

TURKEY FARMING IN KENYA



Housing

- Space requirement is 2 birds per square metre for adults and 3 birds per square metre for growers.
- Breeding houses should have laying nests (30×30x 30 cm) proportionate to the number of laying birds with each nest accommodating 4-5 birds.
- It should provide protection from extreme weather, predators, reduce spread of pathogens and provides protection from vandalism.
- It should allow separation of birds according to age for easy management. In case of small flocks, simple structures may be built using locally available material.
- For commercial production, turkeys are raised under intensive conditions similar to those of broiler chickens.

Factors considered in constructing a commercial turkey house

- Orientation: The orientation of the building with respect to the sun and prevailing winds is important. An east-west orientation is preferable as it minimizes heat gain in summer. The house must be constructed in such a way that it takes into account the prevailing winds to enhance drying of manure or litter.
- Width: The house should be no more than 10 m wide. Widths greater than 10 m have difficulties with ventilation, especially if open-sided houses are used for rearing.
- Length: Any length can be used. The house should be at a reasonable distance from other houses to minimize disease spread. Given shortage of farmland, a minimum distance of about 10 m is recommended though longer distances would be ideal.
- Topography: The topography should be high and levelled with no abrupt slopes. A relatively level area requires less site preparation thus reducing construction costs.
- Drainage: A porous soil and gentle slope will enhance dryness.
- Floors: Solid floors are preferred over earthen floors as they are durable and easy to clean and disinfect.
- Type of house: Poultry houses can be open-sided (rely on natural ventilation) or environmentally controlled (temperature and ventilation are controlled). Open-sided houses are common because they are cheaper to construct and maintain than controlled houses.

Preparation for poults arrival

- Clean and disinfect the house, allow it to rest for at least 7 days prior to poult placement.
- Provide equipment such as feeders, drinkers, brooders etc. which should be cleaned and disinfected.
- Fresh litter (straw, wood shavings etc.) should be spread over the floor area and brooder guards/rings set up. Wood shavings are the common litter used in Kenya. Litter provides insulation from the floor and will soak up moisture from the droppings. It also helps to prevent damage to the birds legs due to slipping on slippery surfaces. The depth of the litter should be 8 to 10 cm.

- Feed and clean water should be provided before poult's arrival. Feed may be placed in flat surfaces such as egg flats or box lids to encourage them to feed.
- The producer should introduce poult's to water by dipping their beaks in the water immediately they are placed on the floor. Poult's may be encouraged to drink and feed by hanging bright 100 watt bulb 1 m above litter level. Furthermore, poult's may be encouraged to eat by placing feed in small silver-coloured trays and drink by placing coloured marbles in the drinkers.
- The heat source should be on 24 hours before the arrival of poult's.

Brooding

- The term brooding refers to the period of poult's life from day 1 to about 6 weeks of age.
- Poult's are usually placed in brooder rings for the first 5 to 6 days. From 7 days to 5 weeks of age depending on the sex of the bird, they are given from 0.9 to 1.4 m² (1 to 1.5 square feet) of floor space per bird.
- During this time, the poult needs supplemental heat, special starter feed and protection from exposure to disease. One way of reducing disease exposure is separately locating the brooding phase from growing and reproductive phases.

Sources of heat

- The main sources of extra heat to poult's are gas brooder stoves, charcoal jikos and to a lesser extent paraffin stoves.
- Brooder stoves provide poult's with supplemental heat from time of placement until they are relocated to growing facilities. The stove is suspended from the roof and can be raised or lowered as needed.

Brooder Guards/Rings

- In the early stages of brooding, it is ideal to confine newly hatched poult's to a smaller space to keep poult's close to brooder stoves for heat, feed and water for the first 5 to 7 days of age or longer in colder weather.
- Brooder guards usually consist of a 30 to 45 cm wide strip of hard board which has been cut to an appropriate length in order to form a ring 2.4 to 3.6 m in diameter. It is set up in the pen where the chicks are placed and removed once they are a few days old and have

started jumping out. The size of the guards is increased as poults get older to give them enough room to move about or to move away from brooder as temperature gets higher than they can tolerate.

- Each brooder has 3 drinkers and at least 3 feeders.

Lighting

- Constant lighting at a fairly high intensity (20-50 lux) is required to aid poults in getting used to their new environment as well as to find the water and feed.
- Light intensity is lowered to 5 lux after about 5-7 days. At this light intensity it is nearly impossible to read a newspaper in the shelter. The lower light intensity helps to minimize cannibalism.
- After 3-7 days, lighting programs that reduce the number of hours of light a day during the growing period can be used to reduce the incidence of various metabolic diseases and lame birds .
- If continuous light is used, an hour of darkness should be provided daily to prevent crowding and piling up in corners (causing suffocation) ,when a power failure occurs. Birds raised for egg-laying purposes should be provided a maximum of 8- 10 hours of light daily until they are sexually mature and produce eggs, which is usually at 20 weeks of age.

