

**CHICKEN POULTRY FARM PROJECT
TRAINING MANUAL**

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MIKOLONGWE BLACK AUSTRALORPS CHICKEN PRODUCTION

Breed Name:

Black Australorps (Mikolongwe)

Historical background

- This chicken came to Malawi in early 1930s
- first bred at Mikolongwe hence the name Mikolongwe chicken.
- it is for dual purpose (for meat and eggs).
- The fully grown cock normally weighs 3.5kgs and the hen weights 2.5kgs.
- The Mikolongwe chicken lays between 240-265 eggs per year.
- It survives in adverse conditions such as high temperatures, diseases, pests, parasites etc.

IMPORTANCE OF MIKOLONGWE CHICKEN

Think aloud!!!

1. What type of chickens do you keep at home/community?

2. Discuss any three ways in which you benefit from the chickens.

- Easy to keep as they don't always need already formulated feed.
- They are disease resistant
- They produce many eggs compared to local chickens
- They produce much meat carcass than local bird.
- They can be kept at free range system hence are easy to manage.

MIKOLONGWE MANAGEMENT REARING SYSTEM.

- Free range system
- Semi intensive system
- Intensive system.

1. FREE RANGE SYSTEM

This is common in many rural areas in Malawi.

ADVANTAGES

- Easy and cheap to keep Mikolongwe chicken as they don't need formulated feed and any special care.
- Chickens find feed (insect, grass etc) for themselves
- Very cheap as materials are locally obtained.

DISADVANTAGES

- The Mikolongwe chickens are easily attacked by predators, thieves and diseases.
- The chickens are difficult to treat when attacked by diseases.
- Eggs are difficult to collect as chickens lay in the bush.
- Chickens are difficult to gain weight as they don't have formulated feeds.
- Egg size is small and low in number because chickens are not accessible to good made feeds.
- Chickens are difficult to monitor the mating system because the farmer can't know whether the local hen is mate with the Mikolongwe cock.

2. INTERSIVE SYSTEM

- Very common in urban areas and in rural areas where commercial Mikolongwe production is practised.

DISADVANTAGE

- Expensive to construct the Mikolongwe building.
- Already formulated feed is always required.

ADVANTAGES

- Easy to treat chickens from diseases.
- Free from predation, theft and diseases.
- Easy to collect eggs.
- Easy to mate chickens (Mikolongwe can mate each other or Mikolongwe cocks can mate the local hens)
- Easy to monitor egg production; i.e. to know whether the egg production goes down or up.
- Easy to cull the non-layers.
- Easy to check the broody chickens.

INTERGRATION BETWEEN MIKOLONGWE AND FARM SYSTEMS.

BROODING

When chicks are hatched the farmer should separate them from the hen and brood them as already explained earlier on.

COCKS

The mating ratio of Mikolongwe is 10 hens to 1 cock. The farmer should encourage the Mikolongwe cocks to mate with the local hens to improve meat and egg production.

MANURE

The farmer should regularly collect manure to the farm for crop production.

HOUSE CONSTRUCTION

Ventilation

The two lengths sides should be open to provide good ventilation but covered with chicken wire mesh.

- Ventilation is essential to remove chicken body heat especially during the periods of high temperatures.
- The windows (open sides) should be covered with polythene sheets, cartons etc during brooding periods in order to allow minimal ventilation system (air circulation).
- Soon after brooding (1-12days) the ventilation system must be increased that is, remove the polythene papers, cartons, hessian sacks etc from the windows.
- When the farmer sees that the weather is cold, the windows should be covered whenever is necessary.
- Some farmers like to vaccinate birds by spraying, therefore the windows must be covered so that vaccine should not evaporate out, but settle at the birds.

STORAGE

- The storeroom should be attached to one of the ends of the house.
- The storeroom is necessary for storing all the items e.g. feeds drinkers, feeders, charts, eggs etc for managing the chickens.
- Some farmers prefer the doors leading to the storeroom and the stocking areas to be in the middle of the widths, others on the sides of the lengths.
- The door leading to the stocking area should open towards the farmer that is towards the store room to avoid the pilling of manure and disturbing chickens when opening or sometimes hurting the chickens.

FLOOR

- The floor should be well drained.
- If the area is water lodged, the polythene sheet should be evenly spread on the floor and covered with mud where the house is to be constructed.
- The inside level of the floor must be higher than the outside ground level.
- If funds are available, the concrete floor for both the stock and storage areas is necessary.

ROOF

- The roof should be of corrugated iron sheets.
- The roof should be of grass thatched but supported with polythene sheets

WALLS

- The walls should be painted white inside to reduce the high temperatures in the house particularly in summer.
- Raged walls become hiding place for parasite e.g. mites, lice and mice etc.

