FREE FOWL

OUTDOOR ACCESS AND SUMMER SHELTER DESIGN FOR POULTRY

By Jane Morrigan

In a well designed outdoor arrangement, poultry are able to forage, explore, have dust baths, stretch their wings and socialize.

The healthy expression of natural poultry behaviour is beneficial in many ways, such as reducing aggression in the flock. It also promotes exercise, which leads to stronger bones and reduced risk of osteoporosis in laying hens (a serious problem for confined hens).

Outdoor housing systems can cost less to build than fixed barns. Also, feed costs can be reduced as poultry can derive a portion of their diet from plants, worms and insects. Integrating mobile pens into vegetable and fruit production provides significant nutrients for crops. It has been found that, on average, a chicken pecks 10,000 times while foraging for grasses, insects and seeds. Chickens need interesting, nutritious places to forage and explore; otherwise they may peck and injure each other.

Free-range production sounds easy and straightforward, but caring for birds outdoors involves careful planning and excellent management. Hazards, including predation, parasites and soil-borne diseases, must be addressed when planning suitable outdoor accommodations for poultry. When managed well, rotations with other species and crops will minimize parasite risk and crop damage, thereby optimizing soil fertility and animal production at the same time.

Protection from predators

Poultry need to be protected from both daytime and nocturnal predators. To reduce daytime risk from dogs and foxes, electric net fencing can be used around open pasture pens. Other predator controls include moving the pens often so predators remain wary, keeping poultry close to the house or barn, and having larger grazing animals, such as cattle, pigs or sheep, close to the pens.

Protecting poultry from aerial predators, such as hawks and eagles, is more difficult. Trees, overhanging roofs and large 'pophole' openings in a fixed building will provide laying hens with a fast retreat to

safety. Overhead netting in yards adjacent to barns will also protect poultry. Varying degrees of success have been found with fake owls, alarm systems, hanging reflective tape or CDs, guard dogs, llamas and donkeys.

Chickens are wary and do not like to be exposed in open fields, however they can adapt to open range environments that prove to be safe. Smaller flocks of laying hens, for example, learn quickly from experienced hens just how far from the barnyard they can go foraging. Young, growing broiler chickens, on the other hand, are smaller in size and generally don't live long enough to learn about safe zones from older, wiser chickens. These animals are therefore more vulnerable to predation and require secure housing indoors and out.

To protect the flock from nocturnal predators, such as owls, weasels and coyotes, shut the birds up at night. If you have a relatively small number of birds, a good habit is to count the birds every night after they are closed up.

Environmental hazards

Farmers need to reduce the risk from environmental hazards, such as heat and cold stress, wet and windy weather and muddy or dirty conditions. Soil-borne diseases (e.g. coccidiosis) and pathogenic bacteria (e.g. salmonella) can be transmitted easily among poultry raised in dirty housing or confined to a worn-out piece of ground. Young birds are more susceptible to pathogens than older animals.

Chicks and turkey poults need warm, dry conditions for the first three to four weeks of life. Provide heat lamps and easy access to feeders and water in a secure, dry pen in the barn. This will improve the survival rate once the birds are moved to an outdoor pen. Young chicks or poults must not be housed outdoors until they are close to fully feathered, as cold and/or damp conditions can threaten their survival from either fixed or portable houses.

At Holdanca Farms in Wallace, Nova Scotia, John Duynisveld raises free-range beef, sheep, pigs, laying hens, turkeys, and broiler and roaster chickens.

Outdoor housing

Full-time, year-round egg production requires that hens have comfortable indoor housing as well as free access to outdoors.

Fixed coops or barns

Fixed shelters are labour-efficient to manage and have centralized lighting and manure removal. The disadvantages include:

- the constant use of the same patch of ground;
- tracking manure and dirt into the nest boxes;
- destruction of outdoor vegetation; and
- the build-up of pathogens, such as coccidiosis, in the soil.

Subdividing the outdoor area into several yards to be used in rotation can minimize parasite and disease transmission. Also, farmers need to provide rest periods for the ground in which poultry do not have access to a particular area. This will allow the vegetation to recover from the poultry's scratching and foraging.

Bird screening can be used overhead to protect poultry from wild bird droppings, which pose a theoretical risk of avian influenza transmission. Some jurisdictions, such as the Province of Quebec, may require this type of screening for any outdoor poultry production, including organic production.

Portable houses and pasture pens

Egg-mobiles for laying hens and "chicken tractors" for broiler chickens often have a skid design

and can be moved by hand or with a tractor or four-wheeler.

