

SOUTH AFRICAN POULTRY ASSOCIATION



CODE OF PRACTICE 2012

Broiler Production

FOREWORD

This is the latest version [as per the date shown below] of the Code of Practice compiled by the South African Poultry Association.

All members of SAPA, by agreeing to be members of SAPA, bind themselves to follow this Code which, as with previous versions, is established as a minimum set of standards for local poultry production.

Members are encouraged to use higher standards wherever they see fit and none of these standards trump any local laws or regulations.

This Code has been drawn up by the Poultry Welfare Working Group of SAPA's Technical Committee.

No Code such as this can be seen as a final document. As new knowledge is defined by science this Code will be amended.

Comments and advice from members will keep this document alive and relevant. You are all invited to comment as you see fit.

The role of the poultry industry in feeding the nation is likely to grow due to the nutritious and affordable nature of our products.

We are duty bound to produce food safely, responsibly, and with as little harm to the environment as possible.

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1 Background and Introduction

This Code of practice has been compiled by the South African Poultry Association as an objective guide for all poultry and poultry products produced in South Africa and it is an endeavor to lay down accepted norms for the poultry industry, incorporating various legal requirements where necessary and applicable.

Where possible the Code provides defined minimum standards for the wellbeing of poultry in commercial operations, research and educational facilities. The recommendations are to be used as a guide and do not necessarily consider all possible conditions.

The minimum standards outlined in this Code are intended to assist producers and people involved in the care and management of poultry to adopt standards of husbandry that are acceptable in the light of current knowledge and changing attitudes. It is intended to serve as a guide for people responsible for the welfare and husbandry of domestic poultry and recognizes that the basic requirement for welfare of poultry is a husbandry system appropriate for their physiological needs.

The Code considers safe and wholesome food for human consumption to be of the highest priority and therefore fully supports the implementation of applicable measures to comply with the requirements for safe food of poultry origin, as approved by the relevant Health Authorities and Regulations.

Adequate facilities and resources must be available to supply proper housing, the supply of quality feed and water, attendance to sick and injured chickens and all else to ensure the wellbeing of the animals. Financial costs should not be a reason for neglecting of chickens that are obviously in distress or for failing to secure prompt and appropriate medical treatment or other care which may be necessary.

The Code emphasizes that, whatever the form of husbandry, managers, employees and others responsible for the day to day needs of the stock have a responsibility to care for the birds under their control. The importance of good stockmanship in animal welfare cannot be over-emphasized. Persons responsible for the care of poultry should be well trained, experienced and dedicated. Staff should be encouraged to undertake appropriate training in poultry management and husbandry. Knowledge of the normal appearance and behavior of the birds under their control is essential for the stock to be treated effectively and efficiently and with consideration.

Assistance in the establishment of poultry farms and production facilities and on the management of poultry should be obtained from qualified advisers with experience in private or government employment. Veterinary advice should also be sought when birds are in ill-health.

The Code is based on practical and scientific knowledge and technology in poultry production available at the time of publication but does not replace the need for experience and commonsense in the husbandry of domestic poultry.

The Code does not substitute any regulatory requirements and should where applicable, be read and applied in conjunction with all relevant laws, by-laws, regulations and compulsory specifications **including the following:**

- Animal Improvement Act (Act no 62 of 1998)
- Animal Disease Act (Act no 35 of 1984)
- Animal Protection Act (Act no 71 of 1962)
- Meat Safety Act (Act no 40 of 2000)
- Agriculture Products Standards Act (Act 119 of 1990)
- Foodstuffs, Cosmetic and Disinfectant Act (Act 54 of 1972)
- National Health Act (Act 62 of 2003)
- Occupational and Safety Act (Act 85 of 1993)
- Fertilizer, Farm Feeds, Agriculture Remedies and Stock Remedies Act (Act 36 of 19947)
- GMO Act and Regulation (Act 36 of 1983)
- Livestock Brands Act (Act 25 of 1977)
- Sterilization Facility Act (Act 36 of 1947)
- Water Treatment Chemicals for Use in the Food Industry (SANS 1827)
- Cleaning Chemicals for Use in the Food Industry (SANS 1828)
- Disinfections and Detergent – Disinfections for use in the Food Industry (SANS 1853)
- Application of Pesticides in Food-Handling, Food-Processing and Catering Establishments (SANS 10133)
- Food Hygiene Management (SANS 1049)
- Food Safety Management Systems – Requirements for Organizations throughout the Food Chain (ISO 22000)
- Requirement for HACCP Systems (SANS 10330)

2 Broiler Production Systems

2.1 Introduction

This section covers the production of birds intended to be slaughtered for human consumption.

