



# Broiler Production



Produced in collaboration with the Ministry of Agriculture the  
Department of Veterinary and Livestock Services.

Funded by BMZ, implemented by the GOPA consortium in  
Collaboration with GIZ.

GOPA worldwide consultants; [www.gopa-group.de](http://www.gopa-group.de)



# HOUSING & HOUSING MANAGEMENT

## Purpose for Housing

A properly built house is the first step to successful broiler farming. A good house should provide the following:

- ❖ Protection against-
  - ✓ adverse weather i.e. **cold, excess heat, rain, wind**
  - ✓ Diseases
  - ✓ Birds of prey
  - ✓ Predators i.e. **rats, dogs, cats, snakes etc.**
- ❖ Provide ideal environment for maximum performance

## Site Selection

- The land on which the house is built should not compete with other agricultural activities such as good soil for crop production, unless there is no alternative site
- The house should be placed away from other livestock i.e. **pigs, cattle, goats etc.** to avoid cross contamination
- Swampy soils should be avoided at all costs

Prevailing winds

The poultry house should face North/South **(the open sides)**

- Houses should be at least 50m apart or step staggered in positioning

Access and visibility are important for marketing and security

## Foundation

- ❖ The foundation should be three times the width of the wall, and as thick as the wall itself
- ❖ Foundation can be made of rock or bricks
  
- ❖ Poles that support the roof should also have a foundation, preferably of rock
- ❖ Strong enough to withstand a 50 year storm e.g. Cyclone Domonia (1984)

# HOUSING & HOUSING MANAGEMENT

## Floor

Use concrete floors

Ease of cleaning and disinfection

Rodent protection

Durable

Floor level at 20cm above outside ground level

Slight slope (about 5%) towards waste exit

Easy to push water when cleaning

Provide a water outlet hole at the base of the exit wall

Floor rough enough to keep bedding in place

## Walls

The inside of the walls should be plastered smoothly, for ease of cleaning and disinfection  
Treated poles (at least 15cm diameter) are part of the open walls

To support the roof

Either in line with the dwarf wall or positioned inside

Another line of poles may run along the middle of the house for further support if the width is above 6m

Recommended wall height is 3.5m S and 3m N  
Allow no spaces for entrance of any animal e.g. snakes

Doors open away from chicks

## Roof

Protect against hail, rain, sun, cold, wind

Roof can be thatch or iron sheets

❖ Thatched roof:

Thatch provides insulation

Less noise

Cheap to obtain

Not very durable

Prone to fire damage

Perfect home for rodents

❖ Iron Sheets roof:

Durable

Almost fire proof

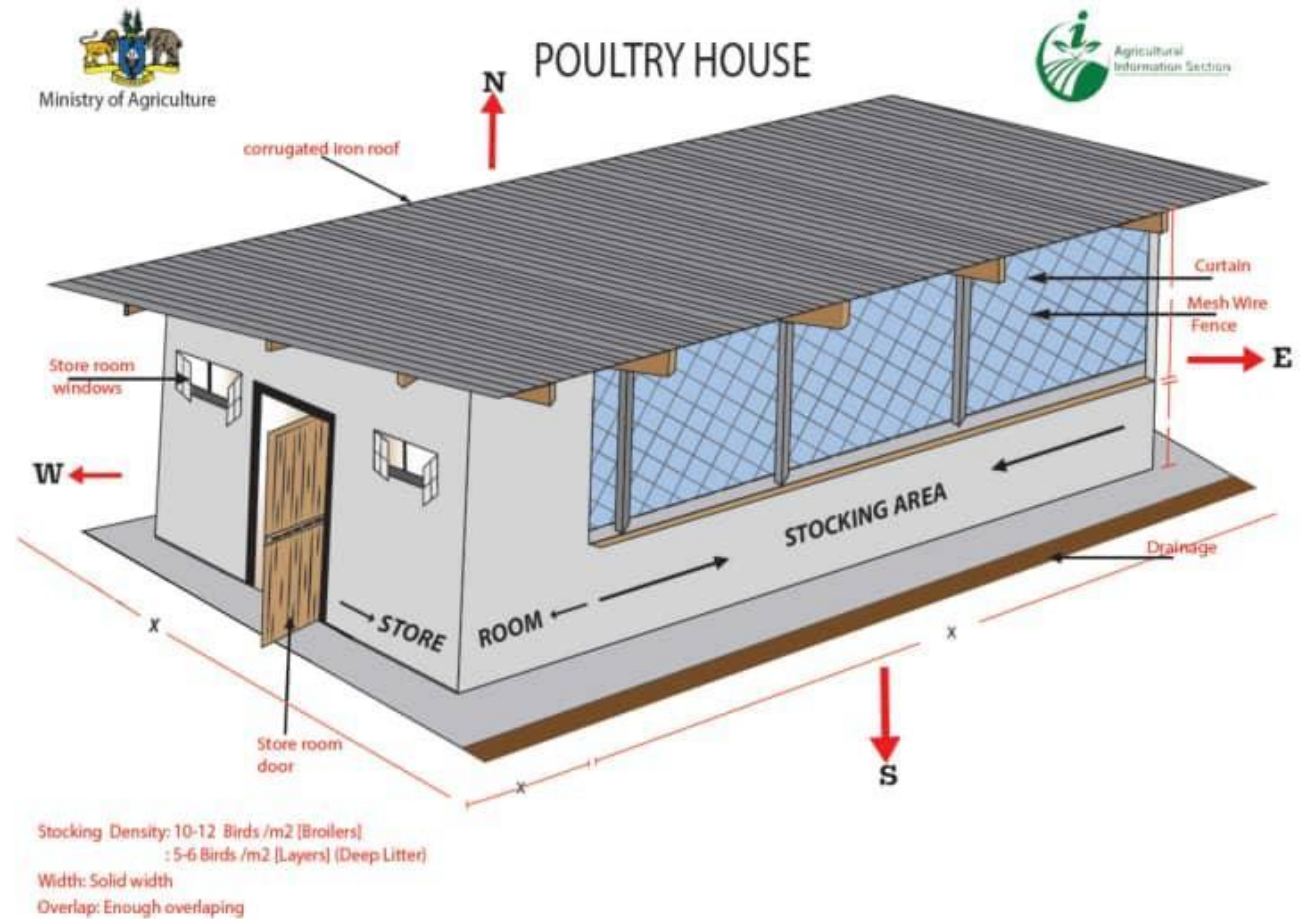
Easy to clean and disinfect

Expensive to buy

# HOUSING & HOUSING MANAGEMENT<sup>T</sup>

## Storeroom

1. For storage of feed, extra equipment, tools
2. Also serves as an office
3. Area enough to store feed for at least 2 weeks
4. Window to provide light
5. Footbath at the main entrance
6. Provide palettes to stack bags of feed
  - Allow for air circulation
  - Prevent feed spoilage



# Standards for Broiler Production



- ✓ Over population leads uneven growth, high disease infestation and cannibalism
- ✓ Understocking leads to poor weight gains
- ✓ Distance between feeders or drinkers: a minimum 40cm
- ✓ Drinkers and feeders placed at least a meter away from the wall

# FEEDING EQUIPMENT



## Chick feed tray

- 3 trays per 100 chicks
- From 1 to 7 day old chicks
- May be round or square



## Tube feeders

3 feeders per 100 birds

From 7 day old to end of life cycle

May carry up to 13kg of feed



## Pan Feeder

3 feeders per 100 birds

From 7 days to end of life cycle

Automatic

## Water Founts

### Standards

- 3 founts per 100 birds
- From 1 to 7 days old
- 3 to 5 Litres



### Standards

- 1 fount per 100 birds
- 8.5 to 12 Litres
- From 7 days to end of life cycle

# PREPARING FOR CHICK ARRIVAL

## House Preparation

- Have and follow a chick placement programme in place.
- Clean and disinfect housing prior to chick arrival.
- Houses to be preheated for a minimum of 12 hours prior to chick arrival.
- Recommended environmental conditions at placement are:
  - ✓ Air temperature 34°C, measured at chick height in the area where feed and water are positioned.
  - ✓ Litter temperature: 32 – 34 °C
  - ✓ Relative humidity (RH): 30 – 50%
  - ✓ Spread litter material evenly.

## House preparation (Cont...)

- Mark out the brooding area and demarcate at a stocking density of 50 birds or less per square meter.
- Spread bedding on the floor and level it at a depth of 8-10 cm. (use wood shavings)
- Place alternate rows of chick paper and chick founts as per recommendations.
- Put water with vitamin solution in the founts 2-3 hours before chick placement. According to Viola et al. (2003), a 40% water restriction decreases the feed intake, body weight, and FCR at 14 days. We need to guarantee 24ml of water per bird in the first 24 hours.
- Place chick trays on chick paper and feeders along empty rows and fill with starter feed. (40g per bird in trays and paper).