Level ground is needed for chicken-tractor-type pens to prevent birds from escaping and from predators entering. To protect young birds from wet conditions, a floor can be incorporated in the roofed section of a portable pen. Innovative flat, hooped or domed pen designs can be made from PVC pipe, wood and/or rebar.

Outdoor covered veranda with adjoining free-range area is suitable for a larger flock of laying hens.

Housing design features

To reduce muddy conditions where most of the traffic occurs, there should be good drainage outside the barn doors or popholes where hens enter the barn.

Organic certification requires that poultry have access to outdoor areas covered with grass or other plants. Hens are more likely to use the area if there is sufficient shelter, such as trees or bushes. Artificial shelter, such as tents, also work. Fences between and around the outside yard can also serve as cover. To attract hens outside, provide water, feed and/or a good dust-bathing area.

Popholes must be tall enough to allow easy passage of the hens, and wide enough that a few hens cannot block the entry or exit of other hens. Although wide popholes are desirable for this reason, they may also enable unwelcome animals to enter the house. To prevent this from happening, install vertical bars spaced about 15 cm (6 in.) apart.

Another drawback of large, wide popholes is that they may influence the climate in the house, especially in cold, wet and windy weather. A solution is to protect the popholes with a small roof above, and slats or gravel for drainage on the exterior side, as well as wooden baffles to minimize wind entry. Sliding doors that can be closed in poor weather can be installed.

Covered verandas can be built. The wall between the inside and the veranda contains doors or popholes for the birds to go back and forth. The outside wall can be a curtain that can be lifted to provide hens with access to outdoors. This design can be adjusted according to weather and natural light conditions. If the birds do not range freely, the outside wall can be constructed of chicken wire mesh to prevent hens from going out, but permitting fresh air to blow freely through the area. The floor of the covered veranda is usually covered with litter for the hens to scratch. Another option is a screened porch with a partial screen floor above the ground to allow for manure removal from below.

Chickens perch on 'rings' that are fixed to a central mast in the climate tent.

Integrating farm fowl

Integrating other species, such as sheep, in a poultry pasture rotation can maximize pasture area use and control parasites. Rotating different species or age groups of poultry, however, is not recommended because of the risk of disease transmission from one to the other.

Integrating moveable pens with vegetable crops can work well. The poultry can forage while weeding and clean up residue among the vegetables. It is important, however, to plan the timing so fresh manure from the poultry does not contaminate the crops. The national organic standard requires that non-composted manure must be incorporated into the soil at

Article 6.8.1(a) of the Canadian Organic Standard states that livestock producers must provide "access to the outdoors, shade, shelter, rotational pasture, exercise areas, fresh air and natural daylight suitable to its species, its stage of production, the climate and the environment."

least 90 days prior to harvesting crops for human consumption that do not come in contact with the soil (e.g. tomatoes), and 120 days prior to harvesting crops for human consumption that have an edible part that comes into contact with the soil (e.g. potatoes).

One very good option for outdoor housing is to integrate laying hens with organic raspberry and vegetable production. For example, Fred Reid of Olera farms in Abbotsford, B.C., has used laying hens for weeding his raspberry crop.

Danish one-unit tents

In Denmark, outdoor tents are sometimes used to raise flocks of 150–300 birds in orchards or wooded areas. The central mast of the circular tent supports an artificial tree consisting of rings that serve as perches. A net suspended by the tent poles provides shelter.

The base is a straw-covered layer of mussel shells, which provide drainage. Nest boxes are placed around the tent, and the birds always have access to an orchard.

Dual-purpose breeds, such as Light Sussex and New Hampshire, are used. In these "one-unit" pens, ten percent of the hens will hatch their fertilized eggs and the resulting chicks grow up with their mother hens. The hen chicks will be raised for egg production and the roosters will be raised for meat.

Danish "one-unit climate tent" for dual-purpose chickens.

Egg production is maintained according to the hens' natural seasonal rearing cycle, whereby production begins as natural day length increases in the early spring and wanes as the days become shorter in the fall. Additional lighting can extend the cycle.

Summary

Organic poultry producers can draw on several innovative options to design outdoor access for their birds that fulfill natural behavioural needs. Knowledge of natural animal behaviour and evolution serves as an excellent guide in formulating plans, and care must be taken to pay close attention to individual animal needs. Both benefits and hazards must be considered. It is possible to strike a balance between practical limitations and fulfilling the ethical obligations to animals in a way that is both healthy for the flock and profitable for the organic farmer.

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Photo caption for page 8: Free-range turkey production using a large moveable shelter.

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What is your chicken tractor like? Please send pictures and descriptions of your chicken housing to janet@cog.ca.