Getting Started

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Every farmer intending to raise poultry or other avian species must carefully design the animal housing system before ever purchasing the birds. Remember, you control every aspect of the bird's environment including:

- the quality of the air the birds breathe
- the type and condition of the litter they stand on
- the availability and quality of the drinking water
- the type of feed and the feed delivery system
- the length and intensity of the lighting in the barn
- the general cleanliness and sanitation of the environment

In order to maximize these aspects of good husbandry, the farmer must design the barn or animal holding facility carefully, be familiar with the equipment and understand how his/her barn works.

In most situations when we decide to get into bird production we modify existing structures or build a shell that we can afford, and then try to figure out how the birds will fit. We encourage that you look at the process from the inside out. Decide first on the type of bird you will be raising and then consider their specific needs and your expectations for the operation with regard to bird numbers and anticipated productivity. The barn location, structural design and interior design should meet these requirements.

Housing

Housing may be a permanent structure like a barn or shed, or may be a temporary structure like a mobile covered or domed shelter that can be moved regularly so birds have access to fresh grazing areas. The cost of each of these structures differs significantly and the temporary structures are of course only suitable during certain seasons and weather conditions.

Housing should provide protection from natural elements (heat, cold, wind and precipitation) and adequate comfort. It should also keep out human and animal predators. A good, secure barn design is a critical component of a good biosecurity program. The goal is to keep birds separated from wild birds and other potential disease vectors and it should be easy to clean and sanitize.

Squab housing can have special requirements to consider.

Location

Carefully consider **the location of the facility** so it will remain dry and well-drained regardless of the season and be sheltered from prevailing winds. Location and structure should follow local building codes and be in an area with easy access to feed and water. Odour, noise control and manure handling are increasingly important concerns in areas where urban development encroaches on farming areas and is a common source of friction between farmers and their neighbours. The building should be far enough away from neighbours to minimize these concerns. The structure should also be far enough away from ponds or open water to inhibit any interaction between your birds and wildlife.

Size and Style is Species-Specific

The size of the structure will depend on the type of bird and your purpose. Is this a hobby operation? Do you expect to expand into some sort of commercial production? Are you attempting to raise birds in intensive housing, in a free run environment or perhaps meet the standards of organic growers?

Different species have different needs. Ratites need indoor protection from weather extremes but grow well with access to outdoor runs. Pheasant and gamebird operations may need indoor facilities for hatching and brooding but may prefer outdoor enclosures for breeding, growing and/or release training. Squab pigeon housing should be environmentally controlled, whereas racing pigeon growers may want their birds to have outside access. Organic producers may have other requirements. Remember that with concerns about many diseases, especially Avian Influenza virus, there is increased pressure to have all birds housed under a roof and separated from wild birds. The provincial Animal Health Act in Quebec currently legislates that all birds be kept under cover, but a similar regulation is not yet in effect in Ontario.

The **animal housing areas should be dry, draft-free and easily cleaned and sanitized**. Cement floors, partial cement walls and sturdy washable materials for wall construction are desirable. Porous surfaces are harder to clean and disinfect and are a greater risk for harbouring disease causing agents. If you have a lot of manure to remove, suitable tractor or skid steer access or some other manure handling system, such as a stable cleaner is desirable. Ensure that you have suitable access to all animal holding areas and individual pens.

Lighting and Heating

Lighting can be natural (windows or curtains) or artificial, but in either case should provide sufficient light intensity to meet changing physiological requirements. As photoperiod is critical, most facilities that deal with egg production should invest in light controllers (timers, dimmers, etc.) so light can

be properly regulated. If the operation is seasonal (e.g. some gamebird or ratite operations) natural lighting may be sufficient.

Depending on the species you are raising a well insulated building may be a requirement. Housing areas may need a source of **supplementary heat** to maintain optimal temperatures for different stages of growth. Remember that baby birds cannot regulate their own body temperatures until they are 5-10 days of age. Heat sources should be safe and comply with building codes. Barn fires occur every year and improperly maintained or set up brooder heaters are a common culprit.

Litter Management

Bedding (litter) can be of many types (shavings, chopped straw, etc.). Regardless of the type, it should be absorbent enough to keep the birds clean and spread deeply enough to ensure bird comfort. Litter should only be purchased from a reputable source to ensure its cleanliness and quality. Litter management is important and poorly managed litter will result in a build up of bacteria, moulds and toxic gasses like ammonia. Wet litter may result from leaking drinkers or insufficient amounts of bedding but often it is the result of inadequate ventilation (i.e. not sufficient air exchange to remove the moisture given off by the birds). Good litter management and proper ventilation management are inextricably linked to each other. Litter should be removed regularly after birds are moved from a pen and damp or wet areas should be cleaned up daily and fresh bedding supplied as necessary to keep birds clean and comfortable. Some operations may house birds in cages or on slats where bedding is not required. Regardless of your housing system, manure should be removed regularly.

Feed and Manure Storage

The feed storage area should be physically separated from animal housing and manure handling/storage. The feed storage should be designed so that rodents and other pests cannot access the feed. **The manure storage** area should be outside the barn and designed so that any runoff is contained. Regulations under the Nutrient Management Act should be reviewed as it contains guidelines on building and designing manure storage facilities.

Laying hens with outdoor access.

Spatial Needs

Space requirements for birds depend on the species and your production system. Bird density in the barn (i.e. the number of birds per square foot or square meter of floor space) is very important and is a significant animal welfare issue. The density will depend on the species of bird, the sex of the birds (i.e. male broiler chickens and

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turkeys are larger and grow faster than females) and the final target weight. As the stocking density increases beyond optimal, performance and profitability decreases. In some species like pigeons in a squab operation, space may be calculated in cubic space rather than floor space as birds fly vertically to elevated nest boxes.

In intensive farms with high numbers of birds, the stocking density should be reduced in the summer because overheating is a concern and it can be increased in the winter. This is all dependent upon having adequate ventilation in the facility. In commercial poultry acceptable bird density is defined within their “Recommended Codes of Practice”. Codes of practice have not been developed yet for other bird species.

FLAWSS

The acronym **FLAWSS** has been used to help trouble shoot for problems in a barn. **FLAWSS** stands for: **F**ood, **L**ight, **A**ir, **W**ater, **S**pace and **S**anitation. When you are evaluating your production system, take the time to look for FLAWSS in your bird management. Evaluate each of these important and critical areas. Some specific aspects of FLAWSS are discussed in greater detail in subsequent factsheets or can be accessed through links on the www.agbiosecurity.ca website.

TAKE HOME MESSAGE

Plan your operation before you build and before your birds arrive.

SUGGESTED REFERENCES

Keeping your Birds Healthy section of www.agbiosecurity.ca: www.healthybirds.ca

Learn more about Nutrient Management: http://www.omafra.gov.on.ca/english/nm/nm_learn.htm

Poultry information - housing and ventilation: http://www.omafra.gov.on.ca/english/livestock/poultry/housing.html

Agriculture and Agri-Food Canada, Index to Poultry Marketplace: http://www.agr.gc.ca/poultry-volaille/index_eng.htm

Codes of Practice for Commercial Industry: http://nfacc.ca/code.aspx

Canada Plan Service - Poultry Section: http://www.cps.gov.on.ca/english/po5000/poultry.htm

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