before cleaning or sanitizing eggs. Use an approved protocol as soon as possible after collection.

## **6.7 Managing Harmful Behaviour**

Feather pecking can be a problem in turkey flocks and breeder flocks, especially if it evolves into cannibalism. The underlying cause of this behaviour is poorly understood. However, there are several risk factors that may trigger outbreaks of feather pecking, especially if more than one contributing factor occurs at the same time (adapted from (8) (26)):

- moving birds from rearing accommodation to the breeding and laying quarters
- underweight or uneven flocks with large variations in bird weights
- stocking density
- changes in feed and/or nutritional deficiencies
- feed restriction
- changes in the environment: weather, sudden unexpected noises, equipment malfunctions, etc.
- disease and pest challenges, especially red mite and vermin
- changes in light intensity and lighting patterns.

Enrichment can play an important role in preventing and mitigating injurious feather pecking and cannibalism (27).

### **REQUIREMENTS**

***Action must be taken to manage bird behaviour at the onset of an outbreak of feather pecking or cannibalism.***

### **RECOMMENDED PRACTICES**

- a. remove overly-aggressive birds
- b. dim lights to control an outbreak of aggression for a short period of time when other interventions have failed and only as a last resort
- c. structure the rearing environment in a way that closely resembles the production environment. Factors to consider include types of feeders and waterers, light sources and intensities, diet form, and provision of perches and platforms
- d. consider that moving birds among groups will trigger readjustments in the established social hierarchy
- e. ensure that lighting is uniform throughout the bird areas. Avoid having bright spots or bright shafts of light in the pens, as these can trigger feather pecking outbreaks
- f. consider alternative lighting types
- g. ensure that the diet is nutritionally balanced
- h. minimize changes in the feeding routine
- i. feed diluted diets to offset the effects of controlled feeding regimens
- j. make every effort to manage breeders so that physical alterations, such as beak trimming, are not necessary
- k. provide enrichment (e.g. straw bales, other foraging material) to encourage redirection of feather pecking behaviour

1. where outbreaks have occurred, investigate possible factors (e.g. nutrition, lighting, enrichment, genetics, stocking density, male to female ratio) that can contribute to feather pecking and cannibalism and make adjustments for subsequent flocks.

## 6.8 Physical Alterations

Caponizing is the procedure of removing the testicles of roosters to influence their growth and resulting meat quality. Because birds' testicles are internal, castration is a surgical procedure, traditionally performed without anaesthesia. It is therefore an invasive, painful process. This procedure is not typically performed in Canada.

To prevent outbreaks of feather pecking, breeder chicks and poults are often beak treated in hatcheries and occasionally trimmed as adults, if needed. There is less pain and fewer complications associated with initial beak treatments that are done early in life at the hatchery, even when re-trimming later in life is needed, as opposed to performing initial trimming on farm when birds are older (28) (29) (30).

Genetics and management may affect whether such alterations are of benefit for the specific birds on a given farm (9).

### REQUIREMENTS

***Roosters must not be caponized unless under veterinary supervision, using pain control.***

***Beak trimming must be carried out only by competent persons.***

***Initial beak trimming must not be performed on broiler breeders that are older than 10 days of age, unless required to control an outbreak of cannibalism.***

***Equipment must be properly maintained and adjusted prior to performing any beak treatments.***

### RECOMMENDED PRACTICES

- a. do not trim beaks more than the regrowth so that 6 mm (~1/4") is the maximum difference between the upper and lower beaks when re-trimming beaks on turkey breeders
- b. perform physical alterations early in life to reduce the risk and severity of secondary effects and to ensure the shortest recovery time
- c. ensure that beak treatment for turkey breeders, when deemed necessary, has been performed at the hatchery. Alternatively, perform initial beak trimming prior to 10 days of age
- d. adopt management practices that reduce the need for physical alterations.

## 6.9 Controlled Moulting

Controlled moulting induced through feed and water deprivation is not practiced in Canada and is not recognized as a good production practice. However, in the event of a situation that endangers the survival of a strain or line, threatens the supply of hatching eggs, and consequently where the life of a breeder flock must be extended, controlled moulting may be undertaken on healthy birds under the supervision of a poultry veterinarian. Techniques that involve feed or water deprivation adversely affect the well-being of birds (31). Methods other than extended feed and water deprivation are available for controlled moulting. Controlled moulting can be accomplished primarily with lighting programs and diet formulation.



**REQUIREMENTS**

***Controlled moulting practices must be performed under veterinary supervision. Only healthy birds must be selected for moulting.***

***Feed or water must not be withdrawn to initiate moulting.***

## 7

# Transportation

Poultry transportation is a shared responsibility between all stakeholders. This Code focuses on the aspects of the transportation process that take place on-farm and are thus under the control of the producer. Information regarding transportation of poultry beyond the farm gate is covered in the *Recommended Code of Practice for the Care and Handling of Farm Animals: Transportation*. Refer to *Appendix K - Resources for Further Information*. Additional provisions pertinent to transportation of hatching eggs, chicks, and poults are dealt with in the Hatchery section of this Code.

It is recognized that by its very nature, the transportation process (which includes catching, loading, transporting, and lairage) includes stress and risk of injury (32).

The federal requirements for animal transport are covered under the *Health of Animals Regulations, Part XII (Transport of Animals)* (10).

## 7.1 Evaluation for Transport

Every effort should be made to only load birds that have the capacity to withstand the expected duration of the transport process. Incapacity may be due to injury, fatigue, poor health, distress, or any other cause. The welfare of the birds must be the first consideration. It is acknowledged that poultry producers often deal with large numbers of birds, which makes inspection of individual birds difficult.

During cool and cold conditions, appropriate procedures are needed if birds are wet to prevent hypothermia during transport (e.g. add litter to wet spots in the barn, fence off wet spots, adjust ventilation).

### REQUIREMENTS

***In preparation for transport, the flock must be evaluated for fitness and those birds that are deemed unfit for transport must be euthanized, separated, or transported with special provisions<sup>1</sup> for veterinary assessment or treatment only.***

***Wet birds are compromised<sup>2</sup> and must not be loaded in cold weather if there is a risk that birds will become chilled.***

### RECOMMENDED PRACTICES

- a. acclimatize housed birds gradually to cooler temperatures prior to catching and loading
- b. communicate with the transporter and/or processor about any changes in flock condition prior to loading
- c. follow processors' guidance regarding the acceptable size range for birds shipped.

## 7.2 Preparing for Loading and Transport

### 7.2.1 Pre-Loading Considerations

The welfare of birds can be adversely affected by delays. Stakeholders should adjust loading, departure, and transit times or routes to avoid potential delays.

<sup>1</sup> Section 139 (2) in Part XII (Transport of Animals) of the Health of Animals Regulations specifies four conditions that must be met when transporting unfit animals for veterinary care (10).  
<sup>2</sup> Section 136 (1) in Part XII (Transport of Animals) of the Health of Animals Regulations defines "compromised". Section 140 (1) (c) (d) specifies conditions that must be met when transporting compromised animals (10).

Environmental conditions can significantly affect the comfort and welfare of birds during loading and transit. Handling procedures, loading densities, and time of loading may need to be adjusted accordingly.

### **REQUIREMENTS**

***The flock and environmental conditions, as well as the expected journey duration, must be taken into consideration when loading birds for transport.***

***The number of birds in each container must be determined prior to loading, taking into consideration the available container floor space, body size/weight, prevailing environmental conditions, and duration of transport.***

### **RECOMMENDED PRACTICES**

- a. adjust time of day for loading to protect bird welfare when necessary (e.g. forecasted weather conditions, processor delays)
- b. reduce loading densities during hot weather. Refer to *Appendix H - Humidex Guidelines for Loading Poultry*.

## **7.2.2 Feed and Water: Pre-Loading**

Feed is typically withdrawn from birds ahead of transport to ensure that their digestive tracts are empty, to reduce the risk of contamination of carcasses during slaughter. Withdrawal times are usually determined by the processor. However, total withdrawal times should not be so excessive as to negatively affect bird welfare (i.e. hunger).

When planning feed removal on-farm, it is important to consider several factors that impact bird welfare, such as amount of time required to empty the gut prior to processing, amount of time required for catching and loading, distance to plant and expected duration of travel, expected lairage, and expected processing time. Length of time animals are considered to be without feed and water is covered under the *Health of Animals Regulations, Part XII (Transport of Animals) (10)*.

### **REQUIREMENTS**

***Pre-transport feed withdrawal must be managed to minimize the time that birds are off feed.***

***Water must be available to the birds until catching commences.***

### **RECOMMENDED PRACTICES**

- a. avoid feeding birds at least 3 hours and preferably no more than 6 hours prior to catching. Aim to prevent birds from being without feed for more than 24 hours in total prior to expected time of processing.

## **7.2.3 Birds Left in Barns**

A daily inspection and culling program is an important part of flock management. It will reduce culling prior to and after loading and improve the efficiency of the catching and loading processes. Despite pre-transport culling, there will likely be some birds that are deemed unfit for transport or non-saleable during catching and loading.

### **REQUIREMENTS**

***Birds that are not loaded for transport and not euthanized must continue to be cared for in accordance with relevant sections of this Code (e.g. feed and water, temperature, ventilation).***

### 7.3 Catching, Loading, and Unloading Procedures

Careful handling of birds during catching, loading, and unloading will reduce fear and minimize injuries to birds. Refer to *Appendix K - Resources for Further Information*.

Heavy turkeys may have difficulty walking long distances. Turkeys that are reluctant to walk are not necessarily lame, and may simply need to rest.