Poultry producers involved in keeping birds for slaughter are to be aware of the responsibility to produce birds that at all times are fit for human consumption. An effective program should be in place to prevent infectious and vertically transmittable diseases being transmitted within the poultry production chain and especially diseases and pathogens which could affect consumers of poultry meat and poultry meat products.

Staff shall be able to understand and accept responsibility to prevent unnecessary suffering of birds in their care. Operators shall be satisfied that staff responsible for birds has the skills necessary to perform any required procedure without causing suffering.

2.2 Housing of broilers in Floor Systems

The space guidelines for broiler rearing are set out in Table 7.1.

Table 2.1: Space Requirement for broilers in floor systems

Measure	Density
<u>Bird density</u>	Not to exceed 40 kg/m ²
<u>Feeder space</u>	
Pans with diameter of 30cm	70 birds per pan
Trough feeders	2.5 cm/bird
<u>Water drinker space</u>	
Troughs	2.0 cm/bird
Bell drinkers	1/100 birds
Nipple and cup drinkers	1 /10 to 20 birds

Houses shall be designed to provide chickens with a safe environment.

Chicken house flooring shall allow for effective cleaning and disinfecting, preventing significant buildup of parasites and other pathogens. Where possible the floor should be concrete that is well maintained.

Light intensity for the first 3 days shall be sufficient to encourage chicks to start eating normally. Thereafter light intensity shall provide a period of adequate illumination for normal daily feed and water intake.

Heating and ventilation systems shall maintain the recommended temperature and ventilation with reasonable accuracy in order to prevent either overheating or chilling of the chickens.

Chickens raised in floor pens shall have enough freedom of movement to be able to stand normally, turn around and stretch their wings without difficulty.

The density of 40 kg live mass per square meter is the maximum density that should be applied under conditions of good ventilation and cooling systems by mechanical means. Where ventilation is supplied by natural convection, the density should be reduced appropriately.

2.3 Housing of Broilers in Cage Systems

Where broilers are reared in cage systems the density as per Table 7.2 shall apply.

Table 2.2: Space requirements for broilers reared in cage systems

Age (Weeks)	Weight (g)	Cage floor area (cm/bird)	Feed Trough (cm/bird)	Water Trough (cm/bird)	Nipple Drinkers (birds/drinker)
0 – 3	850	250	2.5	1.25	15
4 weeks to slaughter	2000	450	6.0	1.25	10

Houses and Cages shall be designed to provide chickens with a safe environment.

Cage height shall permit standing chickens free head movement.

The cage doors shall allow for easy insertion and removal of birds.

Cage floors shall not cause any injury or deformity during the rearing of the birds.

Cage floors shall preferably be covered with temporary supportive flooring such as paper or matting for the chicks during the early brooding period.

Chicken house flooring shall allow for effective cleaning and disinfecting, preventing significant buildup of parasites and other pathogens. Where possible the floor should be concrete that is well maintained.

2.4 Free Range Broiler Production

Birds in these systems should be able to express the five basic freedoms identified by international research. These freedoms require that livestock are:-

- Free from hunger and thirst via the availability of fresh water and the appropriate feed.

- Free from abnormal discomfort via the provision of adequate shelter.
- Free from abnormal pain, injury or disease via the provision of appropriate prevention or alternatively, rapid diagnosis and treatment, of normal pathological conditions.
- Allowed to express natural behavior by providing sufficient space in suitable facilities and in the company of the animals' own kind.
- Provided with conditions and care which avoid undue suffering and thus permit freedom from fear.

Free range broilers should never be confined to cage production systems.

