

Poultry Training Manual:
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SECTION ONE

1.0 Introduction

Poultry is widely distributed in Africa and has distinct popularity among smallholder farmers. These smallholder farmers are mainly backyard or household farmers, mostly in urban areas. However, the increase in the demand for poultry products has led to the growth of the industry through the establishment of large or commercial scale poultry farms with a good market for their products.

1.1 Poultry industry trends in Nigeria

There are improved breeds of poultry birds, quality feed, vaccines, drugs, equipment etc., which has made the management of poultry birds more efficient with a potential increase in profit.

The growing need to increase food production is the brain behind URBAN AGRICULTURE Championed by the Africa Projects Development Centre (APDC).

1.2 POULTRY VALUE CHAIN

1. Poultry Meat Production

Chicken meat (broiler, layers, noilers & cockerel)

Turkey, ducks, geese, guinea fowl, peacock, quails & ostrich

2. Egg Production

Chicken eggs, turkey eggs, guinea fowl eggs, egg powder production

3. Poultry Bird Processing

Frozen and smoked-dressed chicken (whole and parts),
Frozen and smoked-dressed turkey (whole and parts)

4. Poultry Egg Marketing

Packaged eggs in crates or packed in six, twelve twenty and thirty

5. Poultry Meat Marketing

Select cuts (wings, thigh, drumsticks and breast) sold per weight in kg

6. Poultry Feather Marketing

Peacock feathers

7. Poultry Feed Production

8. Poultry Waste Management

1.4 Benefit of poultry production

- Income Generation
- Employment Creation
- Food Security
- Wealth Creation
- Ready made Market
- Investment for Future generation or prosperity
- Provision of Raw materials

Table 1: Some terminology used in poultry

Cock	Male fowl above one year of age
Cockerel	Male fowl below one year of age
Hen	Female fowl above one year of age
Pullet	Female fowl below one year of age
Chick	A young fowl (0-6 weeks old).
Capon	A castrated male fowl
Caponization	Process of castration in fowl
Treading	Act of mating in fowl
Grower	Fowl between 7 and 19 weeks of age
Layer	Female fowl over 20 weeks of age that can lay eggs
Broiler	Fowl reared for meat purposes
Clutch	A group of young chicks
Flock	A group of fowls
Chicken	Meat of fowl
Pen	A place where the fowls are housed

SECTION TWO POULTRY BREEDS

2.1 Indigenous breeds

The most commonly kept indigenous breed of chicken in Nigeria is not an official breed and does not have a breed standard

2.1.1 Exotic Breeds

Commercial poultry production in Nigeria relies exclusively on the use of exotic breeds that adapt well to Nigerian environmental conditions (e.g, Rhode Island Red, Anak, White Leghorn, Black Nera, Arbor Acre, Marshall, shika brown, is a brown etc).

2.1.2 Breed of Broiler: Cornish cross OR rock, Arbor acres, Anak 2000, White leghorn, Hybro, Hubbard, Cobb 500, Marshall, Etc.

2.1.3 Breeds of Layers: ISA Brown, ISA White, Dominant Black, Lohmann Brown, Dominant Brown, Dominant Blue, Dominant, Sussex, Dominant Barred, Hyline, Nera Black, Nera Brown, etc.



Picture 1: BROILERS



Picture 2: LAYERS (ISA BROWN)



Picture 3: Layers (NERA BLACK)



Picture 4: COCKEREL



Picture 5: NOILERS

2.2 HOUSING IN POULTRY PRODUCTION

A house is the most important component in poultry production. Investments in housing constitute 85% of the total capital investments. A good poultry house must protect the birds from extreme and unfavorable weather conditions. A bird that is comfortable and free from stress will perform at its maximum potential. High ambient temperatures induce heat stress on birds, thereby reducing feed/energy intake, the hatchability of eggs, and fertility, while increasing mortality, water intake and wet litter.