Nutrition and Feeds

- During the first week of brooding, small amounts of feed should be provided in feed trays, box lids, egg flats and/or spread on newspapers on litter to encourage them to feed.
- placing feed and water close together in the first few days of brooding assists the chicks to eat and drink, thus reducing mortality due to starvation. However, after a few couple of days feed should be placed immediately adjacent to drinkers to prevent wet feed and dirty water.

Debeaking (beak trimming)

- Poults should be debeaked in order to control feather pecking and cannibalism, especially if they are raised in confinement. Debeaking is done at 10 days of age to prevent cannibalism.

Desnooding

- The removal of the snood or dew-bill (the tubular fleshy appendage on top of the head near the front) is referred to as “desnooding”.
- It helps to prevent the head injuries from picking or fighting and may reduce the spread of erysipelas, should this disease get started in the flock. The snood can be removed at one-day-old by thumbnail and finger pressure. After about 3 weeks, it can be cut off close to the head with sharp, pointed scissors.

Toe Clipping

- Toe clipping or removal of toe nails is usually done at the hatchery, but toes of turkeys as old as 5 weeks can be clipped when turkeys are debeaked.
- Toe clipping can improve the grade of processed turkeys. Turkeys in large groups, especially when excited, often step on each other causing scratches or skin tears on the backs and sides.
- The most common form of toe clipping involves cutting the inside and middle toe (front) on each foot. Toes can be cut with surgical scissors, a nail clipper or a modified hot-blade debeaker.

Health Management

- It appears that turkeys are susceptible to diseases, indicating that they require a much higher level of management and skill than other domestic fowls.
- There are four primary causes of disease: genetic, nutritional, environmental and infection.

Diseases

Some common diseases of turkeys include blackhead, Newcastle disease (NCD), erysipelas, fowl cholera, fowl pox and haemorrhagic enteritis.

1. Blackhead (Histomoniasis)

Turkeys are susceptible to black head (Histomoniasis). The disease attacks turkeys of all ages. Poults aged 6-12 weeks may show few symptoms except for ulcerated blind pouch. Older birds stand with ruffled feathers and drooping wings. Diarrhoea is usually present and the faeces may vary from bright green to sulphur-yellow.

2.Haemorrhagic enteritis

Hemorrhagic enteritis is an acute gastrointestinal disorder affecting young turkeys. In its most severe form, it is characterized by depression, bloody droppings, and substantial mortality. Hemorrhagic enteritis is geographically widespread and considered endemic in areas where turkeys are raised commercially. The usual route of infection is oral, and virus is often introduced onto previously uninfected premises via personnel or equipment contaminated with infectious faeces. Turkey poults aged less than 4 weeks are resistant to infection due to age-related resistance or, the presence of maternal antibody. The virus may survive under moist conditions in litter beyond the refractory period. Large quantities of virus are shed in the faeces facilitating rapid spread of disease. Morbidity usually approaches 100%. In addition to good biosecurity, prevention hinges on the use of vaccines which are administered in the water at ~4-5 weeks of age.

3.Erysipelas

Erysipelas occurs sporadically in poultry of all ages. Turkeys are susceptible regardless of sex or age. Outbreaks usually occur suddenly, with a few birds being found dead followed by increasing mortality on subsequent days. Mortality may range from less than 1% to 50%.⁹ The causative agent is *Erysipelothrix rhusiopathiae*. The organism is shed in faeces from infected animals and contaminates the soil, in which it may survive for long periods depending on temperature and pH. The onset of cold and rainy weather is associated with disease occurrence. Poultry, as well as other animals, may be carriers and shed the organism without showing clinical signs of disease. In addition to causing mortalities, the disease reduces the fertility status of toms. Marketing losses may also result from condemnations or downgrading of carcasses due to the evidence of septicaemia or lack of finish. Erysipelas is controlled by vaccination using both inactivated and live vaccines.

4.Newcastle disease

Although NCD is not a major problem in turkeys, it is always wise to vaccinate against it because it leads to serious disruption of egg production in turkey breeding hens. The NCD vaccines available in Botswana are HitFowl pox, Fowl pox vaccine has been used successfully to protect flocks in the last many years. The vaccine is available locally in the retail outlets.

Turkeys should be vaccinated at 2 to 3 months of age but those to be used as breeders should be re-vaccinated before production. Revaccination at 3-4 months intervals may be helpful, depending on the level of risks.

