BROILER

BROILER PRODUCT & BASIC MANAGEMENT MANUAL

AFGRI ANIMAL FEEDS

DRIVING INNOVATION **THROUGH SCIENCE**

"AFGRI Animal Feeds' mission is to be a world-class supplier of technologically advanced, safe animal feeds and value-added services, through skilled staff, contributing to improved customer performance.

AFGRI Animal Feeds is committed to the provision of superior manufacturing technologies, excellence and on-going innovation. We develop products to ensure animals are able to utilise the feed in a healthy and efficient way, improving feed efficiency, resulting in economical viable and a sustainable partnerships with our farmers.

The division is committed to provide technical expertise, advice and services to our customers in an effort to support their business needs."

AFGRI

ANIMAL FEEDS

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BROILER MANAGEMENT MANUAL

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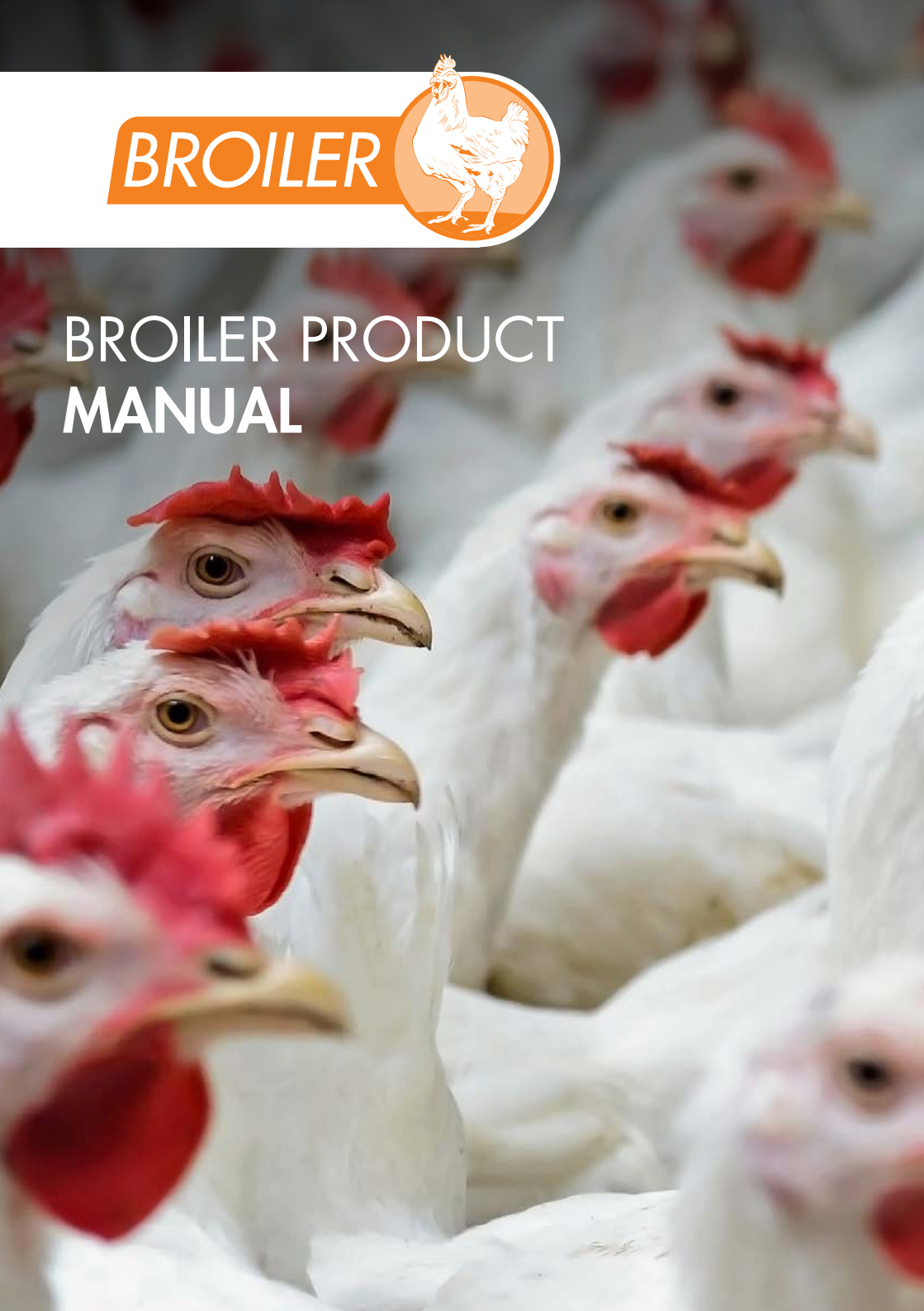
BROILER PRODUCT **MANUAL**



BROILERS

BROILER ONE STEP (P1560)

Registration number: V11209 (Act 36/1947)

ONE PHASE FEEDING RATION FOR BROILERS FROM DAY OLD UNTIL SLAUGHTER

1. Meet the nutritional requirements of broiler birds from day old until slaughter
2. Highly digestible protein to optimise body mass development
3. Feed is highly palatable to encourage feed intake and growth
4. One phase feeding system allows for simplified feed flow management