# Chick Arrival

## Chick Arrival

- Unload and place chicks quickly
- Ensure feed and water is available immediately
- Make sure there is enough light to stimulate chick activity
- Allow chicks to settle for 1-2 hours then check behavior
- Use chick behavior to determine if temperature is correct



## Signs of a healthy day old chick

- active with bright eyes wide open,
- strong and shiny shins,
- navels healed,
- without physical defects,
- no pathogens and with good maternal immunity.

## Ventilation

- Ventilation without draught is required to provide fresh air and remove waste gas, excess moisture and heat.
- Poor ventilation may lead to: Heart failure (flip-overs) and ascites or water belly.
- If curtains must be open, have the windward curtain higher (less open) than the leeward curtain. If there is strong air, do not open the windward curtain, adjust only the leeward curtain.

# BROODING AND FEEDING OF BROILERS

When looking after broilers, the following mind concept is vital:

The **brooding period** is the most important period of the chick's life.

The **first week** is the most important week of the chick's life.

**Day one** is the most important day of the chick's life.

## FEEDS AND FEEDING

- Definition of Feed: the nutritionally balanced diet that fulfills all the physiological demands of the growing broiler
- Feed constitutes about 75% of the operational costs in broiler production (**avoid wastage**)
- Broilers are fed *ad libitum* (**not the same as unlimited**)
- Each broiler consumes about 3 to 3.5kg feed in 42 days

# Feeding Programmes

## ○ Two stage Feeding:

Feed Type	Feeding Time (Days)	Feed Qty (50kg)
Broiler Starter Crumbles	1-21	3
Broiler Finisher Pellets	21-42	5

## ○ Three Stage Feeding

Feed Qty (50kg)	Feed Qty (50kg)	Feed Qty (50kg)
Broiler Starter Crumbles	1-21	3
Broiler Grower Pellets	21-35	3
Broiler Finisher Pellets	35-42	2



# Feeding

## ❖ Mash

- Wasteful - **floor spillage is common**
- Reclaiming from the floor is impossible
- Chickens take too long to fill the crop (**energy taxing**)

## ❖ Pellets

- Easy to pick
- Floor reclaiming is easy
- Efficient usage of feed



## Water

- ❑ The most essential nutrient
- ❑ Necessary for all physiological and reproductive functions
- ❑ Broilers drink twice as they feed (**by weight**)
- ❑ Water should be of human consumption quality (**taste, temperature, look, smell**)
- ❑ Get your water from the same source as the chickens

# Marketing

## Marketing

It is very important that before a farmer embarks on broiler production, she must do market research;

- know who her customers are, what they need and want.
- observe her competitors, people already in the business and how they perform.
- know the quantity of broilers to produce and when to stock.
- know the type of marketing system to use (Dressed or Live Market).

## When satisfying your customer.

- product must be of good quality.
- Always give first preference to customers who have standing orders according to their desired quantities
- All consignments must be delivered in time to maintain constant supply.
- Before pricing her products, she must know her total cost to guarantee a good price. Prices should be low enough to attract customers.
- Prices should be high enough to give your business profit.
- Place or location
- How do customers reach your place or farm
- Where is the product situated

## Promotion

The farmer must advertise her product:

- By word of mouth; *Indali, Indali*
- Media, Radio, Television, Signs (written boards)

## Sales promotion.

The farmer should provide discounts e.g if a customer buys 10 or more birds.

*A satisfied customer is the best customer*



# Financial Records

Item	Qty	Unit cost (E)	Total Cost (E)
D.O.C	5000	6.50	32500
Starter Crumbles	150	270	40500
Finisher Pellets	250	250	62500
Bedding/Sawdust	4	100	400
Rectosept	2	80	160
Virukill	1	100	100
Clone 30	5	50	250
Stresspk	2	40	80
Labour	1	900	900
Transport	2	300	600
Electricity	1	100	100
Any other...	1	400	400
Total Expenses			139690

# Gross Margin Analysis

Item	Qty (E)	Comments
Total Income	170696	Sales of 4492 chickens @E38 each
Total Expenses	139690	Excludes overheads
Gross Margin (E)	31006	Positive margin