FOOT BATH

- The footbath with readily available disinfectant is an additional way of helping to prevent diseases, with disinfectant (chemicals) killing germs that are carried on the shoe wear.
- The foot bath should be located in front of the door leading into the storeroom.
- The liquid disinfectant should be deep enough in the footbath to cover the entire sole of the foot.

CURTAINS

- These are in form of polythene sheets, cartons, hessian sacks, empty bags etc.
- Curtains are mainly used during brooding periods that is from day old to 12 days to maintain and attain the desired temperature.
- Curtains are necessary to protect chickens from harsh weather such as cold, rains and strong winds.
- Curtains should be opened during good weather to allow maximum ventilation.

WATER

- A continuous adequate supply of clean fresh water is essential at all times to avoid dehydration.
- Water and feed intake are directly related and without adequate water intake, feed consumption is depressed and growth rate reduced.

EQUIPMENT

- The required equipment in Mikolongwe house includes drinkers, feeders, supplementary feeders and drinkers, brooders and surrounds.
- Drinkers and feeders should be lifted off the floor to increase the floor space.
- The recommended stocking density of fully Mikolongwe chickens is 6.1 birds per 1m².
- The supplementary feeders and drinkers are used only gradually removed within the first week of brooding.

DRINKERS

- There are two types of drinkers permanent and supplementary.
- Both permanent and supplementary are used during brooding but the supplementary ones are gradually removed within a week of brooding, but permanent ones remain.
- Permanent drinkers are as bell plastic drinkers, large metal drinkers half cut bamboos and 110mm plastic pipes etc.

- Supplementary drinkers are as apple trays, small metal drinkers, small plastic drinkers, flat plates with small clean stones etc. These are only used during brooding periods.
- The lips of the drinkers should fold inside to avoid water spillage.
- Drinkers are important to have enough clean fresh water in Mikolongwe chicken house at all times.
- There should always be enough drinkers at all times in the poultry shed in order to promote growth.
- The farmer should always remember that chickens should move within a short distance of within 1m to find water and feed.
- The farmer should always look for water spillage around the drinkers as this encourages the spread of diseases particularly Coccidiosis.
- If spillage has happened the farmer should raise drinkers and remove wet litter and replace with dry good one.

FEEDERS

- There are two types of feeders - **permanent and supplementary.**
 - Permanent are Tubular large plastic feeders, tubular large metal feeders, half cut off 110mm plastic pipes and bamboos, made up planks
 - Supplementary are – small plastic feeders, small metal feeders made up planks, apple tray, polythene sheets, flat pan trays , flat plates etc used only during brooding , and gradually removed within a week.
 - Supplementary feeders should be enough so that chicks should easily find feed and make a good start.
 - Feeders should be gradually raised throughout the growing period so that the lips of the trough be level with the back of the chicken.
 - The feed level in the feeders should be nailing depth and be adjusted to obtain a balance between availability to the bird and the risk of wasteful spillage.
 - The farmer should always check feed spillage around the feeders for feed traces, if any the feeders are raised.
- As already stated, for the first 9- 12 days for the brooding period supplementary feeders are used and thereafter permanent tubular feeders are placed. The permanent feeders are good because:-
- They provide a constant supply of feed.
 - The amount of feed accessible to the birds is adjustable allowing the farmer to minimize feed wastage, and floor area beneath is free for birds to use.
 - They are easy to clean, disinfect and maintain
 - Each tubular feeder can service 20-30 Mikolongwe chickens.

BROODERS

- Brooders are in form of Mbaula charcoal, electric heaters etc.
- Brooders are used to provide adequate heat to the baby chicks during brooding period
- As a guide line one brooder is enough for 1000 chicks at summer and 850 in winter.
- The temperatures must range from 32- 33° around the brooder and 29°c where the light spectrum ends.
- A good guide to the brooder temperature is the behaviour of the chicks.
- If the chicks huddle together near the brooder and sound distressed, it is too cold, the farmer should increase heat on the brooder.
- If the chicks congregate (gather) away from the brooders it is too warm, the farmer should reduce the heat on the brooder.
- The farmer should always remember that the ambient house temperatures should be gradually reduced by 2°c each day per week until 18-21°c is reached and maintained by around 35 days old.

LITTER

- Litter should be in form of rice husks, wood shavings etc.
- Sawdust should be avoided because of the high tannin content and susceptibility to splinter which can cause perforations of the crop and gizzard if eaten.
- The farmer should always use fresh litter and should avoid using musty or mouldy litter to prevent diseases.
- Regular turning and replacement of litter is also essential to prevent the breeding area for parasites and disease causing organisms such as coccidia for Coccidiosis.