COMPOSITION:

NUTRIENT	SPECIFICATION[1]	MIN/MAX
Protein	180	Min
Lysine	9	Min
Fat	25	Min
Fibre	60	Max
Calcium	7 – 12	Min to Max
Phosphorus	5	Min

[1] Reflects minimum and maximum values for registration purposes. Actual nutrient values might be higher than minimum specifications and lower than the maximum specifications.
[2] Unit g/kg

ANIMAL GROUP: Broilers

CLASS: Broiler Grower Feed

OBJECTIVE: Broiler One Step is developed to simplify feeding, where only one ration is fed from day old until slaughter.

FEEDING INSTRUCTIONS: Feed unrestricted from day old until slaughter. Fresh feed and water must be available at all times. Expected feed intake 3675g / bird.

TEXTURE AND PACKAGING:

- Texture: Mash or Crumble
- Packaging: 10kg and 40kg bags

GENERAL:

- Contains at least 5% genetically modified organisms

BROILERS

TOPGRO STARTER (P1561)

Registration number: V16573 (Act 36/1947)

STARTER FEED FOR DAY OLD BROILER CHICKS

1. Meet the nutritional requirements of day old broiler chicks until 18 days of age
2. Feed is highly palatable to encourage feed intake and body development
3. Highly digestible protein to optimise body mass development
4. Contains standard growth promoter and coccidiostat for optimized production and profitability

COMPOSITION:

NUTRIENT	SPECIFICATION[1][2]	MIN/MAX
Protein	200	Min
Lysine	12	Min
Fat	25	Min
Fibre	50	Max
Calcium	9 – 12	Min to Max
Phosphorus	6	Min

[1] Reflects minimum and maximum values for registration purposes. Actual nutrient values might be higher than minimum specifications and lower than the maximum specifications.
[2] Unit g/kg

ANIMAL GROUP: Broilers

CLASS: Broiler Starter Feed

OBJECTIVE: Topgro Starter is developed to meet the nutritional requirements of broilers from day old until approximately 18 days.

FEEDING INSTRUCTIONS: Two-Phase Feeding Program: Feed unrestricted from one day old until approximately 20days (1000g/bird).Three-Phase Feeding Program: Feed unrestricted from one day old until approximately 18days (800g/bird). Follow on with Topgro Grower. Fresh feed and water must be available at all times.

TEXTURE AND PACKAGING:

- Texture: Mash or Crumble
- Packaging: 10kg and 40kg bags

GENERAL:

- Highly digestible raw materials are used to ensure good feed digestibility
- Included standard in the broiler feed is a growth promoter and a coccidiostat
- Contains at least 5% genetically modified organisms

BROILERS

TOPGRO GROWER (P1562)

Registration number: V16365 (Act 36/1947)

GROWER FEED FOR GROWING BROILER CHICKS FROM 18 DAYS OF AGE UNTIL 28 DAYS

1. Meet the nutritional requirements of broiler chicks during the growing period
2. Feed is highly palatable to encourage feed intake and body development
3. Highly digestible protein to optimise body mass development
4. Contains standard growth promoter and coccidiostat for optimized production and profitability

COMPOSITION:

NUTRIENT	SPECIFICATION[1]	MIN/MAX
Protein	180	Min
Lysine	10.5	Min
Fat	25	Min
Fibre	60	Max
Calcium	7 – 12	Min to Max
Phosphorus	5	Min

[1] Reflects minimum and maximum values for registration purposes. Actual nutrient values might be higher than minimum specifications and lower than the maximum specifications.
[2] Unit g/kg

ANIMAL GROUP: Broilers

CLASS: Broiler Grower Feed

OBJECTIVE: Topgro Grower is developed to meet the nutritional requirements of broilers from approximately 18 days until 28 days of age.

FEEDING INSTRUCTIONS: Two-Phase Feeding Program:Feed unrestricted from 20 days of age. Feed approximately 2675g/bird until approximately 40 days of age Three-Phase Feeding Program:Feed unrestricted from 18 days of age. Feed approximately 1575g/bird until 32 days of age. Follow on with Topgro Finisher. Fresh feed and water must be available at all time.

TEXTURE AND PACKAGING:

- Texture: Mash, Crumble or 3.2mm Pellets
- Packaging: 10kg and 40kg bags

GENERAL:

- Included standard in the broiler feed is a growth promoter and a coccidiostat
- Contains at least 5% genetically modified organisms

BROILERS

TOPGRO FINISHER (P1563)

Registration number: V16366 (Act 36/1947)

FINISHER FEED FOR BROILER BIRDS FROM 28 DAYS OF AGE UNTIL SLAUGHTER

1. Meet the nutritional requirements of broiler birds during the finisher period
2. Feed is highly palatable to encourage feed intake and body development
3. Highly digestible protein to optimise body mass development
4. Contains standard growth promoter and coccidiostat for optimized production and profitability

COMPOSITION:

NUTRIENT	SPECIFICATION[1][2]	MIN/MAX
Protein	160	Min
Lysine	9.5	Min
Fat	25	Min
Fibre	70	Max
Calcium	6 – 12	Min to Max
Phosphorus	4.5	Min

[1] Reflects minimum and maximum values for registration purposes. Actual nutrient values might be higher than minimum specifications and lower than the maximum specifications.
[2] Unit g/kg

ANIMAL GROUP: Broilers

CLASS: Broiler Finisher Feed

OBJECTIVE: Topgro Finisher is developed to meet the nutritional requirements of broilers from approximately 28 days until slaughter.