#### REQUIREMENTS

***Catching crews must be supervised by a competent individual.***

***Birds must be handled in such a manner that minimizes stress and/or injury. Birds must not be carried solely by the head, neck, one wing, or tail feathers.***

***Producer or a competent designee must be readily available to provide assistance throughout the catching and loading process.***

***All catching and loading equipment must be operated by competent personnel.***

***The catching area must promote safe and humane handling and catching (e.g. lift or remove feeders and waterers prior to catching).***

***Birds must be in an upright position after being loaded into containers.***

***Containers with birds must be handled, moved, and secured to vehicles in a manner that prevents them from moving during transport and minimizes stress and/or injury to birds<sup>3</sup>.***

***Birds must be loaded in containers in such a way that permits all of them to rest on the floor at the same time when evenly distributed, while preventing excessive movement within the container.***

***Parts of birds must not protrude from containers in any way that can cause injury or impede movement.***

#### RECOMMENDED PRACTICES

- a. ensure that a farm representative (e.g. owner, worker) observes the catching and loading process to ensure humane handling of the birds and intervenes as necessary
- b. adjust barn fans and other equipment to prevent air from blowing on birds loaded on trucks in cold weather conditions
- c. ensure that catching and loading take place in a timely and efficient manner to minimize bird stress
- d. lower the light intensity where possible or use blue light during catching to reduce stress on the birds
- e. use corralling to control movement and prevent overcrowding of birds
- f. locate containers as close to the birds as possible to minimize handling
- g. ensure that birds are caught and carried appropriately for their species and weight and catcher capabilities
- h. minimize passing of birds among handlers
- i. monitor worker fatigue as it can negatively affect bird welfare
- j. move heavy turkeys in small groups to help prevent piling and exhaustion
- k. during hot weather, avoid loading during the hottest part of the day. When possible, arrange to load birds during the night
- l. protect birds from becoming wet during loading and unloading in cold conditions
- m. check the load and surrounding area for loose birds before the vehicle moves.

<sup>3</sup> Section 150 (4) in Part XII (Transport of Animals) of the Health of Animals Regulations states that "no person shall confine or transport an animal in a container unless the container is secured to the conveyance in a manner that prevents it from moving during transport" (10).

## 7.4 Catching and Loading/Unloading Equipment and Containers

It is important that the equipment and containers that are used and the procedures in place for loading and unloading birds minimize stress and/or injury to the birds.

### REQUIREMENTS

***The design, construction, space, state of repair, and use of containers and equipment must allow the birds to be loaded, conveyed, and unloaded in ways that minimize stress and/or injury.***

***Conveyors used for loading containers of live birds must prevent tilting of containers that causes birds to pile up.***

### RECOMMENDED PRACTICES

- a. utilize containers that allow for continuous air flow.

## 7.5 Facilities Design and Maintenance

Proper building design and accessibility to transport vehicles greatly improves the humane handling of poultry. This includes interior and exterior design, and maintenance of buildings, yards, and loading areas to facilitate loading and unloading of poultry at all times of the year and in all weather conditions.

### REQUIREMENTS

***When building new barns or renovating existing barns or yards, the way in which birds are moved into and out of barns must be taken into consideration with a view to facilitating safe and humane transfer of birds to and from the transport vehicles (e.g. tractor-trailer).***

***Openings through which birds are passed must be large enough to ensure that birds can be transferred in a way that minimizes injury.***

***Driveways and yards must be maintained to facilitate unobstructed, safe, and easy access by transport vehicles.***

### RECOMMENDED PRACTICES

- a. consult with stakeholders (e.g. processors, catchers, transporters) when building new barns or renovating existing barns or yards to ensure that the facilities can safely accommodate vehicles and equipment
- b. ensure that building design discourages transfer of birds between handlers
- c. adapt building design to the catching and loading equipment used, and have sufficient number and size of doors or openings
- d. maintain level and safe driveways and yards by regular grading, snow removal, and salting and/or sanding
- e. ensure that loading/unloading areas, lighting, and equipment permit efficient and humane bird handling
- f. design facilities to minimize the risk of birds getting wet during the loading process
- g. protect doorways from falling ice and snow.

## 8

## Euthanasia

Euthanasia is defined as the “ending of the life of an individual animal in a way that minimizes or eliminates pain and distress” (33). It is characterized by rapid, irreversible unconsciousness (insensibility), followed by prompt death (34) (35).

To alleviate pain and suffering when there is no reasonable prospect for recovery, euthanasia of birds is necessary.

Having a euthanasia decision-making process and providing training in euthanasia techniques can help ensure that necessary euthanasia is carried out in a timely manner. Protocols that include irreversible stunning of birds prior to the final kill step may assist in effective euthanasia.

### 8.1 Euthanasia at Hatcheries

Hatcheries euthanize chicks and poults that are injured, malformed, or suffering, and those otherwise unsaleable. Some unhatched eggs will contain live embryos that may need to be euthanized. Unhatched embryos that have passed the halfway point of incubation are sufficiently developed to be sensible to pain (4).

#### REQUIREMENTS

***An acceptable method for euthanizing chicks and poults must be used. Refer to Appendix B - Methods of Euthanasia.***

***Eggs with the possibility of live embryos that have been culled must be euthanized. Refer to Appendix B - Methods of Euthanasia.***

### 8.2 Decision-Making around Euthanasia

It is important that everyone who works with birds be trained to recognize normal behaviour as well as signs of pain, injury, illness, and distress that indicate that euthanasia may be necessary.

It is important to euthanize without delay birds that:

- are unlikely to recover, or
- fail to respond to treatment and recovery protocols, or
- have signs of chronic, severe, or debilitating pain and distress, or
- are unable to access feed and water, or
- are unable to stand or walk, or
- show marked weight loss/loss of body condition.

Developing a euthanasia decision protocol can provide guidance for personnel in making consistent decisions on when birds need to be euthanized. Refer to *Appendix I - Example Euthanasia Decision Guidance*.

#### REQUIREMENTS

***Personnel must be competent in making timely euthanasia decisions.***

***Sick or injured birds and birds that exhibit obvious signs of pain must be promptly treated or euthanized by competent personnel.***

***Birds that are isolated for observation must be monitored at least twice daily and reassessed for continued recovery, or euthanized.***

### RECOMMENDED PRACTICES

- a. have written guidelines to assist personnel in making decisions about euthanasia. Refer to *Appendix I - Example Euthanasia Decision Guidance*
- b. refer to *Appendix J - Timely Euthanasia of Compromised Chicks/Poults* for more information on identifying chicks and poults that should be euthanized.

## 8.3 Skills and Knowledge Related to Euthanasia

The successful application of any euthanasia method depends on many factors, including the competence and commitment of the personnel carrying out the procedure (33). Personnel who are tasked with euthanizing birds need to be trained and monitored periodically to ensure continued competence. Personnel need to understand the importance of timely and effective euthanasia in reducing animal suffering.

Not all personnel working with birds are suited to euthanizing birds or have the required physical strength or abilities. This may impact the efficacy of the euthanasia method. Operator fatigue may impact animal welfare (33). Attitudes towards euthanasia should be monitored to ensure that personnel are comfortable with the methods being used.

Training/competency includes but is not limited to methods of euthanasia, assessing insensibility and death, use and maintenance of equipment, and disposal of carcasses.

### REQUIREMENTS

***All individuals who perform euthanasia must be competent in the euthanasia methods and protocols used on-farm.***

### RECOMMENDED PRACTICES

- a. arrange for newly-trained employees who will be tasked with euthanasia to demonstrate their competence on dead birds before attempting a method on live birds
- b. supervise employees until they are proven to be competent in their ability to euthanize birds in accordance with approved protocols
- c. evaluate the abilities/competence of individuals who perform euthanasia on birds at least annually
- d. develop euthanasia protocols and review them annually. Review protocols with personnel and update personnel on any changes resulting from annual reviews.

## 8.4 Methods of Euthanasia

Many factors must be taken into account when selecting a method of euthanasia. Regardless of the method chosen, the determinant of success is whether the method can be consistently applied and the bird loses consciousness rapidly, with minimal pain and distress.

When choosing a method of euthanasia, consider the following (adapted from 36):

- amount of pain and distress induced by the euthanasia method
- size or weight of birds
- amount of restraint required
- skill and comfort level of the person performing the specific euthanasia method; impact on personnel
- ready access to necessary equipment for timely euthanasia in all locations
- human safety
- carcass use and disposal.

### REQUIREMENTS

***An appropriate method for euthanizing birds, as contained in Appendix B - Methods of Euthanasia, must be used.***

***Prior to being euthanized, birds must be handled in a manner that minimizes pain and suffering.***

***All equipment used for euthanasia must be well maintained, used correctly, and not overloaded, so that it operates effectively and efficiently.***

### RECOMMENDED PRACTICES

- a. have a backup euthanasia method readily available
- b. clean euthanasia equipment as needed to maintain its efficacy
- c. evaluate causes of ineffective euthanasia (e.g. operator error, equipment failure) and take remedial action.

## 8.5 Confirmation of Insensibility and Death

Death may not occur immediately but is the result of eventual respiratory and cardiac failure, which can take several minutes (36). It is therefore essential that birds be swiftly rendered insensible and remain so until death. For this reason, euthanasia methods that affect the brain first are preferred (34).

Immediate application of the same or an alternate approved euthanasia method is required when signs of sensibility are observed. Signs of sensibility include:

- bird blinks when the surface of the eye is touched (corneal reflex)
- rhythmic breathing (check for abdominal movement in the vent area)
- vocalization (other than an exhalation that occurs as the lungs deflate)

Absence of these signs indicates that the bird is insensible. Death is confirmed by cessation of breathing and heartbeat. It is not necessary to assess for sensibility or confirm death when maceration or decapitation is used due to the proven consistency of these methods.