LIGHTING

- Mikolongo chickens are grown on a programme of continuous light from day old through 6- 8 wks old, but an hour period of darkness should be provided each day.
- An hour period of darkness each day is essential to avoid birds from huddling together (panic) resulting in crowding and suffocation at a time when there is no light.
- Mikolongo chickens are reared in dull light between 6- 20 weeks old as they are feeding on growers mash, this is to make sure that there is good accumulation of calcium in bones and the reproductive system is fully developed
- When the chickens reach point of lay (20 wks old) the light intensity is gradually increased from naturally 12hrs to a maximum of 15 hours if possible by use of light. That is switch on light at 6pm and switch off at 9 pm giving 3 hrs additional light. Therefore 12hrs + 3hrs =15hrs required a day.

SUN

- The farmer should always remember that chickens don't have sweat glands; therefore the chickens should not be exposed to direct sun.
- Mikolongwe chickens should be protected from direct sunshine as they are unable to cool their body properly even if the ventilation is good.

Stocking Rate

- The stocking rate or density is the number of fully grown chickens in a given area in the stocking room.
- The stocking rate for the Mikolongwe chicken is 6.1 birds per square meter or 1 bird per square foot.
- Correct stocking rate is essential as it promotes good growth rate and good health of the chickens.

Rearing

- Rearing is putting chickens on growers mash (pullet grower) from 6 – 8 weeks old to point of lay which is 18 – 20 weeks old.
- During rearing period only permanent feeders and drinkers are available in the stocking area and all heaters and surrounds are removed.
- trim the upper beak of the birds when they are 8 – 10 weeks old and repeat at 17 – 18 weeks old.
- give the birds vitamins in drinking water during time of beak trimming.
- should separate the hens from the cocks at 8 – 10 weeks old to promote good growth rate and reduce perking and cannibalism.
- if possible should screen the parent stock at a point of lay (18 – 20 weeks old) before they come into lay.
- The farmer should know that a chick eats 6.5kgs – 7kgs from 6 – 8 weeks old to 18 – 20 weeks old.

Laying period

- During laying period the chickens are given layers mash from 18 – 20 weeks old to depletion (98 – 112 weeks old).
- The farmer should increase the light intensity by removing curtains in the stocking area.
- The nesting boxes should be fitted in the laying house at a dark place as chickens like dark places to lay.
- always remember that the Mikolongwe chicken only comes in lay when they reach a body weight of 1.65kgs.
- The farmer should remember that the mating ratio of Mikolongwe chickens is 10 hens to 1 cock.
- The farmer should know that the chicken eats 44 - 53kgs [112 – 120 gm] feed from 18 – 20 weeks old to depletion (98 – 112 weeks old)

Mating and Hatching

- The mating ratio for Mikolongwe chickens is 10hens to 1 cock.
- The farmer must know that it is difficult to find the hatchery in the rural communities where there is no electricity.
- These fertilized eggs can be used as food and source of income for the farmer.
- Some poultry farmers associations have mini hatcheries for about 200 – 500 eggs capacity.
- Since the Mikolongwe chickens are hybrid birds which don't sit on the fertilized eggs to hatch, the farmer should use the local hens to hatch the eggs into pure Mikolongwe Black Australorps if they have crossed themselves.
- Mikolongwe cocks could mate with the local hen chickens in order to obtain the half hybrid offspring chickens which will be high in laying eggs and good quality meat.
- The Mikolongwe Black Australorp normally lays 240 – 265 eggs per laying period therefore when mate with the local hen chickens, the offspring (young ones will lay better number of eggs about 180 – 220 eggs per laying period.

- Management of the Mikolongwe chicks hatched by the Local hen chicken

- Since local chickens are generally kept free range, the farmer should wean the chicks and brood them as explained earlier on.
- It is good for the farmer to keep many local hens with the provision of the pure breed of Mikolongwe Black Australorp cocks.
- Many local hens are important during hatching period.
- It is essential for the farmer to practice semi intensive and intensive systems to avoid birds from predators, thieves, parasites and diseases.
- The chicks should be given adequate vitamins and vaccines as per program prepared.

Chick placement

- Chick placement is the receiving of day old chicks in the house for brooding.
- The heaters (Mbaula or Electrical heaters) should be placed in the brooder 24 hours prior to receiving the chicks.
- When the farmer has received the chicks he/she should not delay them to put in the brooder for fear of dehydration which could result in higher mortality rate and permanent poor growth rate.
- When chicks are received the farmer should gently count them near feed, water, heater and entire brooding area.
- Surrounds are essential during brooding because they confine the birds to the heater, water, feed sources with the help of the light.