FEEDING INSTRUCTIONS: Feed unrestricted from 32 days of age. Feed approximately 1250g/bird until approximately 40days of age. Fresh feed and water must be available at all times.

TEXTURE AND PACKAGING:

- Texture: Crumble or 3.2mm Pellet
- Packaging: 10kg and 40kg bags

GENERAL:

- Included standard in the broiler feed is a growth promoter and a coccidiostat
- Contains at least 5% genetically modified organisms

BROILERS

TOPGRO MAINTENANCE (P1564)

Registration number: V16396 (Act 36/1947)

MAINTENANCE FEED FOR BROILER BIRDS THAT HAVE ACHIEVED DESIRED GROWTH AND BODY WEIGHT

1. Maintains final body weight
2. Cost savings effect on delayed slaughtering and/or sales
3. Do not contain standard growth promoter or coccidiostat

COMPOSITION:

NUTRIENT	SPECIFICATION[1][2]	MIN/MAX
Protein	120	Min
Lysine	4.5	Min
Fat	25	Min
Fibre	90	Max
Calcium	6 – 12	Min to Max
Phosphorus	4.5	Min

[1] Reflects minimum and maximum values for registration purposes. Actual nutrient values might be higher than minimum specifications and lower than the maximum specifications.
[2] Unit g/kg

ANIMAL GROUP: Broilers

CLASS: Broiler Maintenance Feed

OBJECTIVE: Topgro Maintenance is developed to maintain weight before slaughter, when the desired growth has already taken place.

FEEDING INSTRUCTIONS: Feed unrestricted for maximum 5 days. Fresh feed and water must be available at all times.

TEXTURE AND PACKAGING:

- Texture: Crumble or 3.2mm Pellet
- Packaging: 10kg and 40kg bags

GENERAL:

- Contains at least 5% genetically modified organisms

NOTES:

BROILER

BASIC BROILER **MANAGEMENT**

1) INTRODUCTION

The purpose of this manual is to give you a basic insight into the various aspects of practical poultry production. It is not a comprehensive study and should be used in conjunction with the knowledge of your AFGRI Animal Feeds Technical Advisor (TA). Your advisor will be able to assist you further in all aspects of broiler management as well as establishing a record system and determining your profitability in a given set of circumstances.

Parameters to broiler growth and quality

FEED SUPPLY

LIGHT

VENTILATION

STOCKING DENSITY

NUTRITION

TEMPERATURE

WATER SUPPLY

VACCINATIONS

2) HOUSING AND EQUIPMENT

Chickens, being warm blooded, have the ability to maintain a rather uniform temperature of their internal organs. However, the mechanism is efficient only when the ambient temperature is within certain limits, birds cannot adjust well to extremes. Therefore, it is very important that chicks be housed and cared for so as to provide an environment that will enable them to maintain their thermal balance.

Open Sided Sheds

- Open sided sheds are still the most popular type of poultry housing with both single and double pitched roofs being used.
- They should be built in well-drained and well-ventilated locations in such a manner that direct sunlight does not fall onto the length of the shed, i.e. build them running east to West as far as possible, depending on the topography and wind direction on the site. The roof should be insulated and use a surface finish that reflects solar heat.
- Pest control should be borne in mind as termites will damage wooden poles, while rats tend to destroy certain types of roof insulation, water pipes or curtaining etc.
- Extended eaves limit direct sunlight as well as rain.
- Short grass around the sheds will reduce reflected heat entering the house, also less cover for rodents.
- The side walls should be about 30 – 40 cm high with their tops sloped to prevent chickens from perching on them, and then continue with chicken mesh to the roof.
- Use adjustable roll down curtains (curtain starts opening at the top) on the side walls to manipulate conditions inside the shed. Manual changes in the height of these curtains may need to be made several times a day depending on the current environmental conditions on the day.
- For ventilation purposes, sheds should be distanced a minimum of five times roof height apart.
- Each shed should have its own header tank with a lid.