### REQUIREMENTS

***Birds must be inspected for signs of sensibility after the euthanasia method has been applied.***

***If signs of sensibility are observed after the application of a euthanasia method, a second application of the euthanasia method or an alternate method must be immediately administered.***

***Death must be confirmed before leaving birds and disposing of carcasses.***



## 9

# Mass Depopulation

Mass depopulation refers to killing entire flocks or large numbers of birds. Typically, mass depopulation on-farm is an infrequent practice; however, in some cases, large numbers of birds are required to be depopulated on-farm in an emergency such as a disease outbreak or natural disaster. In addition, unexpected events (e.g. labour or market disruptions, extreme weather, food safety) as well as routine end-of-production breeder flock termination (e.g. no access to local processor) may necessitate depopulating entire flocks or large numbers of birds in one event.

In some cases, government representatives may be involved in the decision-making and depopulation processes. Depopulating an entire flock or group of birds may employ euthanasia techniques, but not all methods used for mass depopulation meet the criteria for euthanasia (33). Despite this, the methods employed for depopulating large numbers of birds need to be as humane as possible given the situation.

A plan for depopulating entire flocks or large numbers of birds provides guidance in the event of a disease outbreak or other unexpected disaster. Plans will need to be reviewed regularly and updated as needed as new and better methods are developed and approved.

The depopulation plan should include (adapted from (37)):

- depopulation method(s)
- biosecurity considerations
- identification of appropriately trained individuals to oversee and participate in the process
- reporting procedures to designated authorities
- safety procedures for personnel.

Those individuals who are involved with depopulating large numbers of birds, particularly when the birds are healthy, can suffer from emotional stress (38). Moreover, individuals may encounter physical fatigue, especially when physical methods are used. Both types of stress can have a negative impact on bird welfare during the depopulation event.

## REQUIREMENTS

***A mass depopulation plan must be available or accessible.***

***If not using a method listed in Appendix B - Methods of Euthanasia, methods for depopulating large groups of birds on-farm must be undertaken in consultation with a veterinarian.***

***Individuals who are involved in mass depopulation must be competent in the methods used.***

***All equipment used for depopulating birds must be maintained in good working order.***

***Death must be confirmed before disposal of birds.***

**RECOMMENDED PRACTICES**

- a. consult a veterinarian when developing the farm protocol for mass depopulation
- b. conduct a planning discussion with personnel to coordinate activities, review safety practices and expectations, etc. prior to scheduled mass depopulation event
- c. designate one competent individual who is knowledgeable about the procedure(s) being used and the associated risks to be in charge of the event
- d. coordinate observation by qualified and competent individuals, if mass depopulation is a first or infrequent event, to review and provide feedback on the impact of welfare outcomes
- e. develop a plan in advance of each mass depopulation event for the appropriate disposal of carcasses.



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# Sample Bird Welfare Policy

## **[Your Farm/Company] Employee Animal Care Code of Conduct**

### **Our commitment to our animals**

**[Our company/farm]** is committed to responsible farm animal care and handling. That means animals in our care deserve to be healthy, safe and well cared for.

### **Our commitment to our customers**

Working with animals is important work that we take seriously. We are proud of the work that we do, and we strictly enforce responsible farm animal care and handling among employees and service providers at our facility.

Every person who handles or comes into contact with an animal is required to support our core objective of responsible farm animal care and handling. The demonstration of that support is through the review and signing of this Code of Conduct agreement on a **[quarterly/annual]** basis.

### **Our commitment to our employees**

Your job is valuable and important to our animals, and our business. When you report an incident involving possible mistreatment, illness or injury involving one of our animals, we will take it seriously. We will document your concern. We will follow up to resolve the animal's situation, and/or provide additional training among employees.

### **Our employees' commitment to us**

Every one of our employees is required to handle and treat animals with respect and in accordance with [farm/company] policies and rules as well as the federal, provincial and municipal regulations under which we operate.

Any employee who is responsible for, observes or receives any information that alleges an animal on our property or in our care is being mistreated, mishandled or treated or handled in a way that is contrary to our animal care policy/guidelines must report that information to **[NAME OF POINT PERSON]** immediately so that the situation can be corrected. **[PROVIDE CONTACT INFO]**.

Failure to adhere to this agreement is cause for dismissal. **[Farm/company]** reserves the right to refer animal-abusers to law enforcement for prosecution.

I \_\_\_\_\_ understand and acknowledge that willful neglect, mishandling or abuse of animals by any [name of company] employee or witnessing it and not reporting it is subject to discipline including immediate termination of employment, and that offenders may also be subject to prosecution under applicable laws.

\_\_\_\_\_  
*Signature of Employee*

\_\_\_\_\_  
*Date*

\_\_\_\_\_  
*Name (Please Print)*

\_\_\_\_\_  
*Signature of Employer*

\_\_\_\_\_  
*Date*

\_\_\_\_\_  
*Name*

\_\_\_\_\_  
*Title*

**Important Note: Seek advice from your legal counsel and human resources department if appropriate to ensure any agreement meets relevant labour laws and union contracts.**

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## Methods of Euthanasia

The following chart lists acceptable methods of euthanasia of individual birds<sup>1</sup> for use on-farm and at hatcheries, as well as methods that are only considered acceptable with the noted conditions. The chart is based on the information that was available at the time of publishing. Further peer-reviewed research may result in new, acceptable equipment and/or euthanasia methods, or the elimination of some currently accepted practices. For any method to be considered acceptable, it must result in rapid loss of sensibility and the bird must not return to sensibility prior to death. Therefore, when physical methods are used, those methods that result in immediate, severe, and irreversible damage to the brain are preferred (34). Effectiveness of all euthanasia methods may be compromised by operator fatigue when euthanizing large numbers of birds.

When equipment is used for euthanasia, it must be properly maintained, proven effective for the size and species of bird it is used for, and used in accordance with manufacturers' instructions, if applicable. Acceptable:

Individuals who euthanize birds must be competent in the appropriate methods, and in some cases a high level of technical skill is required. Some euthanasia methods may result in operator injury if used improperly.

<i>Euthanasia Method</i>	<i>Acceptability by Bird Type</i>	<i>Conditions</i>	<i>Comments</i>
<b>On-Farm</b>			
<b>Anesthetic Overdose</b>	<b>Acceptable: ➡</b> All Birds	<ul style="list-style-type: none"> <li>Administered under the direction of a licensed veterinarian only</li> </ul>	<ul style="list-style-type: none"> <li>Carcasses may be dangerous to scavengers and should not be submitted for normal rendering</li> </ul>
<b>Non-Penetrating Captive Bolt</b> <b>Penetrating Captive Bolt</b>	<b>Acceptable with Conditions: ➡</b> All Birds	<ul style="list-style-type: none"> <li>Correct placement of the device on the head is critical</li> <li>Humane restraint methods (e.g. 2 people, appropriate restraint device) may be necessary</li> </ul>	<ul style="list-style-type: none"> <li>May be more appropriate for large birds</li> </ul>
<b>Manual Blunt Force Trauma</b>	<b>Acceptable with Conditions: ➡</b> All Birds	<ul style="list-style-type: none"> <li>Humane restraint methods (e.g. 2 people, appropriate restraint device) are necessary</li> <li>The impact must be of sufficient force and accurately placed in order to result in immediate insensibility and death in a single blow</li> </ul>	<ul style="list-style-type: none"> <li>Alternative methods should be considered (e.g. non-penetrating captive bolt) due to the potential for incorrect application</li> </ul>
<b>Decapitation</b>	<b>Acceptable with Conditions:</b> All Birds	<ul style="list-style-type: none"> <li>Instrument must be sharp and of appropriate size</li> <li>Procedure must be carried out in one quick motion and result in a complete severance of the head</li> <li>Requires secure restraint of the bird</li> </ul>	<ul style="list-style-type: none"> <li>Need for environmental sanitation (blood)</li> <li>Risk of disease transmission via blood</li> </ul>

<sup>1</sup>Adapted from (8) (33) (37).