- The farmer should leave the chicks to settle for 1-2 hours in the brooder area and check if they have find feed, water and are evenly distributed

General Care of Mikolongwe Black Australorps during Brooding, Rearing and laying periods.

- always remember that the success in keeping Mikolongwe chickens lies in a systematic and efficient management programme start well before the baby chicks arrive at the poultry house.
- have one age group of Mikolongwe chickens at one house to ensure that the management, sanitation, vaccination and feed programmes become easy and effective at all times.
- know that litter is even at a depth of 5-6 cm in the house because uneven spread of litter creates uneven floor temperatures causing groups of chicks/ chickens huddle (crowd) in pockets of shavings or under equipment, depriving themselves of feed and water at a critical time when growth is at its most rapid.
- Heaters should be placed in the brooder area 24-36 hours prior to receiving chicks. Because this helps to ensure that shavings are warmed and the air temperature in the house is correct when the chicks arrive.
- The farmer should ensure that there is at least adequate enough fresh air entering the house especially when using direct fired heating (Mbaula) at brooding while at the same time taking care to avoid draught,(cold air).
- As a guide line, the farmer should provide 1-2 drinkers and 1-2 feeders for 10 full grown up Mikolongwe Black Australorps chickens.
- remember that parasites and diseases are introduced into the flock by visitors, poultry attendants or through litter and dust etc.
- remove all the sick birds from the rest of the chickens as the microorganisms multiply faster in weak birds.
- should restrict the movements of visitors coming to the poultry unit.
- The uniforms (boots and overalls) used in the poultry unit must not be used outside the poultry unit.
- The sick and dead birds should not be consumed at home but burnt and buried away.
- The farmer should always knock on the stocking area door particularly when they are in lay to avoid chickens from explosion and cause egg peritonitis.
- always use the same colour of clothes (uniforms) to avoid birds from being disturbed [explosion] particularly when they are in lay.

Poor conditions will result into:-

- (a) Poor weight gain.
- (b) High mortality rate.
- (c) Poor egg production.
- (d) Disease out breaks.
- (e) Decreased income.
- (f) Poor feed conversion.

CONDITIONS THAT ENCOURAGE DISEASE OUTBREAK

1. Poor feed quality and quantity.

2. Wet litter which could encourage the production of ammonia gas and aspergillosis. Ammonia gas is bad to birds and human when it particularly reaches 50 parts per million [50ppm] in the poultry house.
3. When there is high concentration of ammonia gas of 50ppm chickens normally have their heads up and shaky and the farmer feels it in eyes and nostrils.
4. Human develop sneezing and coughing.
5. The chickens develop coughing, sneezing, diarrhoea and poor egg production and body weight.
6. Dusty litter encourages sneezing and chronic respiratory diseases (coughing and sneezing) in chickens.
7. Poor stocking density – sometimes chickens are overcrowded encourages spillages of feed and water.
8. Poor housing –the house that doesn't have the ventilation system and leaks.
9. Poor feeding and water spacing –the farmer sometimes provides very few drinkers and feeders to many chickens hence they do complete and spill feed and water resulting into malnutrition.
10. Regular visitors at the farm who are the carries of several diseases and parasites at the farmer eg Coccidiosis, New Castle etc.
11. Not following the feeding and vaccination programs.

VACCINATION PROGRAM

Day old – 7 days – Vitamins / Furasol)

7-10days - Gumboro

14 days - Lasota

16- 21 days – Gumboro

28 days – Lasota

5 Wks – Poxine (fowl Pox)

7- 8 WKS – Lasota

16 – 18 WKS – Lasota

Every 3 months give the chickens Lasota

Note: These are the procedures to follow when vaccinating

- a. Vaccinate only healthy chickens.
- b. Vaccination only be done early in the morning hours starting from 5:00 AM.
- c. Remove all drinkers and wash them in disinfectant.
- d. Give chickens plenty of feed before vaccination.
- e. Thirst the birds for 2-3 hours and give them vaccine for 2-3 hours.
- i. Borehole and well water can be used direct in vaccination.
- j. Stream water can be boiled and cooled before use in vaccination.

FEEDING PROGRAM

- Day old – 6-8 Wks – chick mash (pullet starter)
- 6-8 Wks -18 – 20wks (Point of Lay) – Growers mash (Pullet Grower)
- 18-20Wks – depletion (98-112wks) – Layers mash.