2.4.1 Internal Environment

The space guidelines for the poultry shed used in free range and barn systems are set out in Table 2.3.

Table 2.3: Space Requirement for Poultry Sheds used for Free Range Broiler Production

Age (Weeks)	Birds/m ²	Feed Trough (cm/bird)	Pan or Tube Feeder (Birds/feeder)	Water Trough (cm/bird)	Bell Drinker (Birds/drinker)	Water Nipples (Birds/cup or nipple)
Adult	15	5	40	1.25	100	10

The chicken house must be so constructed that it provides for the welfare needs of the birds, whilst simultaneously providing protection from inclement weather conditions and both physical and thermal discomfort.

Whilst concrete floors are desirable, these are not mandatory, provided that whatever flooring is used allows for effective cleansing.

Where open-type housing structures in excess of 6 meters wide are used, provision should be made for ridge openings to facilitate ventilation. Mechanical assistance to natural ventilation (e.g. fans) is an acceptable practice.

Where housing is predominantly enclosed, ventilation by fans with a minimum airflow of 5 cubic meters per hour per kg of bird mass is required.

Litter must be provided on entire floor area. Such litter must be of sufficient quality and quantity to allow for the proper dilution of droppings and to allow birds to dust bathe.

Stocking densities must be adequate to accommodate the birds' normal behavior. A maximum stocking density of 15 broiler birds per square meter of available floor space is permitted.

Light intensity for the first 3 days shall be sufficient to encourage chicks to start eating normally. Thereafter light intensity shall provide a period of adequate illumination for normal daily feed and water intake.

If using chain, trough or box feeders, which can be accessed from both sides, then a maximum of bird per 5 cm of feeder length, may be housed. If only one side is accessible, then 10 cm per bird must be provided. If pan or tube feeders are used, a maximum of 40 birds per feeder may be housed.

2.4.2 External Environment

These external environment conditions would apply to Free Range Broiler Production.

The stocking rate of the external range should not exceed 5 birds per square meter. It is recognized that the prevalence of livestock theft is a reality, which restricts the provision of more extensive ranges.

The range must be maintained in a manner that allows for a minimum of 50% living vegetation present at all times. It is acknowledged that certain climatic conditions and locations make it difficult for this vegetation to always be green, but that this should be the objective.

The practice of rotational grazing is a desirable management tool, which allows for the active management of damaged ground, as well as minimizing the risk of a build-up of parasites.

External shade by way of either trees or artificial structures must be provided at the rate of 4 square meters shade per 1 000 birds.

In locations where overhead predators frequently occur, provision must be made for outside cover to reduce stress reactions from such sightings.

Fencing should be adequate to provide protection from indigenous terrestrial predators. Domestic animals such as dogs and cats must not be allowed into the enclosed range area

3 Preparation of Poultry Houses

3.1.1 Cleaning, Disinfection and Sanitary Break

Establishment of a cleaning regime after completion and depopulation of a previous flock will help in avoiding future health problems.

Attention should be paid to thorough cleaning of the buildings following depopulation and should include complete removal and disposal of litter from the poultry building and surrounding area.

Following cleaning and disinfecting of the building (including all equipment contained within the building) a sanitary break will assist in avoiding any carry-over of disease to the next flock. A minimum of 7 days is recommended

3.1.2 House Preparation

Preparation of the building and equipment for the next batch of chickens should always be complete and all equipment fully maintained and operational in time to receive the next group of birds.

3.2 Management Practices in Rearing of Broilers

3.2.1 Receiving of Chicks

Before receiving chicks the building should have been prepared in accordance with above.

The equipment should be operational and the building should have been pre-warmed to the required temperature.

Optimum temperature varies for different species and breeds and the operators should be aware of the specific requirement for the species/breed under their control.

Chicks shall be removed carefully from the containers and placed in the brooding area specifically designed for the rearing of chicks. Chicks should be spread evenly over the brooding area in floor rearing.

In the case of cage rearing the appropriate number of chicks shall be placed in the brooding tiers.

Chicks shall be prevented from crowding or piling in corners in floor rearing systems.