2.2.2 Requirements for farm site selection

Environment: Commercial poultry farms are best located far from dwelling areas to avert inconveniences to people such as noise and strong offensive odors.

Utilities and public amenities: You would need some public utilities like electricity and water to run your commercial poultry farm.

Expansion plan: Agribusiness are expanding based enterprises if managed efficiently.

Drainage: Ensure that the site has a proper drainage system; the absence of a good drainage system may lead to erosion and cause great problems for your farm.

Prevailing wind and sunshine: The distance from the livestock house location to any residence would need to be greater if prevailing winds are directed towards the residence.

Waste Management: Waste from your poultry house can be used to generate biogas or sold/used as manure in crop production.

2.2.3 General Prerequisites for a Poultry Pen

1. If possible, build the house in an east-west direction. The chickens will be less exposed to direct sunlight. Plant trees around the house so that its roof stays in the shade.
2. Ensure that the roof has a large overhang (90cm or more) to limit direct sunlight and prevent rain from wetting the inside of the house.
3. Keep the bottom 50 cm of the side walls closed and the rest open. There should always be enough fresh air in the house. Close the top part of the side walls with chicken-wire gauze.

4. Build the roof as high as possible above the floor. It will then be less hot inside the chicken house and ventilation will be better.
5. Try to limit the occupancy of the chicken house as much as possible. Many birds in a small house can cause problems due to the extra warmth they create and the increased chance of parasite infections.
6. In deep litter housing system, birds should be stocked not more than 3 per square meter.
7. To stimulate feeding, turn on a light in the house before sunrise and after sunset when it is cooler. This also helps to keep a steady level of egg production.
8. It is necessary to make sure that the house is easy to clean and, if possible, easy to disinfect. For this, a poultry house will need a concrete floor. An important condition for permanent housing in intensive housing system is the permanent availability of feed. A constant supply of fresh water is also essential.
9. If the housing is to contain many birds, a separate working space in front of the house is necessary. Feed can be stored there, and eggs can also be kept there temporarily. To avoid deterioration of the quality of the eggs, they should not be kept here longer than one week. It is best to keep eggs in a cool space, at about 20°C. This can be done by keeping the number of windows in the storage space to a minimum and only ventilating at night when the air is cooler.

10. Provision of foot-dip at the entrance of the pen is essential.



Picture 6: A Standard Poultry house



Picture 7: A Standard Poultry Pen





Pictures 8: Showing Low Budget Poultry Pens.

2.2.4 SYSTEM OF HOUSING IN POULTRY PRODUCTION

2.2.4.1 PRODUCTION SYSTEMS

1. Extensive system
2. Semi-intensive system
3. Intensive system

2.2.4.2 Extensive system

The extensive system is also known as the free-range system. The birds roam about for feed. Shelter is not provided for the birds. It is mostly common in villages.

Benefits:

- It requires low capital input.
- It is suitable for those who have a lot of space
- No special diet is given to the birds

Demerits:

- No proper record keeping.

- Management practice is poor.
- Mixing of wandering of animals without proper identification can also cause conflict among owners.
- Poor productivity in terms of egg laying and growth.
- Birds are prone to diseases and predators
- Insecurity of animals, i.e., the birds are exposed to pilfering/stealing.

2.2.4.3 Semi-intensive system

It is mid-way between the intensive and extensive system. The birds are housed in a fixed building but can move about within a fenced area. Their buildings could be made of wood or metal. It however saves cost and it can be practiced in a backyard and in urban areas. A good example of the semi-intensive system is the fold unit system.

Merits of the Fold unit/semi-intensive system

- There is protection against adverse weather conditions
- The birds are safe from the attack of wild animals
- The birds are kept in small groups and culling is made easier.
- The outbreak of any infectious disease is easier to isolate and handle.
- The system is useful for all ages and all kinds of birds.

Demerits of the Fold unit/semi-intensive system

- There is high cost per house when compared with the range system.
- Vices such as feather picking, egg eating, and cannibalism may occur.