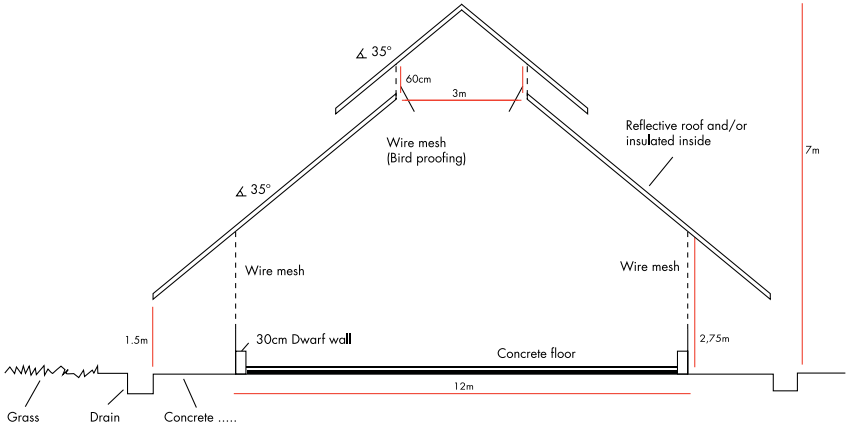


Diagram 1: Open sided house basic design

Feeding Equipment

For the first 3 – 4 days, feed should be provided in scratch trays or on brown paper so that the chicks have easy access to feed. Tube feeders can be introduced gradually from 4 days. Feed should occupy 25% or more of the floor space during this period.

The following is a guide to feed and water space per 1000 broilers:

AGE (DAYS)	CHICK FONTS	AUTOMATIC DRINKERS	SCRATCH TRAY	FEEDERS
1	10		15	
4	10	3	15	4
7	5	5		10
11		6		16
14		6		20
18		8		25
21		10		30

Feeder height should be adjusted every 2 or 3 days to approximately the height of the chickens shoulder so that the birds have to stretch to reach the feed. This improves efficiency of feed utilisation and prevents feed being pushed onto the floor.

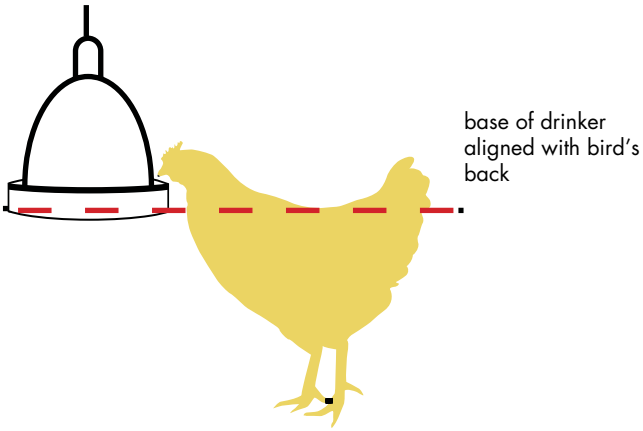


Diagram 2: Height of bell type drinkers or tube feeders

Watering Equipment

As mentioned in the above table, chicks should be given water initially in chick fonts for the first few days. Ensure the fonts are low enough that the chicks have easy access to them. These then serve as a supplement to the automatic (bell) drinkers. Should you be using a nipple drinker system, it is not absolutely necessary to use fonts although it is recommended. Ensure that the nipple lines are always accessible with the correct water pressure. The height of the nipple should be in line with the

eye of the chicks for the first 5 days. Activate the nipples just prior to chick placement to attract the chicks to the water. Nipples should be installed at a rate of 12 birds per nipple or 83 nipples per 1000 birds.

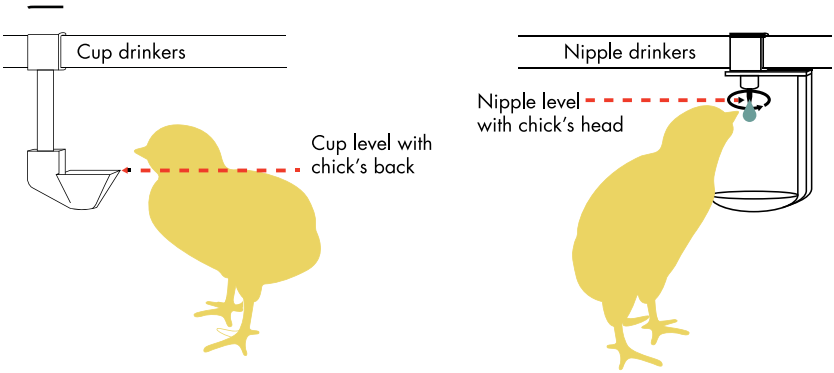


Diagram 3: Nipple height adjustment

Heating

Heat during brooding can be provided by gas brooders or infra-red lights. An important consideration when choosing a brooding system is whether or not you can guarantee the electricity supply at all times. A power failure on a cold winter's night could be costly in terms of mortalities. Gas brooders must be correctly maintained in order to produce significant heat. This includes the jet and filter. In addition reduce the capacity of the brooder by 20% in open sided houses i.e. 1000 chick brooder to cover 800 chicks.