Note: The farmer should know the following facts:-

- A Mikolongwe chick eats 45-55g / bird /day (1.5-2kgs per bird) of chick mash from day old to 6-8 wks old. A Mikolongwe chick eats 98-111gm/bird/Day (6.5-7Kg per bird) of Grower Mash from 18-20 Wks

COMMON DISEASES

1. COCCIDIOSIS

Cause: - Is caused by protozoa called coccidia which are in the family of Eimeria.

- The common one is Eimeria tenela which affects the caeca.
- Usually affects young chicks.

SPREAD (TRANSMISSION)

- Incubation period of oocysts (eggs) is 4-6 days.
- Infected droppings which contain oocysts (eggs) of coccidia spread between chickens.

SIGNS – Bloody dropping

- Birds are restless.
- Birds have pale comb and lose appetite.
- Birds develop diarrhoea, loss of weight and drop in egg production.
- Rough feathers.

PREVENTION AND CONTROL

- always keep litter and floor dry.
- avoid keeping young chicks together with old ones.
- clean, wash and disinfect the poultry shed after every batch and wait for at least 2 wks before the next batch comes in.
- provide Amprolium, Ancoban in feed or drinking water as per programme e.g.

TREATMENT

- Treat the Coccidiosis with coccidiostats e.g. Amprolium, Ancoban , triple sulpha in drinking water.
- The farmer should always follow the instructions of the drug manufacturers.

2. NEW CASTLE DISEASE (caused by Virus)

SIGNS:

- Greenish diarrhoea.
- Twisted neck in wings [torticollis].
- Watery discharge from nostrils, mouth and eyes.
- Difficult in breathing with wheezing and gurgling.
- Droopy wings.
- Nervous signs are seen eg paralysis.
- Decrease in egg production.
- Crooked toes.
- Eggs with thin shells / or no shell.

TRANSMISSION

- Spread through infected dropping, equipment, personal, air, wild birds and between farmer.

PREVENTION AND CONTROL

- Vaccination using Lasota as per program.
- Vaccinate healthy birds in water or eye drop.
- Avoid free range birds to your chicken house.
- Avoid unnecessary visitors to your poultry unit.
- Dead birds be burnt and buried.

TREATMENT

- No treatment for New Castle disease.
- Give vitamins and antibiotics to sick birds to avoid secondary bacterial infections.

3. GUMBOLO DISEASE

CAUSE- Virus

SIGNS

- Yellow diarrhoea
- Birds sit back on the cloaca as is painful.
- Bursal of fabricias in the cloacae is affected
- Birds lose appetite but drink plenty of water.
- Birds are listless and depressed.
- Birds look pale and huddle together.

SPREAD

- Spread by dropping from bird to bird
- Spread through clothing, farm equipment and visitors from farm to farm.

TREATMENT AND CONTROL

- No treatment is available.
- Vaccinate birds as per program

INTERNAL PARASITES (WORMS)

Worms – Affects birds of all ages.

SIGNS

- The farmer can see chickens passing out live worms in droppings.
- Loss of weight.
- Reduction in egg production.
- Poor growth rate.

TREATMENT AND CONTROL

- The farmer should use Dewormer e.g. piperazine in drinking water.
- Replace wet litter with good fresh clean litter.
- Regular disinfection of the poultry shed.
- Avoid regular visitors in the Poultry unit.
- Boots [footwear] used in the stock area should not be used outside.

EXTERNAL PARASITES

These are as follows:-

- Lice
- Mites
- Fowl tamps

SIGNS

- The tiny insects can be seen in the whole body of the bird.
- They can be seen on combs, wattles and head.
- Birds perk feathers.

TREATMENT AND CONTROL

- Apply Akheri Powder on the birds.
- Remove manure, wash and disinfect the whole poultry shed.

Appendix A: Weekly Activity Report (For Brooding, Growing and Pullet Stages)

Week of _____

Date of Initial Operation _____

Number of Heads _____

Initial Number of Chicks _____

Average Weight _____

	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Labor							
Hours Spent							
Inputs by amount and type where applicable							
Feed Used							
Water Used							
Medication Used							
Vaccination Used							
Pesticides Used							
General Maintenance Notes							
Coop Repair							
Culling/Mortality							
Sanitizing							
Debeaking							
Manure Removal							
Other							
Comments:							

Appendix B: Weekly Activity Report (For Layer Stage)							
Week of _____	Date of Initial Operation _____						
Number of Heads _____	Initial Number of Chicks _____						
	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Labor							
Hours Spent							
Inputs by amount and type where applicable							
Feed Used							
Water Used							
Medication Used							
Pesticides Used							
General Maintenance Notes							
Culling/Mortality							
Manure Removal							
Other							
Comments:							