For flocks to qualify for Free Range Broiler Production, broiler chicks should never be allowed on any cage system.

3.2.2 Temperature Control

Subject to housing insulation, breed and seasonal variations supplementary heat at gradual decreasing levels is to be applied until no longer required.

Bird behavior is the best indicator of bird comfort.

As birds become fully feathered, they can withstand and adapt to wider temperature fluctuation. Where extreme high temperatures are experienced, especially under climatic conditions of high humidity, procedures such as increased ventilation and air flow over birds, evaporative cooling equipment, reduced stocking density and supply of cool water, should be considered to deal with such extremes.

Low temperature conditions should not be overcome at the expense of minimum rates of ventilation.

Recognizing the extremes possibilities of weather conditions, house conditions within temperature range of 15 to 33°C and maximum relative humidity of 80% should be aimed at for fully feathered birds during rearing.

It is advisable to have a temperature alarm system installed to warn operators of high and low temperature conditions for corrective action to be taken.

It is advisable to record daily maximum and minimum house temperature levels.

3.2.3 Ventilation Control

A minimum rate of ventilation is required at all times to provide fresh air and to remove moisture and other metabolic gases from the building.

This minimum rate of ventilation would be dependent on the biomass in the building and the operator shall be aware thereof. In rearing of birds the minimum ventilation rate required therefore needs regular adjustment as the birds grow and increase in body weight.

With forced air ventilation systems the operator shall be fully trained in how to set up and control the ventilation system.

With open sided buildings the operator shall be fully trained in how to set the curtains or whatever natural ventilation system under varying climatic conditions

Carbon dioxide levels should be kept below 3000 ppm (3%).

The presence of ammonia is usually a reliable indicator of build-up of noxious gasses. A level of 10 to 15 ppm of ammonia can be detected by smell and once this level is reached, corrective action should be taken.

Mechanical ventilated buildings should have a back-up power supply or alternative emergency ventilation systems linked to an alarm system to warn operators of power failure.

3.2.4 Light Control

Chicks are started at higher light intensity (around 20 lux) for the first couple of days in order to learn to find the feed and drinker systems.

Thereafter the light intensity should be adequate to allow for birds to feed normally and allow for thorough inspection of the flock.

Sudden changes in intensity should be avoided as this could lead to flight reaction in some strains.

Various rearing light programs are prescribed by suppliers of breeding stock in order to control body weight gain within acceptable limits. Total light period of less than 12 hours during rearing of broiler chicks should be discouraged.

3.2.5 Feed

Newly hatched broiler chicks must be provided with food within 24 hours of hatching.

Broiler chicks must receive feed on a daily basis.

Birds in rear should receive a diet that contains adequate nutrients to meet the daily requirement for good health and vitality and in sufficient daily quantities to enable an increase in body weight gain which is in accordance with the breed specifications.

Feed should preferably be stored in closed containers and access for vermin and wild birds should not occur.

3.2.6 Drinking Water

Newly hatched broiler chicks should receive water within 24 hours of hatching but sooner during hot weather.

Birds should have access to sufficient potable water to meet their daily physiological requirements.

Chickens shall not be deprived of water except for necessary management of vaccine application and therapeutic purposes.

When house temperature exceeds 30°C interruption of water supply should not exceed 2 hours.

Water should not be so hot that birds refuse to drink.

The water should be regularly tested for chemical content as well as microbial contamination.

3.2.7 Supervision

Bird supervision should only be performed by adequately trained staff.

Chicks being brooded should be inspected at least twice every 24 hours and corrective action taken to correct any husbandry deficiencies detected.

Although the frequency and level of inspection should be in accordance with the welfare risk of the birds, a thorough inspection should occur at least once a day for every flock once the critical period of brooding has been completed.

Inspection frequency should be increased during periods of adverse conditions such as high or low temperature or ill health.

During such checks particular attention should be given to bird comfort and proper functioning of all equipment. Any malfunctioning equipment should be attended to and corrected immediately.

In floor systems any wet litter should be removed immediately and corrective action taken as to the cause of the wet litter. Litter should not be allowed to become caked and hard.

In cage systems manure will be removed in accordance with the particular system in use.