3) SHED PREPARATION

- The house and surrounding areas and all equipment must be cleaned thoroughly and disinfected before the chicks arrive.
- A suitable litter material should be spread evenly over the floor to a depth of 10 – 15 cm. This will be discussed later under "Litter"
- Ensure that all the equipment is maintained and is in good working order.
- Light the brooders to pre-heat the shed and ensure the floor temperature under the litter is at least 28-30°C.
- Install a minimum/maximum thermometer to monitor the temperature to ensure correct brooding temperatures are attained and maintained. The air temperature, measured at chick height, should be 30°C.
- Ensure adequate clean water at room temperature is available. At the early stage, water is the single most important nutrient in the chick's development. Later feed intake is improved if adequate clean water is available as the bird requires at least 2 litres of water for every 1 kg feed eaten.
- Fill the tube feeders with AFGRI Topgro Starter Crumbles and scatter some in the scratch trays and on the brown paper. Do not place drinkers or feeders under the brooders, place according to the diagram. (See Diagram 4)
- This should all be done 24 hours prior to chick arrival.
- Comfort zones in the brooding area allow chicks to go under the brooders if they are cold and still eat and drink. When it is too hot, they can eat and drink on the outside of the rim.

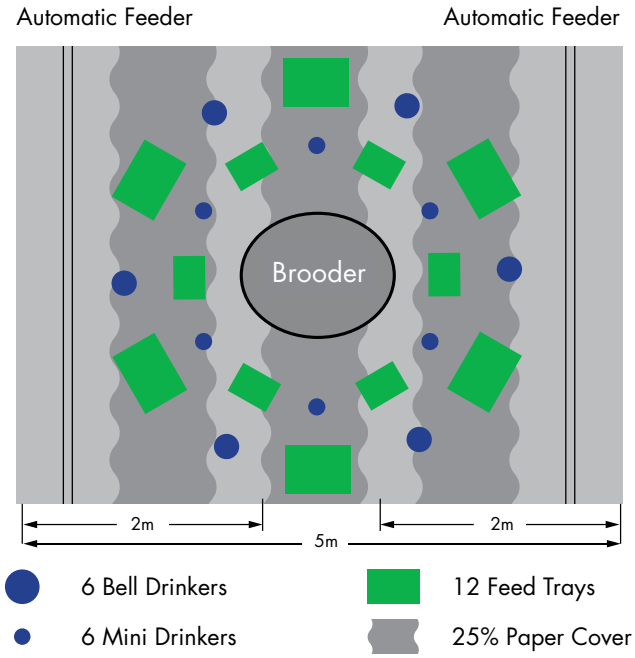


Diagram 4: Demonstrates the ideal lay-out of feeders and drinkers during brooding

Chick Placement

Off load the chicks from the truck as quickly and carefully as possible. The longer they remain in the boxes, the greater the risk of dehydration. Dehydration will cause higher than normal early mortality and reduce the final growth potential.

4) LITTER

The provision of adequate litter in terms of material, quantity and quality throughout the growing period has a profound influence on the final performance of the flock.

Litter has two functions:
1) To absorb moisture.
2) To insulate the chick from floor temperature.

Litter should be spread to a depth of at least 10 to 15 cm, the chicks will compact it to half this height within 1 to 2 days. The ideal material is untreated pine shavings although sunflower husks or chopped straw can also be used. The most important aspects of the litter are that it is absorbent and dust free. Whichever material is chosen, take care to ensure that it is not contaminated with chemicals or fungi (mould). If wild birds have had access to it, there is a risk of bringing mycoplasma and salmonella onto the site with the litter. Once the litter is on site, it should be stored under cover.

It is not advisable to reuse old litter as the risk of disease is very high, always clean out houses of all litter and use new material for each flock.

The first choice of material is white wood shavings with a moisture content of 14 to 18% at a rate of 550kg per 100m^2 on concrete floors. Regardless of the material used, good management is essential to successful rearing, and from day 1 the object must be to create and maintain litter that is free from wet patches. If the litter becomes caked or gets too wet then hock burns, breast necrosis and breast blister problems will occur. Also the amount of ammonia in the house will increase and this is detrimental to the health of the flock. Where wet patches do occur, remove the wet litter completely and replace with fresh shavings. Turn the litter as often as possible, at least weekly, with a garden fork or some such implement to prevent caking and to encourage aeration and drying.

The most common causes of wet and caked litter are:

1. Inadequate circulation of fresh air – poor ventilation
2. Cold spots – commonly associated with (1)
3. Irregular light intensity throughout the house
4. Inadequate feed and/or water distribution
5. Diseases which lead to diarrhoea
6. High stocking density.
7. High water pressure in drinker lines.

5) REARING MANAGEMENT

Brooding

It is important that during this period, observations of bird behaviour, health status and growth rate are the overriding considerations when determining temperature regulations. A general rule of thumb is to place chicks at 40 – 50 per m^2 and increase space from 4 – 5 days.

Spot Brooding

When individual radiant brooders are used, the temperature underneath the brooders should be:

- Day 1, be 30°C at litter level with an ambient house temperature of 28-30°C
- Brooder temperature should be reduced by about 0.5° per day to achieve a final house temperature of 23°C by three weeks.
- This is only a guideline as, with open-sided sheds, it is very difficult to adjust the temperature when influenced by fluctuating environmental temperatures.