2.2.4.4 Intensive system

Under this system, the birds are confined within the building and are not allowed to move out. There is high stocking density which implies a closer contact among the birds. Feeds, water and all medications are provided for the birds.

2.2.4.5 Merits of Intensive system

- It allows for good record keeping.
- The birds are protected against predators.
- It makes management simple
- It requires less space compared to the free-range option.

2.2.4.6 Demerits

The initial cost of production is high when compared to free

2.2.4.7 Types of Intensive Housing systems

The two examples of the intensive system of poultry management are:

- Deep litter system
- Battery cage system



Picture 9: A Poultry deep litter system



Picture 10: Battery Cages system

2.3.1 TEMPERATURE

Young chicks cannot yet regulate their body temperature. Thus, artificial heating is provided during the brooding period.

Artificial heat sources are:

- Electric brooder (infra-red heat bulbs)
- Gas brooder (gas heaters)
- Kerosene brooders (kerosene lamp/ kerosene heater)
- Other fuel sources (e.g.,charcoal)

2.3.4 Sufficient spacing

Provide the chicks with enough spacing to avoid overcrowding. Overcrowding leads to poorly developed chicks, harmful habits such as feather picking, pecking, cannibalism and high mortality. There should be no more than three birds per square meter.

2.3.5 Rearing space requirement for birds

FLOOR SPACE: Minimum of 0.1 – 0.2m/ birds

ROOSTS: 15.2cm (6 inches) bird

WATERING TROUGH: 4.2m (14 feet) of trough space per 100 birds (2 inches/birds)

FEEDING SPACE: 7.5cm (litter) or 15cm (battery cages)

2.3.6 Litter

Litter absorbs moisture (from dropping) and provides scrapping material for the chicks. At all times prevent litter from getting wet.

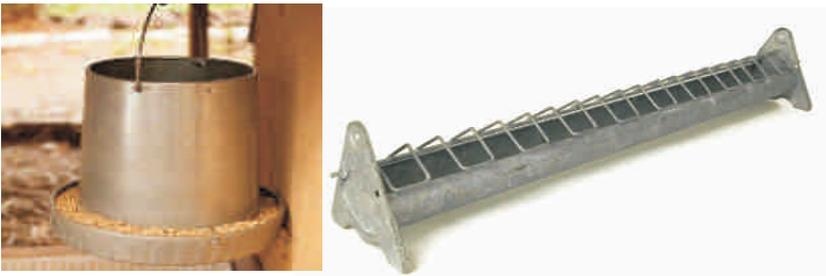


Picture 11: Chicks at brooding stage

2.3.7 EQUIPMENTS USED IN POULTRY

During the first few days, it is okay to spread the feed on paper or cardboard. After three days, small feeders should be used. The feeding space per bird should grow from about 3 cm at day-old to 6 cm at 10 weeks.

Ensure all chicks can feed at the same time during the first few weeks, normal drinkers are used but with a low brim.



Picture 12: Feeders for birds in deep litter system



Picture 13: Drinker for birds in deep litter system

2.4 EFFICIENT MANAGEMENT PRACTICES FOR POINT OF LAY BIRDS

Point of lay birds (POL) are growing birds of usually 16 weeks to 20 weeks of age that are yet to drop their first egg. All necessary medications must have been administered to the birds before this time. The farmer needs to properly house the birds, feed them adequately, give needed medications, and start to expect its first set of eggs soon.

2.5 FEED AND FEED MANAGEMENT

Feed constitutes the greatest cost in poultry production, amounting to about 70%. Feeds can be improved and produced more efficiently to lower costs. Proper feed management and handling/administration can be used to increase feed utilization and production.

Feed is a material which after ingestion by animals, is capable of being digested, absorbed and utilized. A feed is merely the carrier of nutrients.

NUTRIENTS: A nutrient is defined as any feed constituent or group of feed constituents of the same general composition or pure chemical compound that aids in supporting animal life. The constituents of a feed capable of being transformed into body elements are known as nutrients.