During flock inspection any sick or injured birds are to be treated promptly or killed humanely by dislocating the neck by personnel who have been trained to do so.

Dead chickens are to be removed daily and disposed of in an appropriate manner.

Flock supervision should include periodic checks for the presence of internal and external parasites. Should such parasites be detected, corrective treatment must be administered immediately.

Live chickens with clinical signs of disease or flocks with abnormal high mortality rates shall be handed over to a veterinarian or diagnostic laboratory for diagnosis and recommendations for treatment should be followed immediately. Such birds shall be housed and transported in such a way that all welfare considerations are applied.

In the event where administration of a suitable drug for strategic treatment of a disease is necessary, only drugs registered in terms of the relevant Acts will be used and the prescribed dose and withdrawal period that may be applicable will be adhered to.

The use of antimicrobials is covered more comprehensively in Appendix 3.

3.2.8 Access to External Environment in Free Range Production

In Free Range production, birds must have access to the external range for a minimum of 6 hours per day, during natural daylight hours. It is accepted that it is counter-productive for birds to be outside during periods of extreme weather. Routine external access may therefore be restricted at such times.

In Free Range production, access to external range should be provided by means of doors, gates or popholes. When popholes are used these should be at least 35 cm high and 40 cm wide and allowance must be made for at least 2 meter per 1000 birds.

3.2.9 Transfer of Birds to Processing

When broiler birds are transported to processing facilities the following principles in birds transfer shall be applied.

The driver of the vehicle transporting poultry shall be a responsible person with a valid and appropriate driver's license and trained in the transporting of livestock.

The drivers of vehicles used for transporting livestock shall be trained in the transporting of livestock and shall have telephone numbers of the owners of the animals and emergency telephone numbers at all times during a journey.

Drivers shall at all times be able to perform their duties in an expert and responsible manner.

Drivers shall not handle a vehicle in a manner that might cause the transported animals to slip, fall or suffer injury. The safety and welfare of the animals shall never be ignored or disregarded.

Chickens shall be transported in roadworthy vehicles.

Stops en-route shall only be made when absolutely necessary. When stops are made in hot weather, the vehicle must be parked in the shade where possible or for very short periods when in the sun.

In the case of a truck breakdown without a standby facility causing a subsequent rise in temperature in the load space, the load shall be off-loaded if the system permits or at least spaced to accommodate the circumstances where possible.

Vehicles used for the transportation of live poultry over long distances must be constructed to protect the poultry against adverse weather conditions during transportation.

The chickens should be loaded into clean standardized transporting crates.

All the containers should have a lid or door that can be secured to prevent the chickens from escaping.

Birds should be caught individually and handled by both legs or fully support of the body. Not more than 4 birds per hand may be carried per person at any one time.

The containers should prevent protrusion of the head, wings and legs. The number of chickens per crate should correspond to the floor space and body size of the transported chickens, with due regard to environmental conditions and duration of transport. The maximum density should not exceed 70kg body mass per square meter.

The journey should not exceed 24 hours.

Portable transporting crates with live chickens should preferably be moved in a horizontal position. Crates or birds should not be thrown or dropped.

A tie-down device preventing containers from overturning is advisable.

3.3 Health Control

3.3.1 Rearing Establishment

Broiler rearing facilities should preferably be well separated and isolated from other poultry.

Broiler rearing facilities should preferably be single purpose entities and ideally operated on an all-in, all-out replacement basis with single age groups per site.

The area immediately surrounding the poultry houses should be free of vegetation and debris and if grass is grown between buildings, it should be kept short.

Appropriate biosecurity measures for all staff and visitors entering the premises, which could include showering and changing of clothes should be adopted. Change of clothes is regarded as being the absolute minimum measure to be applied for broiler rearing farms.

Buildings should be free of vermin and not accessible to wild birds.

Vermin and wild birds should not have access to feed storage.

Domestic animals should not be allowed access to the fenced area.

3.3.2 Flock Health

Management should have ready access to a veterinarian with poultry experience.

The environment provided must be conducive to good flock health as well as providing the necessary protection from pain, injury and disease.