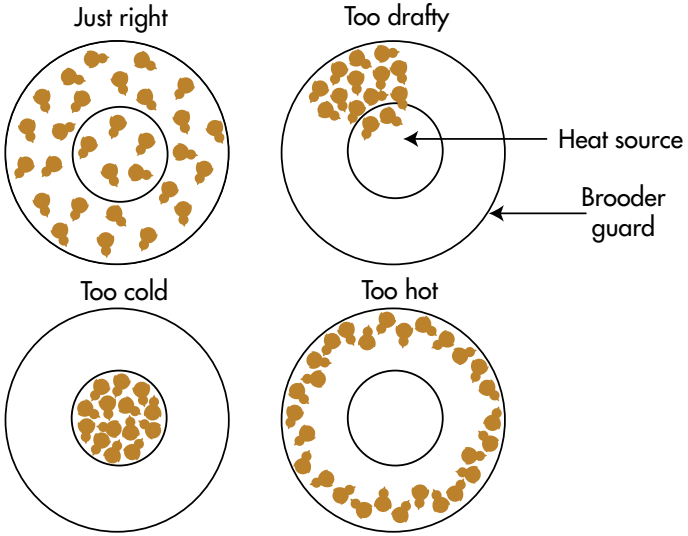


Diagram 5: Shows distribution of chicks
(Dots represent chick distribution beneath a radiant hover-type brooder)

Brooding Area Preparation

Initially feed should be provided in crumble form on feeder bases or brown paper to give a feeding area occupying of 25% of the brooding area. Drinkers should be placed alternately with feeding trays (see diagram 5) throughout the brooding area to give the equivalent of 10 drinkers per 1000 birds. The only illumination at this stage should be provided by a single 100 watt bulb per 1500 chick capacity.

Uniform chick distribution is most easily established if brooding takes place in the centre of the house. The principle applies equally to spot brooding and hot air brooding systems where a moveable curtain contains the chicks in one third of the house for the first week. The two rows of permanent feeders that form the brooding area boundary should be filled and lowered to litter level.

Never stack full chick boxes within the broiler house. Chicks must be placed without delay beneath the brooders following delivery. Empty chick boxes should be removed from the building at the same time as the housing takes place. Care must be taken in allocating even numbers of chicks to each brooding area.

Leave the chicks unattended for 1 to 2 hours after housing and then make a careful check for the following:

1. Chick behaviour as an indication of satisfactory brooding temperature (see diagram 5)
2. Chick noise
3. Stragglers outside the brooding area
4. Litter distribution and re-adjust feeders and drinkers
5. Drinkers for blockage and flooding
6. From 2 to 3 days re-position and adjust existing feeders and introduce additional feeders and drinkers as the brooding area is increased. From 5 to 6 days, to avoid wastage, reduce the depth of feed and water gradually by 1.5 cm to 14 days.

Stocking Density

There are a number of factors that need to be considered when deciding upon the correct stocking density (SD);

- Climate – hot, humid conditions, e.g. along the coast require a lower SD, 10 – 12 birds/m^2 whereas a more moderate climate in the Midlands would allow 15 – 18b/m2.
- Size of bird required for market – the higher the SD, the greater the competition for feed and water therefore the smaller the bird
- Flock health – high SD's can lead to stressful conditions which make the birds more susceptible to disease. High SD's lead to back scratching.

6) FEED AND FEEDING

Feed is the single most expensive input cost after the expense of the buildings, so every effort should be made to ensure its correct usage. In bags, it should be stored in a cool, dry room that can be sealed completely to prevent access by rodents, insects and wild birds. The bags should be stacked on pallets away from the walls so that the feed doesn't draw in moisture from the walls or floor. Rotate feed stock to prevent any build-up of old feed. Bulk feed should be stored in a commercially available bulk bin/tank with a lid that seals out the rain.Bins should be emptied and cleaned out frequently to prevent the build-up of old feed.

Care should be taken when feeding to prevent unnecessary wastage through spillage or over filling the feeders.

Feeding

There are several feeding regimes that may be employed, these depend on the following:

- live weight at slaughter
- age at slaughter
- yield and carcass quality
- skin colour
- separate sex feeding

Essentially there are 2 methods of feeding:

1. FEED To the age of the bird, irrespective of the amount of feed
2. FEED To the amount of feed i.e. amount of kilograms of each ration fed until finished.

3 Phase Feeding

FEED/BIRD	DAYS	GRAMS/BIRD/RATION
AFGRI Topgro Starter Crumbles	1 – 18	800
AFGRI Topgro Grower Pellets	18 – 32	1575
AFGRI Topgro Finisher Pellets	32 – slaughter	1250

Whichever method you use, it is important to measure accurately all the parameters involved and calculate the economic significance.

7) LIGHTING

There are several lighting programmes available to farmers, however, we recommend the following:

- Day 1: 23 hours light and 1 hour dark
- Day 2 onwards: 16 hours light and 8 hours dark

Light intensity during the first 3 to 4 days must be sufficiently high to stimulate early chick activity and familiarisation with feeders and drinkers, thus promoting rapid and even early growth. From day old to about 14 days, the intensity should be maintained at 20 – 30 lux (e.g. Two 40 watt globes 2m high in a 3 x 3m room) and reduced to 10 lux in response to bird behaviour.