2.6.1 PRODUCTION OF GOOD QUALITY FEED

A good quality feed produced at the least cost is needed for profitable livestock production. The feed compounded should meet the animal requirement for body maintenance, growth, development and production. Birds generally require an adequate supply of essential nutrients from commonly used feed resources. These nutrients pass into the bloodstream and are then used for various processes according to the biological needs of the birds. The major groups of essential nutrients are energy, protein, fat and oil, vitamins, minerals and water.

TABLE 2: INVENTORY OF SOME FEEDING INGREDIENTS IN NIGERIA

Nutrients	Conventional ingredients	Alternative ingredients /unconventional ingredients
Energy	Maize	Sorghum, millets, whole wheat, Cassava chips, cassava grits, Rice waste etc

Poultry Training Manual

Protein	Fish meal, meat meal, Groundnut cake, Soybean cake	Full fat soybean, sunflower cake, cottonseed cake, coconut meal, blood meal, hydrolyzed feather meal, sesame seed meal, cocoyam product, melon, cassava leaves, edible mushroom, shrimp head, dried brewer's yeast
Filler materials	Wheat offal	Maize offal, brewers dry grains, palm kernel cake, Rice bran, Rice husk, sorghum offal, corn cobs, malt dust, cassava peels, cassava sievate, cocoa wastes, yam peels, melon husk and cocoa husk
Mineral	Bone meal, oyster shell, salt	Periwinkle shells, snail shells, dicalcium phosphate and super phosphate
Micro ingredients	Vitamins, Trace minerals, Antibiotics, Additives, Methionine, Lysine, enzymes	Moringa leaf meal, neem leaf meal etc.

2.6.2 FORMS OF FEED

Forms of feeds are

- Crumbs
- Mash
- Pellets

2.6.2.1 TYPES OF CHICKEN FEED

- * BROILER STARTER MASH (Broiler at 0-4 weeks)
- * BROILER FINISHER MASH (Broiler at 5-8 weeks)
- * CHICK MASH (Pullet & Cockerel at 0-8 weeks)
- * GROWER MASH (Pullet & Cockerel at 9-20 weeks)
- * LAYERS MASH (For laying birds)

2.6.3 RATION FORMULATION

Ration formulation is a procedure by which the farmer combines different feed ingredient. In formulating rations, the nutrient requirement of the birds must be taken into consideration.

The nutrient composition of the ingredients and the nutrient requirement of the bird are things of utmost consideration when formulating feed rations.

2.6.4 Factors to consider when formulating feed for birds

- Age of the bird
- Physiological status of the bird – either egg or meat production
- Availability of feed ingredients
- Cost of the feed ingredients
- Purpose of keeping the birds
- Breed and types of bird.

2.6.5 Characteristics of a good ration

- The ration must be acceptable by the birds
- The ration should be digestible by the bird to release nutrients
- The ration should be cost-effective for the farmer to make a profit
- The ration should have the right texture

2.6.6 Categories of ration

- Maintenance ration
- Production ration

Table 3: NUTRIENT REQUIREMENT OF BROILER

Feed Ingredient	Pre-Starter 100 grams/bird till 7 days	Starter 0 - 17 days	Grower 17 - 37 days	Finisher After 37 days
GALDUS pre-starter	25 kg for 200 Birds	-----	-----	-----
Broiler Protein premix (KBC)	-----	12.5 KG	10 KG	8 KG
CORN	-----	60 KG	65 KG	69.5 KG
SOYBEAN MEAL	-----	27.5 KG	25 KG	22.5 KG
TOTAL		100 KG	100 KG	100 KG

ANALYSIS COMPLETE FEED

M.E kcal/kilo feed	3160	2875	2900	2935
Crude protein	22.80 %	20.50 %	19.60 %	18.80 %
Crude fat	7.4 %	3.50 %	3.60 %	3.70 %
Crude fibre	2.60 %	3.50%	3.60 %	3.60 %
Lysine	1.32 %	1.14 %	1.04 %	1.00 %
Methionine	0.59 %	0.51 %	0.46 %	0.45 %
Methionine + Cystine	0.96 %	0.84 %	0.80 %	0.77 %
Calcium	0.95 %	0.90 %	0.70 %	0.65 %
Phosphorus	0.62 %	0.65 %	0.52 %	0.50 %
Sodium	0.19 %	0.14 %	0.14 %	0.14 %

Mixing directions can change depending on price and quality of available raw materials.