## Methods of Euthanasia (continued)

<i>Euthanasia Method</i>	<i>Acceptability by Bird Type</i>	<i>Conditions</i>	<i>Comments</i>
<b>Gas Inhalation: Nitrogen (N)</b>	Acceptable with Conditions: ➡ All Birds	<ul style="list-style-type: none"> <li>Requires specially-designed closed chamber to contain gas and ensure that oxygen levels remain below 5%</li> <li>Use pure nitrogen; do not use in mixtures with other gases</li> </ul>	<ul style="list-style-type: none"> <li>Not commonly used on-farm</li> <li>May reduce respiratory distress during loss of sensibility compared to other gases</li> <li>Birds may become sensible if gas concentration is not sufficiently high and if oxygen levels are not low enough. This may be difficult to achieve in an on-farm setting</li> <li>Birds may experience convulsions before becoming insensible</li> </ul>
<b>Gas Inhalation: Carbon Dioxide (CO<sub>2</sub>)</b>	Acceptable with Conditions: ➡ All Birds	<ul style="list-style-type: none"> <li>Requires specialized equipment (pressure-reducing regulator, CO<sub>2</sub> cylinder or tank) and a closed chamber to contain gas</li> <li>Gas must be supplied in a precisely regulated and purified form without contaminants or adulterants (33)</li> </ul>	<ul style="list-style-type: none"> <li>May cause brief periods of distress before birds become insensible</li> <li>Birds should be placed in the chamber in a single layer</li> <li>Use in a well-ventilated area for operator safety</li> </ul>
<b>Gas Inhalation: Carbon Monoxide (CO)</b>	Acceptable with Conditions: ➡ All Birds	<ul style="list-style-type: none"> <li>Requires specially-designed closed chamber to contain gas, along with a regulator and flow meter</li> </ul>	<ul style="list-style-type: none"> <li>Dangerous to operators and potentially explosive at high concentrations; therefore, producers are encouraged to find an alternative to CO gassing</li> <li>Use in a well-ventilated area for operator safety</li> </ul>
<b>Cervical Dislocation<sup>2</sup></b>			
<b>i) Manual</b>	Acceptable with Conditions: ➡ All Birds	<ul style="list-style-type: none"> <li>Crushing of the neck bones is unacceptable prior to loss of sensibility</li> <li>This method is restricted to smaller birds (e.g. ≤ 3 kg), although this may vary depending on operator ability</li> </ul>	<ul style="list-style-type: none"> <li>Performed correctly, cervical dislocation results in the luxation (dislocation) – never crushing – of the cervical vertebrae</li> <li>Alternative methods should be considered (e.g. non-penetrating captive bolt) as in some classes of poultry there is evidence that cervical dislocation may not cause rapid loss of sensibility</li> <li>The site of the dislocation should be as close to the head as possible</li> <li>Cervical dislocation is difficult to perform correctly in large birds, and therefore may not result in immediate loss of sensibility. It is recommended that larger birds be rendered insensible prior to applying cervical dislocation</li> </ul>
<b>ii) Mechanical</b>	Acceptable with Conditions: ➡ All Birds	<ul style="list-style-type: none"> <li>Crushing of the neck bones is unacceptable prior to loss of sensibility</li> <li>Device must be purpose-designed and appropriate for the size of bird</li> </ul>	
<b>Maceration</b>	Acceptable with Conditions: ➡ Chicks and Poults < 72 hours	<ul style="list-style-type: none"> <li>Must use properly maintained, proven effective, purpose-designed equipment that results in instantaneous and complete maceration</li> </ul>	<ul style="list-style-type: none"> <li>The number of birds/eggs entering the equipment at one time can influence the effectiveness of the equipment (8)</li> </ul>

<sup>2</sup>Dislocation of the head and neck to disrupt nervous tissue and blood vessels





## Methods of Euthanasia (continued)

<i>Euthanasia Method</i>	<i>Acceptability by Bird Type</i>	<i>Conditions</i>	<i>Comments</i>
<b>Hatcheries:</b> <ul style="list-style-type: none"> <li>• <i>Unhatched Chicks and Poults (&gt;50% of incubation)</i></li> <li>• <i>Chicks and Poults</i></li> </ul>			
<b>Anesthetic Overdose</b>	<b>Acceptable:</b> <b>Unhatched Chicks and Poults</b> <b>Chicks and Poults</b>	<ul style="list-style-type: none"> <li>• Administered under the direction of a licensed veterinarian only</li> </ul>	<ul style="list-style-type: none"> <li>• Carcasses may be dangerous to scavengers and should not be submitted for normal rendering</li> </ul>
<b>Decapitation</b>	<b>Acceptable with Conditions: ➡</b> <b>Unhatched Chicks and Poults</b> <b>Chicks and Poults</b>	<ul style="list-style-type: none"> <li>• Instrument must be sharp and of appropriate size</li> <li>• Procedure must be carried out in one quick motion and result in a complete severance of the head</li> <li>• Requires secure restraint of the head</li> </ul>	<ul style="list-style-type: none"> <li>• Need for environmental sanitation (blood)</li> <li>• Risk of disease transmission via blood</li> <li>• Effective application may be compromised if operator is fatigued or large numbers of birds are to be euthanized</li> </ul>
<b>Gas Inhalation: Carbon Dioxide (CO<sub>2</sub>)</b>	<b>Acceptable with Conditions: ➡</b> <b>Unhatched Chicks and Poults</b> <b>Chicks and Poults</b>	<ul style="list-style-type: none"> <li>• Requires specialized equipment (pressure-reducing regulator, CO<sub>2</sub> cylinder or tank) and a closed chamber to contain gas</li> <li>• Gas must be supplied in a precisely regulated and purified form without contaminants or adulterants (33)</li> <li>• Use and maintain equipment according to manufacturers' instructions, if applicable</li> <li>• Maintain equipment in good working order</li> </ul>	<ul style="list-style-type: none"> <li>• May cause brief periods of distress before birds lose consciousness</li> <li>• Prolonged exposure is required because they are resistant to CO<sub>2</sub> (33)</li> <li>• Birds should be placed in the chamber in a single layer</li> <li>• Must be used in a well-ventilated area for operator safety</li> </ul>
<b>Manual Cervical Dislocation</b>	<b>Acceptable with Conditions: ➡</b> <b>Chicks and Poults</b>	<ul style="list-style-type: none"> <li>• Crushing of the neck bones is unacceptable for conscious birds</li> </ul>	<ul style="list-style-type: none"> <li>• Alternative methods should be considered due to difficulty in checking for insensibility with very young chicks and poults</li> <li>• Performed correctly, cervical dislocation results in the luxation (dislocation) – never crushing – of the cervical vertebrae</li> <li>• The site of the dislocation should be as close to the head as possible</li> </ul>
<b>Maceration</b>	<b>Acceptable with Conditions: ➡</b> <b>Unhatched Chicks and Poults</b> <b>Chicks and Poults</b>	<ul style="list-style-type: none"> <li>• Must use properly maintained, proven effective, purpose-designed equipment that results in instantaneous and complete maceration</li> </ul>	<ul style="list-style-type: none"> <li>• The number of birds/eggs entering the equipment at one time can influence the effectiveness of the equipment (8)</li> </ul>

## Recommended Feeder and Drinker Spaces for Broiler Chickens



Basic guidelines for feed and water access for broiler chickens. Manufacturers' recommendations, wherever available, should take precedence over this table. Based on free-choice feed availability. Always monitor uniformity of bird access to feed and water and adjust as necessary.

<b>Feed</b>	
Pan Feeders	65 birds <sup>a</sup> per pan (33 cm [13 in] diameter)
Trough Feeders <sup>c</sup>	2.5 cm (1 in) per bird <sup>b</sup>
<b>Water</b>	
Troughs <sup>c</sup>	2.5 cm (1 in) per bird <sup>b</sup>
Bell Drinkers/Cups	1 per 120 birds
Nipples	5-20 birds per nipple <sup>a</sup>

- a. Take bird weight/size into consideration
- b. Assumes that both sides of the trough are available to the birds. If not, then double the space allocation per bird
- c. Perimeter space for round feeders and waterers can be calculated by multiplying linear trough space by 0.8.



## Recommended Feeder and Drinker Spaces for Turkeys

Basic guidelines for feed and water access for turkeys. Manufacturers' recommendations, wherever available, should take precedence over this table. Based on free-choice feed availability. Always monitor uniformity of bird access to feed and water and adjust as necessary.

<b>Feed</b>	
Pan Feeders	Maximum 60 to 75 birds per pan
Trough Feeders <sup>b</sup>	2.5 to 3.2 cm (1 to 1.25 in) per bird <sup>a</sup>
<b>Water</b>	
Troughs <sup>b</sup>	Minimum 2.5 to 3.2 cm (1 to 1.25 in) per bird <sup>a</sup>
Bell Drinkers/Cups	Minimum 1 per 100 birds

- a. Assumes that both sides of the trough are available to the birds. If not, then double the space allocation per bird
- b. Perimeter space for round feeders and waterers can be calculated by multiplying linear trough space by 0.8

## Management Practices to Transition to Day-Night (Diurnal) Lighting Programs



1. Like all very young animals, newly hatched chicks and poults need rest. Therefore, broiler chicken flock mortality may be reduced by initiating a diurnal lighting program at placement or very early in life.
2. Use dawn-dusk lighting programs, which gradually turn lights on in the morning and off in the evening (although the duration of the change needs confirmation, often 15-30 min is used with success). This can be done using the computer light controller boxes found in many barns. If this is not available, having banks of lights turn on/off at in sequence (15 min apart as a suggestion) also simulates the dawn/dusk procedure.
  - a. Because feeding activity is the highest immediately after lights come on and for a period before lights turn off, doing this gradually reduces the density at the feeder, reducing the chance of down-grades due to scratches or cellulitis.
3. When decreasing the daylength, do so by dropping the hours of light gradually over a period of days for meat production birds. A suggestion is to drop the daylength by approximately 1 hour per day. Similarly, make changes to light intensity over a period of days.
  - a. Abrupt changes to daylength or light intensity (or the combination of both) reduce feed intake immediately up to 20% and can reduce feed efficiency. This may be due to the stress of the abrupt change or changes in gut microbiota, both of which could be a welfare concern.
4. Providing the darkness in one period as opposed to breaking up the darkness may allow a higher quality sleep and may reduce mortality in the flock.
5. In order to create a diurnal pattern for the birds, a distinction between day and night should be created. Therefore, if the nighttime is not a blackout (or very dark), the daylight light intensity should be increased.

Developed by:

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Department of Animal and Poultry Science  
University of Saskatchewan



# Producer Self-Quarantine Protocol

This protocol (39) presents to the producer a course of action during the suspicion of an infectious disease. This plan is an excellent example of procedure, but other protocols regarding quarantine and infectious disease do exist. It is recommended that all producers are familiar with local or industry-accepted procedures.