8) VENTILATION

As fresh, clean air is a major requirement of broilers, it is essential that the ventilation system allows air to be circulated evenly at bird level throughout the building. As broilers grow, they produce gaseous waste products that can reduce the quality of air in the shed. The main contaminants of the air are dust, ammonia, carbon monoxide, carbon dioxide and excess water vapour. These contaminants will affect the bird by damaging the lungs, which leads to poor disease resistance, and feed intake will decrease and the growth and efficiency of the bird will be affected. High humidity will cause slower growth rates at higher temperatures i.e. >30°C as the bird is less able to cool itself.

Attention to the minimum ventilation rates, especially during brooding, is the best way to ensure good air quality. Ventilation techniques must be used carefully in conjunction with brooding practices so that one doesn't suffer at the expense of the other.

Essentially, the air in the shed needs to be replaced once per minute whether in open-sided or environment controlled houses and the use of fixed or moveable fans is the best way that this can be achieved. Care should be taken to avoid chilling the birds with excessive air speeds, and to avoid dead-spots through incorrect positioning of fans. In winter you will need to balance the need to open the curtains for fresh air (which is cold) and closing them to avoid chilling the chicks.

9) HEALTH CONTROL AND BIO-SECURITY

The prevention of disease must be a primary concern if consistently good results are to be achieved. The ideal situation is to have a single aged farm i.e. all-in, all-out, and to be tied in with an abattoir. However, this is not always practical. Always place a single age per shed to maintain the integrity of the flock.

The first requirement in health management is to establish and maintain a sound bio-security system at all stages of your operation. Emphasis should be placed on:

a)Site and house bio-security

Avoid or reduce staff transfer between sites and houses if at all possible
Prevent access of all but essential vehicles
Plan placements to keep the age spread to a minimum
Institute a pest control programme

b) Hygiene

Establish effective depopulation, downtime, cleaning and disinfection programmes for sheds and equipment
Establish a strict routine of daily hygiene for personnel and delivery vehicles
Establish a system for the immediate and complete disposal of mortalities. A properly constructed mortality pit that is sealed is a good idea.

Chemicals used for cleaning and disinfection should be rotated approximately every 6 months to prevent resistance from developing. Ensure the chemicals used are effective against IBD (Gomboro) and are applied at the correct dilution rates.

c) Vaccination

Vaccines for all the major diseases that affect broilers are available. Vaccination programmes and application techniques are specific to areas and sites and it is therefore essential to consult a poultry veterinarian before embarking on a vaccination programme. An effective programme should include vaccinations against Newcastle Disease, Infectious Bronchitis and Infectious Bursa Disease (IBD/ Gumboro). Ensure that your chicks are given primary vaccination at the hatchery so that the programme you implement boosts their immune status.

The following is an example of a vaccination programme:

Day-old	NCD oil + Hitchener B1&IB (spray/eye drop at hatchery)
Day 10	NCD Clone 30 (through water)
Day 14	IBD – in drinking water
Day 20 – 22	NCD Clone 30 (through water)

The effect of disease can only be minimised if corrective action is taken quickly and it is therefore essential that a daily routine is established that necessitates observing changes in:

- Feed consumption
- Water intake
- Bird behaviour
- Mortality

Deviations from the norm should be discussed with your TA or veterinarian.

d) Vaccination techniques Handling

- Always keep the vaccine cool (not frozen)
- Always keep vaccine stocks at the back of the fridge where temperature doesn't fluctuate too much
- Always protect your vaccines from direct sunlight
- Always open the bottles under water
- Always rotate vaccine stocks to ensure vaccines are always fresh

Failure to comply with these steps will render the vaccine useless.

Spray

The lights should be switched off, or at least dimmed, and the birds herded gently to one part of the shed. This is to get them as close together as possible to ensure good coverage with the spray. The ideal time to administer a spray vaccination is early in the morning before sunrise, when it is still cool and the birds are calm. Mix the vaccine according to the manufacturers recommendations in sterile distilled water and discard any unused vaccine afterwards. The spray from a knapsack, or hand held sprayer should be sprayed evenly about 45cm above the birds' heads.

Drinking water

Remove water 1 hour before vaccination. Mix 25g of skimmed milk powder per 10 litres of water into the header tank to neutralise any chemicals (chlorine) that may be present. Mix the required amount of vaccine into the header tank and open the tap to allow the drinkers to fill up. The vaccine should be consumed within half an hour.

10) RECORDS

Records should be kept so that they form a meaningful, current management aid. Together with target performance parameters, this can form a very effective management tool. Ask your AFGRI TA for some AFGRI Broiler Record Cards (see Appendix A)

Good records should include the following:

- Batch number
- Farm/site
- House
- Number of chicks placed
- Parent flock and age

Daily records:

- Feed consumed
- Water consumed
- Mortality
- Temperatures – min/max
- Vaccinations
- Deliveries – feed, gas, litter
- Gas used

Weekly records:

- Body weights and uniformity
- Cumulative mortality

When all the birds are sold or slaughtered, calculate the Feed Conversion Ratio (FCR) and production efficiency factor (PEF).