For the best result, start with the Koudijs Galdus 2mm pre-starter (100 gram/bird total) mix this with starter feed to get the birds used to the starter feed. Ensure the change from Starter to Grower and from Grower to Finisher will happen gradually.

LAYER FORMULAR

Table 4: Nutrient requirement of Layer

Feed ingredient	Pre-starter Phase 0-10 days	Starter Phase 10 days - 6 weeks	Grower Phase 6 weeks - 10 weeks	Developer phase 10 weeks - 16 weeks	Pre-layer Phase 16 weeks till they start laying at least up till 2-4 %	Layer 1 Phase 5% production - 300 days	Layer 2 Phase 300 days - end period
Galdus	7 - 10 days						
Protein premix for layers (KLCs)		10 kg	5 kg	5 kg	5 kg	5 kg	5 kg
Soybean meal		24 kg	21 kg	14 kg	18.5 kg	10 kg	18 kg
Corn		56 kg	57 kg	54 kg	60.5 kg	57 kg	54.5 kg
Wheat offal		10 kg	15 kg	25 kg	11 kg	10 kg	12 kg
Limestone			2 kg	1.5 kg	5 kg	10 kg	10.5 kg

2.7 POULTRY DISEASE AND MANAGEMENT

2.7.1 SPREAD OF DISEASE

A disease can spread rapidly among chickens because they are usually kept in a poultry house. They also share the same feed and water bowls, making it easier to spread disease and infections from sick to healthy birds.

In an intensive system of poultry management, we place a great deal of pressure on the birds to grow fast and lay many eggs. This situation can cause disease to spread, resulting in a lot of damage because of the stress the birds are exposed to.

2.7.2 FACTORS CAUSING DISEASE

Factors that can cause disease in poultry include but are not limited to management, environment and the birds themselves.

2.7.3 Management

- Poor quality food and water
- Poor hygiene and an adequate cleaning program
- Leaking water bowls
- Pest
- Overcrowding of the birds
- Birds of mixed ages reared together
- Not following the birds' vaccination schedule as supposed
- Non-compliance of biosecurity measures in the poultry house.

2.7.4 Environment

- Too hot or too cold conditions
- Wet litter
- Dusty bedding

- High build-up of bird droppings
- No air circulation
- Sharp wires in the cages

2.7.5 Birds

- Young birds
- Poor conditions because of under-feeding
- No vaccination

2.7.6 ACTIONS AT FIRST SIGNS OF DISEASE

- You must act quickly at the first signs of disease. The birds must be treated and management challenges that may have led to the problem must be corrected to prevent the disease from occurring again.
- Consult your animal health scientist/veterinarian to help you find a correct solution to the health problem of the birds as soon as possible.
- In cases of re-occurring death, call a veterinarian to carry out a post-mortem on one of the dead birds, collect blood or egg samples and analysis carried out to be precise on the actual cause of incessant death.

2.7.7 GENERAL TREATMENT

Treatment can be Biological or synthetic, depending on the nature or cause of the disease.

2.7.8 GENERAL PREVENTION

Disease in poultry can be prevented through compliance to biosecurity measure in the farm.

2.7.9.4 VACCINATION AND DISEASE CONTROL IN POULTRY

When an animal is completely protected from either natural or artificial challenges, it is said to have immunity. The basic principle of vaccination is centered on antigen/antibody reactions. These antibodies will remain in the animal's blood, ready to challenge or cancel any future attack of that disease entity.