Operators responsible for the care and wellbeing of poultry should be aware of the signs of ill-health or distress and corrective action implemented immediately.

Where causes of ill-health or distress cannot be identified professional advice from veterinarians or other trained and qualified advisers should be sought.

All medication should be prescribed by a qualified veterinarian and such medication should be applied strictly in accordance with manufacturer's instruction unless otherwise advised by the veterinarian concerned.

The use of antimicrobials is covered more comprehensively in Appendix 3.

Birds with an incurable sickness should be removed from the flock and destroyed humanely by a competent person properly trained to do so.

3.3.3 Records

Vaccination, health and any laboratory records shall be kept for all flocks.

Such records shall be kept for inspection for the normal expected lifetime of the birds or flock.

3.3.4 Vaccination

Producers involved in the production of broilers intended to be slaughtered, should operate an effective program to prevent infectious disease, especially for diseases and pathogens which could affect humans.

Vaccinations and other treatments applied should only be undertaken by properly trained and skilled staff.

3.3.5 Disease monitoring and investigation

Regular testing of flocks as may be prescribed by a qualified veterinarian is advisable in disease control.

3.3.6 Parasite, Vermin and Insect Control

Rearing birds kept on litter floor systems are prone to internal parasite infection. Appropriate control measures as advised by a veterinarian should be in place to combat such infestation.

Effective control of coccidiosis is possible by administering drugs via the feed or by vaccination the flock at a young age. This is advisable for birds being reared on floor systems.

Birds should be constantly monitored for other internal parasites such as worms and corrective treatment measures taken as prescribed by a veterinarian.

A well planned vermin control program should be in place taking in account particular circumstances of the operation.

Fly breeding should be controlled to the very minimum.

The cleaning and disinfecting program followed at the end of the cycle should incorporate the application of an insecticide to control litter beetle infestation.

3.3.7 Biosecurity - people

Biosecurity on all poultry operations is of the utmost importance to ensure healthy flocks perform according to the required standards.

People movement is one of the main means of transmitting disease between flocks or farms. There are different aspects of biosecurity relating to people movement in poultry operations including physical biosecurity and procedural biosecurity.

Appendix 2 set out a general practice to be followed.

4 Appendix 1

LIVE BIRD SALES CODE OF CONDUCT

INTRODUCTION

The purpose of this document is to regulate and improve conditions relating to the sale and handling of live birds which may include culls during production, end of lay culls and live broiler sales.

It is intended that all SAPA members who are live bird sellers will display a poster sized copy of this code at their sale premises and that a copy of this code will be given to live bird buyers with each live bird sale. Where there is a fixed purchase arrangement between a live bird buyer and the seller it is not necessary to hand out a copy of this Code with each sale but only initially and whenever the Code is amended. The sellers will also hand out copies of the NSPCA pamphlets to their customers for onward transmission to the live bird retailers.

The live bird sellers are also required to keep a register of birds sold with the register containing the quantity of birds sold, the purchaser's details (sufficient that it is possible to contact the buyer) and the health records/status of the birds sold (defined as copies of all records held on farm).

Invoices and the normal health records for birds should suffice for this register as long as they contain the information in the attached declaration else this declaration may be used. Initially this information should be supplied quarterly and SAPA will collate this information and compile a national register of live bird buyers. SAPA will thereafter, in consultation with the NSPCA, use it to attempt to educate the live bird buyers and their customers on proper animal husbandry practices at their lairages. Once we have practical experience of the use of this Code the frequency of submission might be reduced.

As a general bio-security condition it is recommended that for all multi age sites live bird sales take place from a dedicated sale area outside of the bio secure zone and that no live bird buyers are allowed into the production facilities. In the case of single age sites the additional costs and welfare risks of multiple movements should be weighed up against the bio-security risks.

The requirement for vaccination and health declarations may seem onerous but as these birds are transported across provincial boundaries it is in the industry's own interest to better manage the transmission of diseases around South Africa.

This code is designed to apply to both the sale of live broilers, culls during production, depleted broiler and layer breeders and depleted commercial laying hens. As the weight of broiler breeders and commercial laying hens and layer breeders differs considerably there are separate specifications where applicable to allow for these weight differences.