## **Background**

Upon the suspicion of an infectious disease in a poultry flock, the following set of guidelines should be followed by the producer. The intention of this protocol is to limit the spread of disease between barns and, most importantly, the spread of disease off-farm.

**Situation** - There has been an **unexplained**:

- increase in mortality;
- change in production parameters, such as feed or water consumption, egg production, or shell quality, etc.; or
- onset of clinical signs of disease.

## **Action plan**

### **1) Obtain an answer**

- a. Start your own on-farm investigation. Gather together all relevant documents, including health records of all flocks currently on the farm.
- b. Call your veterinarian with a complete description of the problem, including time of onset, duration, and whether things are getting worse or resolving over time. Offer your suspicions as to your thoughts on what the problem might be.
- c. Review and provide copies of production and mortality records.
- d. Provide representative birds and/or samples for diagnostic investigation:
  - i. Call in your veterinarian to do on-farm necropsy and sampling techniques.
  - ii. Take birds and/or samples to a local poultry veterinarian and/or to the Vet Lab. (Note: there may be special precautions required when moving birds and/or samples off-farm. Consult your veterinarian for proper procedures.)

### **2) While you wait**

- a. Follow the advice of your veterinarian, which may involve interim treatment of the flock, based upon the disease suspected.
- b. Review and list the on-farm traffic, visitors, and bird movements in the previous 10 days. Refer to visitor log.
- c. Immediately adopt enhanced biosecurity protocols. Service unaffected barns first and/or dedicate a specific employee to the affected barn(s). (Note: Enhanced biosecurity protocols should be prepared beforehand, in consultation with your veterinarian.)
- d. Immediately restrict on- and off-farm access by locking gates and requiring phone-ahead pre-arrangements for deliveries and pickups. Suspend all unnecessary traffic.
- e. Inform all family members and employees of the situation. Request confidentiality until diagnosis is confirmed.
- f. Follow strict personal biosecurity procedures for leaving the farm (e.g. non-farm clothing, footwear, and vehicle), especially if meeting with other poultry industry members, even socially.



## Producer Self-Quarantine Protocol (continued)

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- g. Postpone scheduled vaccinations until a diagnosis is confirmed.
- h. Postpone movements of any birds on or off-farm.
- i. Dispose of dead or culled birds, using an approved method: on-farm is preferable; composting or incineration is recommended. Treat as infectious material.
- j. If there is a strong suspicion of a highly infectious disease, such as infectious laryngotracheitis (ILT), pox, avian infectious bronchitis (IBV), or avian influenza (AI), based on the visible lesions found at necropsy but before laboratory confirmation, request that the feed or egg truck make your farm the last stop of the day.

### 3) When a diagnosis is confirmed

- a. If the diagnosis confirms a “reportable” disease, either the CFIA (federal disease) or your producer association (provincial disease), will have been informed at the same time. Follow up. Prepare records and notes for review.
- b. In the case of a “reportable” disease, follow the directions and recommendations of the regulatory agency, but do not hesitate to ask questions.
- c. Modify or initiate treatment of flock as directed by your poultry veterinarian.
- d. Follow enhanced on-farm biosecurity procedures for at least 10 to 14 days following the end of treatment or the resolution of clinical signs.
- e. If they have not already been informed, update your service industry representatives and producer groups of the diagnosis and the measures undertaken for containment.
- f. If practical, inform neighbouring poultry operations.
- g. If appropriate, make provisions for birds moving directly to slaughter, in which case the processor should be informed.
- h. Recommended: Post enhanced biosecurity signs at gates, indicating that an infectious disease has been diagnosed and that access is restricted.

### 4) Getting back to normal

- a. Enhance the regular on-farm cleaning and disinfection procedures for the affected barns. Extend clean “downtime” as long as possible.
- b. Continue to monitor for disease reoccurrence in the same or subsequent flocks, watch for clinical signs, and submit follow-up samples.
- c. Record the event in the production records with as much detail as possible.
- d. Return to regular biosecurity measures.

### **Important note:**

Pathogenic Newcastle disease (NDV), avian influenza (AI) and *Salmonella pullorum* and *gallinarum* are federally reportable diseases. The CFIA has developed disease response plans and strategies for these diseases upon their identification in domestic flocks.



## Producer Self-Quarantine Protocol (continued)

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The national immediately notifiable diseases are infectious laryngotracheitis (ILT), avian cholera (pasteurellosis), chlamydiosis (psittacosis, ornithosis), duck hepatitis, avian encephalomyelitis, egg drop syndrome (avian adenovirus), goose parvovirus infection (Derzsy's disease), and turkey rhinotracheitis (avian pneumovirus, swollen head syndrome). The CFIA must be notified if these diseases occur; however, limited action is taken, and only with respect to certification of meat product for export to certain countries.

Specific provinces have a list of provincially notifiable diseases that are of significant economic concern, and there may be specific action response plans to the occurrence at the industry level or mandated by the provincial government. The most common ones are infectious laryngotracheitis (ILT) and mycoplasma in breeder birds and turkeys.

All other diseases are “unregulated” and are a private issue between you and your veterinarian. Your confidentiality will be respected, but your cooperation in informing your industry service representatives of a potential infectious disease problem is encouraged and appreciated.

Online Reference:

[www.inspection.gc.ca/animals/terrestrial-animals/biosecurity/standards-and-principles/general-producer-guide/eng/1398640321596/1398640379048?chap=10](http://www.inspection.gc.ca/animals/terrestrial-animals/biosecurity/standards-and-principles/general-producer-guide/eng/1398640321596/1398640379048?chap=10)



# Sample Emergency Contact Template

## EMERGENCY CONTACT LIST

**USE 911 FOR ANY EMERGENCIES**

Your farm address: \_\_\_\_\_

### FARM EMERGENCY CONTACTS:

**Contact 1:**

Office phone: \_\_\_\_\_

Home phone: \_\_\_\_\_

Cell phone: \_\_\_\_\_

**Contact 2:**

Office phone: \_\_\_\_\_

Home phone: \_\_\_\_\_

Cell phone: \_\_\_\_\_

Local police contact (for non-911 emergencies): \_\_\_\_\_

Provincial Ministry of Agriculture: \_\_\_\_\_

Canadian Food Inspection Agency: \_\_\_\_\_

Internet service provider: \_\_\_\_\_

Insurance company: \_\_\_\_\_

Hospital: \_\_\_\_\_

Hospital address: \_\_\_\_\_

### INDUSTRY CONTACTS

National and provincial commodity associations:

\_\_\_\_\_  
*Organization Name*

\_\_\_\_\_  
*Contact Name*

\_\_\_\_\_  
*Phone Number*

\_\_\_\_\_  
*Organization Name*

\_\_\_\_\_  
*Contact Name*

\_\_\_\_\_  
*Phone Number*





## Sample Emergency Contact Template (continued)

<b>Other contacts</b>	<b>Name</b>	<b>Number</b>
Veterinarian		
Barn washer/Cleaning crew		
Processor		
Transporter		
Manure haulage		
Feed company		
Catching crew		
Hatchery		
Bedding supplier		
Renderer		
Pest control		
Fuel company		
Electric		
Gas		
Water		
Other		



# Humidex Guidelines for Loading Poultry

**Source:**  
**Environment Canada**

*Temperatures are listed across the top and humidity down the side. The temperature that correlates with each level of humidity combine to make a humidex value (or "feels like" temperature).*

## Humidex = "Feels Like" Temperature

		Temperature			
		20 C	25 C	30 C	35 C
Humidity	50%	22	28	36	45
	60%	24	30	38	46
	70%	25	32	41	49
	75%	26	33	42	50
	80%	26	33	43	52
	85%	27	34	44	53

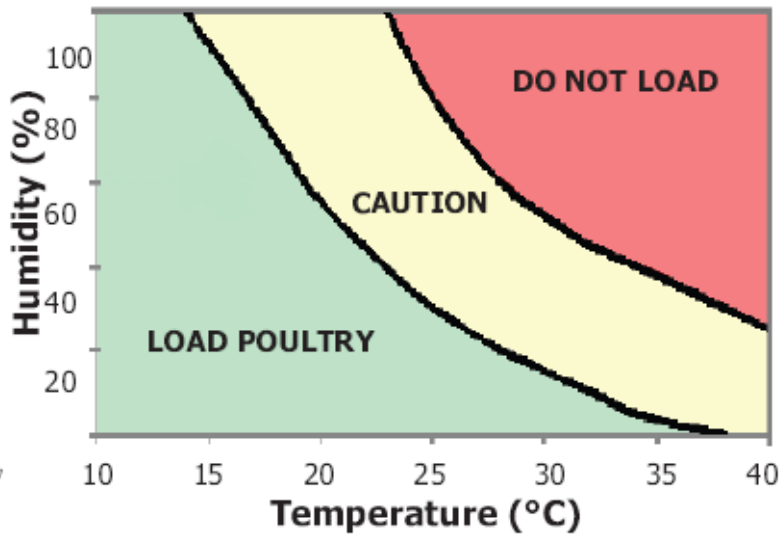
**For more information:**

*Classen H.L., Knezacek T., Audren G.P., Stephens S., Crowe, T., Barber E.M., Oikowski A.A., Mitchell, M.A. Kettlewell P.J. (2002): Final Report : Studies on Broiler Chicken Transportation in Saskatchewan; Project SDAF# 19990246-248X*

*Mitchell, MA, and PJ Kettlewell, 1998. Physiological stress and welfare of broiler chickens in transit: solutions not problems! Poultry Science, 77: pp. 1803-1814.*

*Mitchel, MA, Kettlewell, PJ, Carlisle, AJ and Matheu, C. 1996. The use of apparent equivalent temperature (AET) to define the optimum thermal environment for broilers in transit. Poultry Science 75, supplement : p. 18*

## Humidex Guidelines for Loading Poultry



Source: (40)



## Example Euthanasia Decision Guidance

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Answering the following questions can assist in making appropriate euthanasia decisions for poultry (adapted from (41) (42)):

- Does the bird appear to be experiencing pain or distress (see below)?
- What is the degree of that pain and distress, and can it be treated?
- What is the cause of the pain or distress? Can the cause be addressed?
- Does the bird show interest in feed and water?
- Can the bird access feed and water?
- Is the bird responding positively to treatment, or is its condition getting worse?
- Is recovery likely within an acceptable time frame?
- Is the bird likely to transmit disease to other birds?