2.7.9.6 TYPES OF VACCINES

- Viral vaccines, e.g., pox, lasota, kamarov, mareks, egg drop syndrome vaccine, ventrivaccine etc.
- Bacterial Vaccines, e.g., fowl typhoid vaccine, fowl cholera vaccine, etc.
- Protozoan vaccine of coccidia vaccine, e.g., immunocox, etc.

Table 7: VACCINATION PROGRAMME FOR PULLET AND COCKEREL

AGE	VACCINATION/MEDICATION	ROUTE OF APPLICATION
Day 1	Marek's vaccine	subcutaneously
DAY 1	Newcastle vaccine	Intraocular (I/O)
DAYS 2-4	Antibiotics and Vitamins	Orally (drinking water)
DAYS 5-6	Cocciostat	Orally (drinking water)
WEEK 1	1 st dose Gumboro vaccine	Orally (drinking water)
WEEK 2	2 nd dose of Gumboro vaccine	Orally (drinking water)
WEEK 3	1 st dose of Lasota vaccine	Orally (drinking water)
WEEK 4	3 rd dose of Gumboro vaccine	Orally (drinking water)
WEEK 5	Fowl pox vaccine	Wing web
WEEK 7	2 nd dose of Lasota vaccine	Orally (drinking water)
WEEK 8	Dewormer	Orally (drinking water)
WEEK 10	Antibiotics	Orally (drinking water)
WEEK 12	3 rd dose of Lasota vaccine	Orally (drinking water)
WEEK 14	E.D. S	Subcutaneously
WEEK 16	NDVK	Intramuscular

Note

All of drugs and vaccine administered are to be preceded and followed by vitamins.

TABLE 8: VACCINATION SCHEDULE FOR BROILERS

AGE	DISEASE	VACCINE/MEDICATION	MODE OF ADMINISTRATION
1	Marek's Disease	Marek's vaccine	Subcutaneously
1	Newcastle Disease	Newcastle vaccine	Intraocularly (I/O) or by spraying
8	Newcastle Disease	1 st Lasota	Orally (via drinking water)
9 - 10	Coccidiosis	Cocciostat	Orally (via drinking water)
12	Gumboro Disease	1 st Gumboro vaccine	Orally (via drinking water)
13 - 15	Coccidiosis	Cocciostat	Orally (via drinking water)
17	Newcastle Disease	2 nd Lasota	Orally (via drinking water)
22	Gumboro Disease	2 nd Gumboro vaccine	Orally (via drinking water)
28	Newcastle Disease	3 rd Lasota	Orally (via drinking water)
35	Gumboro Disease	3 rd Gumboro vaccine	Orally (via drinking water)

2.8 POULTRY PROCESSING

Processing is the mechanical or chemical procedure carried out to alter the form of an object to preserve it or add value to it.

In poultry, the act of slaughtering, defeathering, degutting, cutting and freezing poultry birds is also known as "dressing".

Other forms of processing in poultry are:

- Eggs can be processed into powder
- Feathers cleaned and dried for aesthetic value or pillow making

- Eggshells processed into scouring powder
- Poultry waste processed into organic manure etc.

2.8.1 Chicken meat processing

Chicken meat is considered healthy, especially when the skin is removed. It has a major advantage as being the choice of meat served in most eateries. It is considered a major delicacy served at parties and other formal occasions. It is well accepted because its parts are easy to identify when cooked, especially for people who are conscious of the type of meat they consume.

Select cuts like chicken breast, drumsticks, and wings can attract different market segments with good purchasing power. Chicken breast is especially popular amongst middle age and older people because of its low-fat content.

2.8.3 Egg Processing

A common occurrence in the poultry industry is a glut. This is a situation where there is an artificial shortage of demand and a very high supply of eggs. This occurs when there are challenges in accessing certain market due to unforeseen circumstances. An example is the insurgence of Bokoharam in the north.