Formula for FCR:

$$\frac{\text{Total feed consumed}}{\text{Total Live Weight}}$$

Formula for PEF:

$$\frac{\text{Survivability x Average weight x 100}}{\text{Average Age in days x FCR}}$$

11) TA SERVICE

An individual costing and profit feasibility can be done on farm with your AFGRI TA. (See Appendix B)

GUIDELINE GROWTH AND FEED INTAKES

AGE WEEKS	LIVE WEIGHT PER BIRD		FEED CONSUMPTION (PER BIRD)		CUMULATIVE FCR
	DAILY GAIN GRAMS	CUMULATIVE GRAMS	WEEKLY GRAMS	CUMULATIVE GRAMS	
1	14	135	150	150	1.11
2	31	355	300	450	1.27
3	49	700	550	1000	1.43
4	54	1080	700	1700	1.57
5	57	1480	900	2600	1.76
6	60	1900	1100	3700	1.95
7	59	2310	1150	4850	2.10
8	59	2720	1200	6050	2.22

APPENDIX

BROILER RECORD CARD

HOUSE No:

AFGRI ANIMAL FEEDS

Date of Hatch: _____ Hatchery: _____

Day Old Vaccination: _____ Breed: _____

Weight per 100 day old (Kg): _____ No. of Chicks: _____

Flock & Age: _____ No. Dead in Boxes: _____

DAY		DATE	MORTALITY			FEED ISSUED	SALES		REMARKS/MEDICATION
			DAILY	TO DATE	%		No.	Weights	
ONE	1								
	2								
	3								
	4								
	5								
	6								
	7								
WEEK 1 TOTAL									
TWO	8								
	9								
	10								
	11								
	12								
	13								
	14								
WEEK 2 TOTAL									
THREE	15								
	16								
	17								
	18								
	19								
	20								
	21								
WEEK 3 TOTAL									
FOUR	22								
	23								
	24								
	25								
	26								
	27								
	28								
WEEK 4 TOTAL									
FIVE	29								
	30								
	31								
	32								
	33								
	34								
	35								
WEEK 5 TOTAL									
SIX	36								
	37								
	38								
	39								
	40								
	41								
	42								
WEEK 6 TOTAL									
SEVEN	43								
	44								
	45								
	46								
	47								
	48								
	49								
WEEK 7 TOTAL									

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BROILER RECORD CARD: EXPENSES / INCOME

AFGRI ANIMAL FEEDS

EXPENSES				INCOME	
DAY OLD CHICKS*		WATER**		TOTAL BIRD SALES	
TOTAL FEED COST*		MEDICATION**		MANURE	
GAS**		TELEPHONE**		OTHER	
SHAVING**		SALARIES**			
				TOTAL INCOME	
LABOUR**		TRANSPORT*			
				TOTAL EXPENSES	
VACCINATIONS**		OTHER			
				PROFIT FOR BATCH	
DISINFECTANT**		TOTAL			
ELECTRICITY**		*fixed **non-fixed		TOTAL BIRDS SOLD	

FEED CONVERSION RATIO(FCR)= TOTAL FEED CONSUMED / TOTAL WEIGHT OF BIRDS SOLD

PROFIT PER BIRD

AVE. WEIGHT OF BIRDS SOLD

PERFORMANCE EFFICIENCY FACTOR (PEF)= %SURVIVORS x AVERAGE WEIGHT(KG) x 100 / FCR x AVE AGE IN DAYS

PROFIT PER KG

PEF	RATING
180-200	POOR
200-220	FAIR
220-240	GOOD
240-280	VERY GOOD
>280	EXCELLENT

AGE IN WEEKS	LIVEWEIGHT PER BIRD		FEED CONSUMPTION PER BIRD		CUMULATIVE FCR
	Daily gain (g)	cumulative grams	weekly grams	cumulative grams	
1	14	135	150	165	1,11
2	31	355	300	537	1,27
3	49	700	550	1180	1,43
4	54	1080	700	2116	1,57
5	57	1480	900	3319	1,76
6	60	1900	1100	4739	1,95
7	59	2310	1150	6316	2,1
8	59	2720	1200	7989	2,22

NOTE:
Day old chicks weight is assumed to be 40 grams. Live weights vary considerably (up to 20% either side of above quoted figures) depending on stock density, housing, ventilation, disease status and other management factors. The above quoted figures serves as a guideline only.

TOPGRO FEEDING RECOMMENDATION		
	35Days	38Days
Starter	800g	800g
Grower	1200g	1200g
Finisher	1000g	1600g

How to calculate your feeding recommendations:

		35Days	38Days
100 birds	Starter	2 bags	2 bags
	Grower	2 bags	2 bags
	Finisher	2 bags	3 bags

		35Days	38Days
1000 birds	Starter	16 bags	16 bags
	Grower	24 bags	24 bags
	Finisher	20 bags	

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NOTES

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