Individual operations may establish additional criteria for euthanasia.

The Following list provides examples of potential signs of pain or distress in individual birds that warrant further evaluation:

- weak, not alert
- hunched posture with head drawn in, often with closed eyes
- ruffled or dirty feathers unrelated to litter conditions
- unable to rise/walk due to injury or physical abnormality
- reluctance to eat or drink
- severely injured
- swollen head
- discoloured comb
- emaciation.



# Timely Euthanasia of Chicks/Poult

Poultry farmers are committed to producing high quality, safe and affordable food while ensuring high welfare and health for their flocks.

Despite the quality procedures and diligence at the hatcheries and in early brooding in the barn, there will always be a small proportion of chicks/poult that are unable to thrive. These chicks/poult can act as reservoirs of bacterial and viral infections.

One of the most effective tools available to the farmer is the early culling of unthrifty, ill or injured chicks/poult. The greatest positive impact is achieved when culling is performed immediately after those chicks/poult are identified.

In many cases, an effective culling program can improve animal welfare, food safety and minimize or replace the need for antibiotic therapy. Reduced use of antibiotics may benefit flock health and can minimize the risk of antimicrobial resistance, which is a priority for agriculture.

It may be necessary to euthanize chicks/poult for a variety of reasons, all of which impact the health, welfare and productivity of a flock. The following is a guide to identify compromised birds in the first 10 days of life.

### Starve Outs / Unthrifty Chicks/Poult

<p>Poult</p> <p>healthy vs unthrifty</p>	<p>Chick</p>	<p>For 2-3 days after hatch chicks/poult can meet all their nutritional needs by absorbing the nutrients from their yolk. To grow, thrive and successfully compete, chicks/poult must transition to feed and water supplied in the barn within this 2-3 day period. Failure to transition will result in a weak bird which is not likely to recover. These birds should be euthanized.</p>
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### Yolk Sac / Navel Infection (Mushy Chicks/Poult)

<p>Chick</p>	<p>Chick</p>	<p>As chicks/poult internalize the yolk from the egg, the navel is left as the last point where the body wall seals off. If the yolk is contaminated before internalization, or if bacteria enter the chick/poult through the navel before it closes, the yolk acts as a nutrient source for bacteria, resulting in an overwhelming infection. Antibiotic treatment often keeps chicks alive but fails to resolve the original infection. Loss will occur when treatment is removed. Euthanasia will reduce suffering and limit the amount of bacteria shed into the environment.</p>
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### Injury

<p>Poult</p>	<p>Chick</p>	<p>Chicks/poult may be injured through the hatching, sorting, transportation and brooding processes. Injuries can result in wounds and lameness, which are painful to the chick/poult. Due to resulting infections and the inability to compete for feed and water, injured chicks/poult should be euthanized immediately.</p>
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### Disease

<p>Chick</p>	<p>Chick</p>	<p>Diseased chicks/poult are more susceptible to other disease challenges which will have detrimental effects later in the flock. Euthanizing these chicks/poult early will reduce the possible spread of disease to healthy birds.</p>
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### Deformed, Abnormal Chicks/Poult

<p>Chick</p>	<p>Chick</p>	<p>Chicks/poult that are improperly formed, abnormal or unable to perform normal activities such as walking, feeding and drinking should be euthanized. These chicks/poult will not compete well, will become small and weak and their welfare will suffer if they are not culled.</p>
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**If you are concerned, contact your veterinarian.**





## Resources for Further Information

### Flock Health Management

- The Alberta Environmental Farm Plan Company (2008) *Rural Emergency Plan*. [www.ruralemergencyplan.com/](http://www.ruralemergencyplan.com/)
- Canadian Food Inspection Agency (2009) *National Avian On-Farm Biosecurity Standard*. [www.inspection.gc.ca/animals/terrestrial-animals/biosecurity/standards-and-principles/avian-on-farm/eng/1375193894256/1375193980266#sec2](http://www.inspection.gc.ca/animals/terrestrial-animals/biosecurity/standards-and-principles/avian-on-farm/eng/1375193894256/1375193980266#sec2)
- Canadian Food Inspection Agency (2014) *General Producer Guide – National Avian On-Farm Biosecurity Standard*. [www.inspection.gc.ca/animals/terrestrial-animals/biosecurity/standards-and-principles/general-producer-guide/eng/1398640321596/1398640379048](http://www.inspection.gc.ca/animals/terrestrial-animals/biosecurity/standards-and-principles/general-producer-guide/eng/1398640321596/1398640379048)
- Canadian Food Inspection Agency (2012) *Biosecurity for backyard flock and small bird owners*. [www.inspection.gc.ca/animals/terrestrial-animals/diseases/bird-health-basics/eng/1323643634523/1323644740109](http://www.inspection.gc.ca/animals/terrestrial-animals/diseases/bird-health-basics/eng/1323643634523/1323644740109)
- Ontario Ministry of Agriculture and Food and Ministry of Rural Affairs (2013) *Rodent Control in Livestock and Poultry Facilities*. Publication number 1198-712X. [www.omafra.gov.on.ca/english/livestock/dairy/facts/13-057.htm](http://www.omafra.gov.on.ca/english/livestock/dairy/facts/13-057.htm)
- Alberta Agriculture and Rural Development, Environmental Stewardship Division (2008). *A Guide for the Control of Flies in Alberta: Confined Feeding Operations*. [www1.agric.gov.ab.ca/\\$department/deptdocs.nsf/all/epw12257/\\$file/guide.pdf?OpenElement](http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/epw12257/$file/guide.pdf?OpenElement)
- Government of Canada. *Reportable Diseases Regulations*. [laws-lois.justice.gc.ca/eng/regulations/sor-91-2/page-1.html](http://laws-lois.justice.gc.ca/eng/regulations/sor-91-2/page-1.html)

### Preparing and Loading for Transport

- Ontario Farm Animal Council, Poultry Industry Council, Ontario Ministry of Agriculture Food and Rural Affairs (2012) *Should this Bird be Loaded? A Guide for Preparing, Loading, and Transporting Poultry*. [www.poultryindustrycouncil.ca/wp-content/uploads/2012/03/DT-Handbook-final.compressed.pdf](http://www.poultryindustrycouncil.ca/wp-content/uploads/2012/03/DT-Handbook-final.compressed.pdf)
- Ontario Ministry of Agriculture and Food & Ontario Ministry of Rural Affairs; Association of Ontario Chicken Processors; Chicken Farmers of Canada (February 2013) *Humane Broiler Catching for Catching Crews*. [www.poultryindustrycouncil.ca/resources/humane-handling-materials/](http://www.poultryindustrycouncil.ca/resources/humane-handling-materials/)
- Ontario Ministry of Agriculture and Food & Ontario Ministry of Rural Affairs; Turkey Farmers of Ontario (February 2013) *Humane Turkey Loading for Processing for Catching Crews and Loading Crews*. [www.poultryindustrycouncil.ca/resources/humane-handling-materials/](http://www.poultryindustrycouncil.ca/resources/humane-handling-materials/)
- Farm & Food Care Ontario; Poultry Service Association (2015) *Ontario Poultry Handling and Transportation Manual*. [www.poultryserviceassociation.com/resources.html](http://www.poultryserviceassociation.com/resources.html)
- Canadian Agri-Food Research Council (2001) *Recommended code of practice for the care and handling of farm animals – Transportation*. [www.nfacc.ca/codes-of-practice/transport](http://www.nfacc.ca/codes-of-practice/transport)

### Euthanasia

- Chicken Farmers of Canada (2014) *On-Farm Chicken Euthanasia Guidelines (Version 1.0)*. [www.chickenfarmers.ca/wp-content/uploads/2014/05/CFC-Euthanasia-Guidelines.pdf](http://www.chickenfarmers.ca/wp-content/uploads/2014/05/CFC-Euthanasia-Guidelines.pdf)
- The Institute for Applied Poultry Technologies (2015) *Welfare and Pain Management*. [www.iaptwest.org/welfare-and-pain-management/](http://www.iaptwest.org/welfare-and-pain-management/)

### Mass Depopulation

- Canadian Veterinary Medical Association (January 21, 2016) *Humane Mass Depopulation of Animals – Position Statement*. [www.canadianveterinarians.net/documents/humane-mass-depopulation-of-animals-position-statement](http://www.canadianveterinarians.net/documents/humane-mass-depopulation-of-animals-position-statement)



## Participants

### Code Development Committee Members

Role	Representative	Organization
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	Dean Penner	Canadian Hatching Egg Producers
	Gyslain Loyer	Canadian Hatching Egg Producers
	Henk van Steenberg.	Canadian Hatching Egg Producers
	Lori Ansems	Turkey Farmers of Canada
	Bill Mailloux.	Turkey Farmers of Canada
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Animal Welfare Enforcement	Penny Lawlis M.Sc.	Ontario Ministry of Agriculture and Food; Ministry of Rural Affairs
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	Neil Ambrose DVM	Canadian Poultry and Egg Processors Council
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## Participants (continued)

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The committee appreciates the valuable input from the public comment period and all those who provided comments and advice throughout the process.