Picture 13: Poultry Defeathering machine



Picture 15: Chicken cutting Machine



**Picture 16: Processed frozen
Whole chicken**



Picture 17: Processed Egg Powder

SECTION THREE RECORD KEEPING, MARKETING AND RISK MANAGEMENT

3.1 RECORD KEEPING

Records are evidence of what the organization does; they capture its business activities and transactions such as business correspondence, personnel files and financial statements. Record keeping is the making and maintaining of complete, accurate, and reliable documentary information.

3.2 Types of records

The types of record kept by individual farmers depend on the nature of their farming operation. Examples of records are purchases, sales, profit and loss, production records, inventory, cash book, equipment, labor, personnel and salaries, credit book.

3.3 Importance of record keeping

- Financial Decision
- Feeding and Vaccination Decisions
- Breeding Decisions
- Productivity of birds
- Investment Decisions
- Sales Projection Decisions

1. Poultry Rearing and Production Records

Pen No....Breed....Number stocked....Date stocked....

Date	Age (weeks)	Feed type KG	Mortality	Cull	Sales	Closing Stock	Eggs collected	Done by	cmts

2. Poultry Medication and Vaccination Record Sheet

Pen No:....Breed:.....Number Stocked:.....Date stocked

Date	Age (weeks)	Type of medication	Dosage	Group treated	Number of birds	Done by	Comments

3. Poultry Mortality and Culling Record

Date	Age (weeks)	Dead	culled	Total	Done by	Comments

4 Poultry Feed Store Record

Date	No. delivered	No. Issued	Balance	Remarks

5. Sales Ledger Account

Date	Product	No. of units	Unit price	Credit sales	Cash sales	Total sales	Comments

3.1 Marketing

Marketing according to Adetiyana, Adeleke and Sallakpo (2007), is the performance of all activities involved in the flow of goods and services from initial production until it is in the hands of the ultimate consumers. The application of marketing in agriculture means selling agricultural produce or transporting farm outputs to consumers.

POULTRY PRODUCT MARKETING CONCEPT

Market structure influences the nature of competition and pricing behavior within the market. Market structure tends to consider whether the number of firms producing a product is large, the entry of firm is easy or difficult and whether the purchasing of products is competitive or not.

There are basically two major products from poultry farming: Meat production and Egg production.

3.2 MARKETING PLANS/STRATEGIES

- Know the market trend.
- Target markets, e.g., individuals, households, restaurants, hotels, fast food and malls.
- Sales and marketing strategy, i.e., who buys what at what price and where?
- Competitive Advantage/Packaging.
- Pricing Strategy.

SECTION FOUR

4.1 BROILER PROGRAM (200 Stocking Capacity)

1. Stocking of Broiler DOC@ ₦20,000 Per Carton x 4 =₦80,000
2. Feeding (a) Broiler starter 10 bags @₦6,500 per bag =₦65,000
(b) Broiler finisher mash 30 bags @₦6,400 =₦192,000
3. Medication & vaccination lump sum =₦30,000
4. Fuel and electricity bill lump sum =₦25,000
5. Pen construction lump sum =₦550,000
6. Feeders and drinkers 15 pairs @ ₦800 per pair =₦12,000

GROSS TOTAL INPUT=₦954,000

RECURRENT COST =₦392,000

DEPRECIATION COST BEFORE AMMORTIZATION = ₦562,000

ANNUAL DEPRECIATION COST AFTER AMMORTIZING FOR 5 YEARS =₦112,400

ACTUAL COST OF INPUT PER CYCLE =RECURRENT COST + DEPRECIATION COST AFTER AMMORTIZATION =₦504,400

ANNUAL ACTUAL COST OF INPUT (3 CYCLES) = ₦504,400 X 3 =₦1,513,200

RETURNS ON INVESTMENT FOR BROILER PRODUCTION
(3 CYCLES)

If ONE CYCLE PRODUCES 190 BIRDS, 3 CYCLES = 190×3
CYCLES = 570 birds (5% mortality rate).