# BROILERS HEALTH & BIOSECURITY

## Farm Organization

- Space out your houses (50m apart) or step stagger them
- Assign each farm worker to a specific house or worker should start from young to older birds or from healthy to sick birds
- Workers should wear farm uniform (overalls and gum boots)
- No visitors into the broiler house

## Farm Organization (continued)

- Avoid transferring farm tools between houses, otherwise disinfect tools at the entrance
- Prevent other livestock from coming into contact with the broiler house

## Hygiene Practices

- Practice daily cleanliness (wash hands before and after)
- Before entering the broiler house, dip your feet in the footbath
- Knock at the door to avoid frightening the birds – enter
- Stand at the door and observe: look, smell listen

## Hygiene Practices (continued)

- Move around slowly and observe bird behavior
- Remove dead birds immediately
- Remove wet patches and replace with dry bedding
- Adjust curtains according to weather and house situation
- Wash drinkers daily and disinfect them weekly
- Fork out the litter once a week and level it out

# Broiler Vaccination Program

- This is the introduction of artificial immunity through a mild form of the pathogen (virus), to trigger an antibody release into the blood stream, for future infection fighting
- Vaccine should be stored at about 6 degrees Celsius (fridge door temperature)
- Starve the birds of water for 2-3 hours before giving vaccine
- Vaccination programs differ from company to company and from breed to breed

Age	Disease	Vaccine	Method
1	NCD + IB	Hitchner B1 + IB	Eye drop
10	Gumboro/IBD	Gumboro/IBD Vaccine	Drinking water
18	NCD	Clone 30/ LaSota	Drinking water/Spray
21	Gumboro/IBD	Gumboro/IBD Vaccine	Drinking water/Spray
28	NCD	Clone 30/ LaSota	Drinking water/Spray

# COMMON DISEASES (SYMPTOMS, SIGNS & TREATMENT)

## New Castle Disease

- It is respiratory and nervous dzz of chickens
- Transmitted by wild birds, humans, chicken waste

### Signs

- Coughing
- Lacrimation
- Dyspnoea
- Resp. Depression
- CNS signs
  - Wing paralysis
  - torticollis
- Greenish diarrhoea

Kills, no Rx

## Avian Influenza

- Disease of the URT in poultry
- It affects CNS
- High mortality and morbidity

## Infectious Bronchitis Virus (IBV)

- Enters the chickens through the respiratory and conjunctiva
- Multiplies in the body and leaves through droppings and respiratory secretions

### Signs

- Difficulty to breath
- Nasal discharge
- Infections of uterus
- Deformed eggs
- Conjunctivitis
- **RX: None**

## Infectious Laryngotracheitis (ILT)

- It is an upper respiratory disease of chickens caused by herpes virus
- Chickens are infected by exposure to virus or missed vaccination.
- Affects the trachea

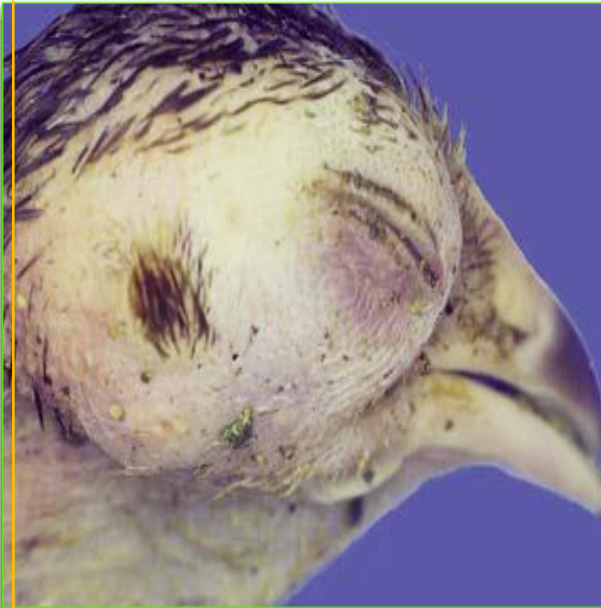
### Signs

- Difficulty in breathing
- Expectoration of blood
- Conjunctivitis
- **RX: None**

# COMMON DISEASES (SYMPTOMS, SIGNS & TREATMENT)



**Infectious  
Laryngotracheitis  
(ILT)**



**New Castle  
Disease**



**Avian  
Influenza**



**Infectious  
Bronchitis Virus  
(IBV)**