5.Parasites

- As in other poultry species such as chickens, parasites affect the turkeys by causing discomfort or significant mortalities in birds, thus reducing the birds' productivity levels.
- The most common parasite of turkeys is the fowl mite and roundworms, they are a very common internal parasite. The fowl mite is distinguishable from a fleck of dust only by the fact that it moves quite rapidly. The predilection site for fowl mite is tail feathers, as well as, the fluff at the rear of the keel. Fowl mites are effectively using chemical dusts such as DUDU DUST
- A regular, once-a-month deworming with an appropriate dewormer containing piperazine citrate eg ASKAREX will reduce roundworms to a harmless level.

Biosecurity

- Biosecurity is utilization of measures which can stop or slow down the introduction and spread of infection into or between components of production systems.
- It includes managing people, equipment, pests and their potential for carrying diseases into a flock. Biosecurity must be a priority to control infectious disease and minimize introduction of pathogens into flocks.

Biosecurity measures include:

- Restricting visitors to production sites by installing fence enclosures, control movement of workers and equipment between shelters, production sites and age groups.
- Provide foot baths, showers and protective clothing at strategic points; reduce microbial load on trucks and equipment by washing and disinfecting at critical times.
- Locate production sites strategically in relation to other production sites and movement of poultry to minimize transfer of disease causing organisms and to control rodents and wild birds effectively.
- Confine pets away from commercial poultry.

Immediately following depopulation, the buildings and equipment should be thoroughly cleaned and disinfected using ULTRAXIDE or KUPACIDE before new birds are introduced.

- Manure should be removed and disposed of at least 1 km away from the production sites. Mortality disposal should also form part of the biosecurity protocol.

Common Diseases of Turkey	Cause	Symptoms	Prevention
Arizonosis	<i>Salmonella Arizona</i>	Poults unthrifty and may develop eye opacity and blindness. Susceptible age 3-4 weeks	Elimination of infected breeder flock and hatchery fumigation and sanitation.
Blue comb disease	<i>Corona virus</i>	Depression, loss of weight, frothy or watery droppings, darkening of head and skin.	Depopulation and decontamination of farm. Give rest period.
Chronic respiratory disease	<i>Mycoplasma gallisepticum</i>	Coughing, gurgling, sneezing, nasal exudates.	Secure <i>Mycoplasma</i> free stock
Erysipelas	<i>Erysipelothrix rhusiopathidae</i>	Sudden losses, swollen snood, discoloration of parts of face, droopy	Vaccination
Fowl cholera	<i>Pasturella multocida</i>	Purplish head, greenish yellow droppings, sudden death	Sanitation and disposal of dead birds.
Fowl pox	<i>Pox virus</i>	Small yellow blisters on comb and wattles and scab formation	Vaccination
Haemorrhagic enteritis	<i>virus</i>	One or more dead birds	Vaccination
Infectious synovitis	<i>Mycoplasma gallisepticum</i>	Enlarged hocks, foot pads, lameness, breast blisters	Purchase clean stock
Infectious sinusitis	<i>Bacteria</i>	Nasal discharge, swollen sinuses and coughing	Secure poults from disease free breeders
Mycotoxicosis	<i>Fungal origin</i>	Haemorrhages, Pale, fatty liver and kidneys	Avoid feed spoilage
New Castle disease	<i>Paramyxo Virus</i>	Gasping, wheezing, twisting of neck, paralysis, soft shelled eggs	Vaccination

Marketing

- Traditionally, turkeys are sold at Christmas and Easter as big birds ranging from 2.5 to over 5.0 kg in size (dressed weight). However, this requirement is gradually changing as

families prefer to buy smaller one-meal birds all year round. It is however apparent that sales of turkey meat are high at the conclusion of the year.

- Hens are marketed between 14 and 16 weeks of age. At this age hens will typically weigh from 14.7 to 17.5 pounds. Toms are often marketed between 17 and 20 weeks of age and will weigh 26.4 to 32.3 pounds.
- Market age is determined by the product being produced. Most integrators produce both whole bodied and further processed products. About 70% of all turkeys grown are further processed. For this market, the industry prefers to grow toms, because their larger weight is advantageous. However, many hens are also further processed even though the unit cost is higher with the lighter weight.
- About 16% of all turkeys are processed for the whole body market. A larger proportion of hens are sold as whole body due to the preference for further processing the larger toms. About 14% of all turkeys produced are processed as parts. In the past, parts like wings and drums were often sold at greatly reduced prices. Today, these parts are used extensively in further processing and often end up as part of a further processed product such as ground meat.