If the birds be sold per one at ₦3,000 per bird (farm gate price),
ANNUAL GROSS PROFIT (annual sales) = ₦1,710,000

ANNUAL NET PROFIT = ANNUAL GROSS PROFIT -
ANNUAL ACTUAL COST OF INPUT (3 CYCLES)

ANNUAL NET PROFIT = ₦1,710,000 - ₦1,513,200 = ₦196,800

RETURNS ON INVESTMENT FOR BROILER PRODUCTION
(4 CYCLES)

IF ONE CYCLE PRODUCES 190 BIRDS, 4 CYCLES = 190×4
CYCLES = 760 Birds (5% mortality rate)

If the birds be sold per one at ₦3,000 (farm gate price),
ANNUAL GROSS PROFIT (annual sales) = ₦2,280,000

ANNUAL ACTUAL COST OF INPUT (4 CYCLES) = ₦504,400
 $\times 4 = ₦2,017,600$

ANNUAL NET PROFIT = ANNUAL GROSS PROFIT -
ANNUAL ACTUAL COST OF INPUT

ANNUAL NET PROFIT = ₦2,280,000 - ₦2,017,600 = ₦262,400

RETURNS ON INVESTMENT FOR BROILER PRODUCTION
(5 CYCLES)

IF ONE CYCLE PRODUCES 190 BIRDS, 5 CYCLES = 190×5
CYCLES = 950 Birds (5% mortality rate)

If the birds be sold per one at ₦3,000, ANNUAL GROSS
PROFIT (annual sales) = ₦2,850,000

ANNUAL COST OF INPUT (5 CYCLES) = ₦504,400 \times 5
= ₦2,522,000

ANNUAL NET PROFIT = ANNUAL GROSS PROFIT -
ANNUAL ACTUAL COST OF INPUT

ANNUAL NET PROFIT = ₦2,850,000 - ₦2,522,000 = ₦328,000.

IN CONCLUSION, THE MORE THE CYCLES THE
ENTREPRENEUR CAN DO, THE BETTER THE
PROFITABILITY

4.2 ECONOMICS OF EGG PRODUCTION LAYER PROGRAM / WORKING CAPITAL (200 STOCK CAPACITY)

Stocking

- (1) P.O.L @ ₦2,400 (200 Birds) ₦440,000
- (2) Feeds 7 bags of feeds per week (x 12 Months) 336 bags @
₦5,500 = ₦1,848,000
- (3) Medication and vaccination ₦70,000
- (4) 2 Sub Unit locally galvanized battery cage @ ₦90,000 per
cage (Nipple fitted) ₦180,000
- (5) Fuel and Electricity bill ₦40,000
- (6) Poultry Pen Construction ₦550,000

GROSS TOTAL = ₦3,128,000

RECURRENT COST = ₦2,398,000

DEPRECIATION COST BEFORE AMMORTISATION =
₦730,000

DEPRECIATION COST AFTER AMMORTISATION (5
YEARS) = ₦146,000

ANNUAL ACTUAL COST OF INPUT = RECURRENT COST
+ DEPRECIATION COST AFTER AMMORTISATION

ANNUAL ACTUAL COST OF INPUT = ₦2,398,000 +
₦146,000 = ₦2,544,000

RETURNS ON INVESTMENT (R.O.I) FOR LAYER BIRDS (EGG PRODUCTION).

A crate of egg now sells @ ₦1,300 (Farm gate price)

@ 80 percent fertility rate 200 birds will produce 5.3 crates of
eggs daily = ₦6,890. Annual sales = 330 x ₦6,890 = ₦2,273,700

@ 10% mortality rate 190 of 200 birds must have survived
through the one-year period and sold @ ₦2,000 per bird =
₦380,000

GROSS ANNUAL OUTPUT (PROFIT) = ₦2,653,700.

ANNUAL NET PROFIT (ROI) = GROSS PROFIT - ACTUAL
COST OF INPUT

ANNUAL NET PROFIT (ROI) = ₦2,653,700 - ₦2,544,000
= ₦109,700

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