# Summary of Code Requirements

The following is a list of the Requirements within the Code of Practice for the care and handling of Hatching Eggs, Breeders, Chickens, and Turkeys. Refer to the cited Code section for further context about the Requirements.

## SECTION 1 Personnel Knowledge and Skills

- A Code of Conduct covering bird welfare must be developed and communicated.
- All individuals who work with or care for hatching eggs or birds must be competent in the tasks they are assigned.
- Personnel must be monitored and receive additional training as necessary.

## SECTION 2 Hatcheries

### 2.2 Hatching Egg Management and Incubation

- Hatching eggs must be transported, handled, stored, and incubated in ways that promote healthy embryos.

### 2.3 Hatching Egg Transfer

- Hatching eggs must be handled and transferred in ways that promote healthy chicks and poults.
- Eggs with the possibility of live embryos that are removed at transfer must be euthanized (Refer to *Appendix B - Methods of Euthanasia*).
- Vaccines and treatments must be stored, mixed, and administered according to the manufacturers' recommendations and/or the recommendation of a veterinarian.
- Manufacturers' instructions for use, sanitation, and maintenance of automated equipment used during transfer, including for administering vaccines, medications, and/or nutrients, must be followed.

### 2.4 Chick and Poulth Processing

- Chicks and poults, as well as boxes with chicks or poults, must be kept, treated, and handled in ways that prevent injury and minimize stress.
- Chicks and poults, as well as boxes with chicks or poults, must not be dropped from heights that may cause injury.
- Live chicks and poults must be removed from hatch residue.
- Chicks and poults must be inspected regularly to ensure that they appear, behave, and sound normal.
- Prompt action must be taken to identify and remedy the causes of chick and poulth injuries.
- Injured or malformed chicks and poults that are suffering and unhatched live embryos not destined for further examination (break-out) must be euthanized as soon as possible, within 1 hour after completion of flock processing.
- Break-out of unhatched eggs must take place within the day of hatch.
- Vaccines and treatments must be stored, mixed, and administered according to the manufacturers' recommendations and/or the recommendation of a veterinarian.
- Chicks and poults must never be squeezed, except for the purpose of sexing by vent examination.
- All loose chicks and poults must be retrieved as soon as possible and at a minimum at every flock change.





## Summary of Code Requirements (continued)

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### 2.5 Physical Alterations and Bird Identification

- Physical alterations to beaks, toes, spurs, combs, and snoods must be reviewed and evaluated regularly for welfare improvements and to determine the need for these practices.
- All equipment used to perform physical alterations must be regularly inspected, maintained, calibrated, cleaned, and used according to manufacturers' instructions.

### 2.6 Holding, Loading, and Transporting Chicks and Poults

- Boxes with chicks or poults must be moved smoothly and in such a way that the chicks or poults do not pile or become trapped.
- Boxes containing chicks or poults must not be thrown or dropped.
- Chicks and poults that are deemed unfit for transport must be cared for or euthanized.
- Appropriate environmental conditions must be maintained throughout the transport process to ensure that chicks and poults arrive at their final destination in good condition.
- Chicks and poults must be able to stand erect during transport.

## SECTION 3 Housing and Environment

### 3.1 Housing

- Poultry housing and its components must be designed, constructed, and regularly inspected and maintained in a manner that minimizes the potential for injury and allows for inspection of all birds.

### 3.2 Feed and Water Equipment

- Feed and water equipment must be maintained in good working order, and any defective systems must be attended to without delay.

#### 3.3.1 Temperature, Ventilation and Air Quality

- Poultry housing must be designed and constructed in a manner that allows for good ventilation and air quality with respect to temperature, relative humidity, dust level, ammonia, and carbon dioxide.
- Heating and ventilation systems must be inspected regularly and maintained in working order.
- Bird behaviour must be observed and necessary corrective action taken as soon as possible if birds are displaying signs of thermal discomfort.
- Action must be taken to manage ammonia levels if they reach a harmful range (e.g. 20 to 25 ppm).

#### 3.3.2 Bedding and Litter Management

- Bedding that is provided must not be harmful or toxic to birds.
- Bedding or litter must be available to provide opportunities for birds to express normal behaviours (e.g. scratching, foraging, dust bathing).
- Litter condition must be monitored daily and action taken immediately to improve poor litter conditions (i.e. litter that is too wet or too dry).
- Fresh bedding must be provided for chicks and poults at placement.



## Summary of Code Requirements (continued)

### 3.4 Lighting

- Chicks and poults must be provided with a minimum of 1 hour of darkness in each 24 hour period after 24 hours of placement, and the dark period must be gradually increased to a minimum of 4 hours in each 24 hour period by day 5 of placement.
- From day 5 of placement through to no sooner than 7 days prior to catching, birds kept in barns must have a dark period of at least 4 consecutive hours in each 24 hour period.
- Dark periods must be no more than 20% of the light intensity of the light period.
- Light intensity must be adequate during the light period to allow birds to navigate their surroundings and for daily inspections (e.g. 5 to 10 lux). Light intensity may only be reduced temporarily to correct abnormal behaviour.
- Light control systems must be inspected regularly and maintained in working order.

### 3.5 Stocking Densities

- Birds must have enough space to move freely and be able to stand normally, turn around, and stretch their wings without difficulty.
- Space allowance must be sufficient to allow all birds to be able to sit at the same time.
- Health and/or injury data, if available from processors, must be used to help determine if on-farm stocking densities are contributing to recurring health and/or welfare problems (e.g. foot pad and breast lesions, cellulitis, bruises).
- The number of birds must not exceed that which can be accommodated by the available barn space and equipment (e.g. feeders, waterers, nest boxes).

#### **Additional requirements for broiler breeders**

- Stocking densities for broiler breeders must not be greater than 34 kg/m<sup>2</sup>.

#### **Additional requirements for broiler chickens**

- Stocking densities for broiler chickens must not normally exceed 31 kg/m<sup>2</sup> at any time. Stocking density may be increased to a maximum of 38 kg/m<sup>2</sup> when the following conditions are maintained:
  - daily environmental monitoring (temperature, and relative humidity or ammonia) that demonstrates acceptable ranges are maintained and recorded
  - daily water intake is monitored and recorded
  - a Flock Health Plan is developed and followed
  - alarms are installed and maintained to alert personnel when environmental conditions are out of acceptable ranges
  - ongoing health and/or injury data indicate that the increased stocking density does not compromise bird welfare.

#### **Additional requirements for turkeys**

- Stocking densities for turkeys must not normally exceed limits contained in Column (a) in Table 3.4. Stocking densities may be increased to limits contained in Column (b) in Table 3.4 when the following conditions are maintained:
  - daily environmental monitoring (temperature, and relative humidity or ammonia) that demonstrates acceptable ranges are maintained and recorded
  - daily water intake is monitored and recorded
  - a Flock Health Plan is developed and followed



## Summary of Code Requirements (continued)

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- alarms are installed and maintained to alert personnel when environmental conditions are out of acceptable ranges
- ongoing health and/or injury data indicate that the increased stocking density does not compromise bird welfare.

### 3.6 Nests (Broiler Breeders and Turkey Breeders)

- A sufficient number of appropriately-sized nests for the strain and number of hens in each group must be provided.

### 3.7 Hatching Egg Room Environment

- Hatching eggs must be stored in ways that promote healthy embryos.

### 3.8 Additional Considerations for Outdoor Access, Semi-Confined, or Range Production

- Shelter must be provided to protect birds raised outdoors from inclement weather.
- The range area must provide sufficient shaded areas to accommodate the size of the flock.
- The range area must be kept free of debris that may shelter pests.
- Feed and water must be provided in a way that discourages access by wild birds.
- The outdoor range must be sited and managed to avoid muddy or unsuitable conditions; this includes the areas under the feeders and waterers.
- When birds have access to the range from a barn, barns must be designed to allow easy access to and from the range area for all birds.

## SECTION 4 Feed and Water

### 4.1 Nutrition and Hydration

- Birds must be fed a diet appropriate to their age and genetics, and which contains adequate nutrients to meet their requirements for good health and welfare.
- Feed and water must be acceptable to birds and free from contaminants at a concentration hazardous to bird health.
- Birds must be provided with fresh, potable water in sufficient quantities for normal hydration, health, and production.
- Water must be tested at least annually, unless municipal water is used, to ensure its suitability for the birds and corrective action must be taken as necessary.
- Water must be monitored on an ongoing basis for any changes (odours, rust, cloudiness) that may suggest a change in quality.

#### ***Additional requirements for broiler chickens, turkeys and turkey breeders***

- Broiler chickens and turkeys must have access to feed and water in sufficient quantities at all times in normal circumstances, up until the time of catching. Interruptions for the purposes of vaccinations or water system maintenance or under veterinary instructions are acceptable.
- Turkey breeders must be provided with daily access to feed and water that maintains their health and meets their physiological requirements for health.



## Summary of Code Requirements (continued)

### 4.2 Controlled Feeding and Watering for Broiler Breeders

- The body weight and uniformity of feed- and water-restricted birds must be monitored.
- When controlled feeding is used to control excessive body weight gain during pre-lay, any interruption of feed must not exceed 48 hours.
- Water must be provided daily in sufficient quantities for normal hydration and in a manner that prevents over-drinking.

## SECTION 5 Flock Health Management

### 5.1 Flock Health Plan

- A working relationship with a veterinarian must be established.

### 5.2 Disease Prevention

- A disease prevention or biosecurity protocol must be developed and followed.

#### 5.2.1 Sanitation

- Buildings and equipment must be cleaned and a disinfectant applied following an outbreak of an infectious disease.

#### 5.2.2 Pest Control

- A plan to prevent and control pests including rodents, small animals, wild birds, insects, and predators must be developed and followed.

#### 5.3.1 Health Monitoring

- Flock Inspections must be conducted at least twice daily
- Mortalities and culls must be recorded daily.
- Cases involving unexpected illness, death, or increases in mortality rates must be investigated (e.g. consult a veterinarian, submit samples to a lab).
- Dead birds must be removed and disposed of daily.

#### 5.3.2 Managing Sick or Injured Birds

- Sick or injured birds and birds that exhibit obvious signs of pain must be promptly treated or euthanized (Refer to *Section 8 - Euthanasia*).
- Birds that are severely lame must be treated, moved to a recovery pen, or euthanized.
- Any suspected cases of reportable diseases must be reported to a veterinarian immediately.

### 5.4 Emergency Management and Preparedness

- A contingency plan for reasonably foreseeable problems that may affect bird welfare must be prepared and reviewed with all personnel.
- Emergency contact information must be readily available.
- At least one responsible individual must be available at all times to take necessary steps in the case of an emergency.
- A backup power system or an alternate method must be available to ensure bird well-being during a power outage.
- All alarms and fail-safe devices, including alternate power supply, must be regularly tested.

#### **Additional requirements for hatcheries**

- An alarm or monitoring system must be used to alert hatchery personnel of failures of critical systems such as heat or electricity.



## Summary of Code Requirements (continued)

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### SECTION 6 Husbandry Practices

#### 6.1 Stockmanship and Bird Handling

- Birds must be handled at all times in such a manner that minimizes stress or injury. Birds must not be carried solely by the head, neck, one wing, or tail feathers.

#### 6.2 Receiving and Brooding Chicks and Poults

- Facilities must be prepared (i.e. heat, clean, feed, water, bedding) in advance of receiving chicks and poults so that they can be placed promptly after arrival.
- Farm personnel must be present at the time of delivery and placement and must assess the physical condition of the chicks and poults.
- Steps must be taken to prevent chicks and poults from becoming chilled or overheated during the unloading process.
- Chicks and poults, as well as boxes with chicks or poults, must be kept, treated, and handled in ways that prevent injury and minimize stress.
- Chicks and poults, as well as boxes with chicks or poults, must not be dropped from heights that may cause injury.

#### 6.3 Transferring Birds

- Housing facilities must be prepared (e.g. heat, feed, water) to receive birds in advance of their arrival.
- Farm personnel must be present at the time of delivery and placement to assess the physical condition of the birds.

#### 6.4 Reproductive Management: Broiler Breeders

- Growing, feeding, and lighting programs must be managed so that females reach maturity concurrent with or prior to males.
- Social interactions between males and females must be monitored. If hens are actively avoiding roosters, then reduce numbers of roosters until social interaction, including mating behaviour, is normal.

##### 6.5.1 Semen Collection and Artificial Insemination (Turkey Breeders)

- Tom turkeys and turkey hens must be handled in such a way as to prevent injury and minimize stress throughout all aspects of the semen collection and artificial insemination processes.

##### 6.5.2 Management of Broody Hens

- Steps taken to discourage hens from engaging in broody behaviour must not compromise hens' welfare.

#### 6.6 Hatching Egg Management

- Hatching eggs must be handled and stored in ways that promote healthy embryos.

#### 6.7 Managing Harmful Behaviour

- Action must be taken to manage bird behaviour at the onset of an outbreak of feather pecking or cannibalism.



## Summary of Code Requirements (continued)

### 6.8 Physical Alterations

- Roosters must not be caponized unless under veterinary supervision, using pain control.
- Beak trimming must be carried out only by competent persons.
- Initial beak trimming must not be performed on broiler breeders that are older than 10 days of age, unless required to control an outbreak of cannibalism.
- Equipment must be properly maintained and adjusted prior to performing any beak treatments.

### 6.9 Controlled Moulting

- Controlled moulting practices must be performed under veterinary supervision. Only healthy birds must be selected for moulting.
- Feed or water must not be withdrawn to initiate moulting.

## SECTION 7 Transportation

### 7.1 Evaluation for Transport

- In preparation for transport, the flock must be evaluated for fitness and those birds that are deemed unfit for transport must be euthanized, separated, or transported with special provisions<sup>1</sup> for veterinary assessment or treatment only.
- Wet birds are compromised<sup>2</sup> and must not be loaded in cold weather if there is a risk that birds will become chilled.

#### 7.2.1 Pre-Loading Considerations

- The flock and environmental conditions, as well as the expected journey duration, must be taken into consideration when loading birds for transport.
- The number of birds in each container must be determined prior to loading, taking into consideration the available container floor space, body size/weight, prevailing environmental conditions, and duration of transport.

#### 7.2.2 Feed and Water: Pre-Loading

- Pre-transport feed withdrawal must be managed to minimize the time that birds are off feed.
- Water must be available to the birds until catching commences.

#### 7.2.3 Birds Left in Barns

- Birds that are not loaded for transport and not euthanized must continue to be cared for in accordance with relevant sections of this Code (e.g. feed and water, temperature, ventilation).

### 7.3 Catching, Loading, and Unloading Procedures

- Catching crews must be supervised by a competent individual.
- Birds must be handled in such a manner that minimizes stress and/or injury. Birds must not be carried solely by the head, neck, one wing, or tail feathers.
- Producer or a competent designee must be readily available to provide assistance throughout the catching and loading process.
- All catching and loading equipment must be operated by competent personnel.
- The catching area must promote safe and humane handling and catching (e.g. lift or remove feeders and waterers prior to catching).
- Birds must be in an upright position after being loaded into containers.

<sup>1</sup> Section 139 (2) in Part XII (Transport of Animals) of the Health of Animals Regulations specifies four conditions that must be met when transporting unfit animals for veterinary care (10).

<sup>2</sup> Section 136 (1) in Part XII (Transport of Animals) of the Health of Animals Regulations defines "compromised". Section 140 (1) (c) (d) specifies conditions that must be met when transporting compromised animals (10).



## Summary of Code Requirements (continued)

- Containers with birds must be handled, moved, and secured to vehicles in a manner that prevents them from moving during transport and minimizes stress and/or injury to birds<sup>3</sup>.
- Birds must be loaded in containers in such a way that permits all of them to rest on the floor at the same time when evenly distributed, while preventing excessive movement within the container.
- Parts of birds must not protrude from containers in any way that can cause injury or impede movement.

### 7.4 Catching and Loading/Unloading Equipment and Containers

- The design, construction, space, state of repair, and use of containers and equipment must allow the birds to be loaded, conveyed, and unloaded in ways that minimize stress and/or injury.
- Conveyors used for loading containers of live birds must prevent tilting of containers that causes birds to pile up.

### 7.5 Facilities Design and Maintenance

- When building new barns or renovating existing barns or yards, the way in which birds are moved into and out of barns must be taken into consideration with a view to facilitating safe and humane transfer of birds to and from the transport vehicles (e.g. tractor-trailer).
- Openings through which birds are passed must be large enough to ensure that birds can be transferred in a way that minimizes injury.
- Driveways and yards must be maintained to facilitate unobstructed, safe, and easy access by transport vehicles.

## SECTION 8 Euthanasia

### 8.1 Euthanasia at Hatcheries

- An acceptable method for euthanizing chicks and poults must be used. Refer to *Appendix B - Methods of Euthanasia*.
- Eggs with the possibility of live embryos that have been culled must be euthanized. Refer to *Appendix B - Methods of Euthanasia*.

### 8.2 Decision-Making around Euthanasia

- Personnel must be competent in making timely euthanasia decisions.
- Sick or injured birds and birds that exhibit obvious signs of pain must be promptly treated or euthanized by competent personnel.
- Birds that are isolated for observation must be monitored at least twice daily and reassessed for continued recovery, or euthanized.

### 8.3 Skills and Knowledge Related to Euthanasia

- All individuals who perform euthanasia must be competent in the euthanasia methods and protocols used on-farm.

### 8.4 Methods of Euthanasia

- An appropriate method for euthanizing birds, as contained in Appendix B - Methods of Euthanasia, must be used.
- Prior to being euthanized, birds must be handled in a manner that minimizes pain and suffering.
- All equipment used for euthanasia must be well maintained, used correctly, and not overloaded, so that it operates effectively and efficiently.

<sup>3</sup> Section 150 (4) in Part XII (Transport of Animals) of the Health of Animals Regulations states that “no person shall confine or transport an animal in a container unless the container is secured to the conveyance in a manner that prevents it from moving during transport” (10).



## Summary of Code Requirements (continued)

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### 8.5 Confirmation of Insensibility and Death

- Birds must be inspected for signs of sensibility after the euthanasia method has been applied.
- If signs of sensibility are observed after the application of a euthanasia method, a second application of the euthanasia method or an alternate method must be immediately administered.
- Death must be confirmed before leaving birds and disposing of carcasses.

### SECTION 9 Mass Depopulation

- A mass depopulation plan must be available or accessible.
- If not using a method listed in Appendix B - Methods of Euthanasia, methods for depopulating large groups of birds on-farm must be undertaken in consultation with a veterinarian.
- Individuals who are involved in mass depopulation must be competent in the methods used.
- All equipment used for depopulating birds must be maintained in good working order.
- Death must be confirmed before disposal of birds.