CODE

1. All paperwork should be completed prior to catching and loading so that the vehicle may leave the premises immediately after loading is complete.
2. With each batch of birds the depleted bird buyer will receive a health declaration stating that the birds originate from a flock which conforms to the requirements as per the following DAFF approved documents:
 - Movement control protocol in case of an outbreak of Newcastle disease
 - Movement control protocol in case of an outbreak of *Salmonella* Enteritidis or *Salmonella* Gallinarum / Pullorum
 - Contingency plan in the case of an outbreak of Notifiable Avian Influenza and
 - Are free of visible signs of disease at the time of catching
3. During hot weather, birds should be loaded and transported during the cooler parts of day either in the early morning, late afternoon or at night.
4. The birds should not be deprived of feed and water before transport. During the transport phase the birds must not be without food or water for more than an absolute maximum of 24 hours measured from the time of last feeding / drinking to placement in the retail live bird seller's lairage with accessible feed and water. This condition must be applied with discretion as the welfare implications of handling birds immediately post feeding must also be considered.
5. The birds are to be transported in clean and sanitised standard size crates (770mm long, 500mm wide, 300mm high), in trolleys or in containers that qualify for use in terms of the relevant part of SAPA's Code of Practice. This applies to both the producer and the live bird buyer. Live bird sellers should not allow the loading of birds into damaged or otherwise unsuitable containers and are also responsible to ensure that stocking densities do not exceed the guideline limits.
6. The number of birds per standard sized crate should not exceed 6 broiler breeder birds and 10 layer birds. During hot weather the number should be reduced to 5 for broiler breeders and 9 for layer birds. If other containers are used a similar stocking density should be applied.
7. Birds are to be treated with respect and dignity.
8. Birds injured on the farm must be killed humanely, cervical dislocation being an acceptable practice, conditional to the farm having staff competent to carry out the procedure. Any birds injured during transport may not be sold but must be humanely disposed of.
9. Birds must be caught individually. Birds will only be handled by their legs and not any other part of the body. Not more than 4 hens may be carried per person at any one time.

10. The legs of the birds will not be tied as a measure of restraint when sold by any of the live bird sellers, live bird buyers or the retail live bird sellers.
11. The onus is on the live bird buyer to insist on healthy birds and not accept any visibly sick (or injured)birds.
12. The live bird buyer must ensure that the containers are properly secured on the vehicle before it leaves the premises and ensure the birds cannot escape from crates/containers during transport.
13. The birds must be taken to a lairage where food, water and shelter is provided or to an abattoir.
14. All birds must be kept in similar conditions to those in which they lived their productive lives i.e. floor based birds must be kept on floor systems and caged birds must be kept in cages. If held for longer than 24 hours in a facility, broiler breeders must be allowed free movement in a pen large enough for the purpose ,this being defined as 6 birds/ m² (ca. 27kg/m²). If layer hens are to be held for longer than 24 hours in a facility they should be kept in cages complying with the SAPA Code of Practice specifications (currently 450cm²/bird floor space).
15. When abnormal rates of mortality occur after receipt of birds, the local State Veterinarian, or the Poultry Reference Centre at the Faculty of Veterinary Science, Onderstepoort or a consulting veterinarian should be requested to investigate the cause of the mortalities and to report to the original seller as well as the buyer.
16. All mortalities should be disposed of in line with local health regulations.
17. No mortalities will be sold or made available for human consumption.
18. At lairages instant decapitation (or cervical dislocation if competent staff are on site) is accepted as a means of culling injured or sick birds.

5 Appendix 2

BIOSECURITY ON POULTRY OPERATIONS - PEOPLE

Biosecurity in all poultry operations is of the utmost importance to ensure healthy flocks perform according to the required standards.

People movement is one of the main means of transmitting disease between flocks or farms. There are different aspects of biosecurity relating to people movement in poultry operations including physical biosecurity and procedural biosecurity.

- Geographical situation and lay-out of poultry operations.
- Restricted admission (e.g. functional fence with gates that can be locked, access control, visitors allowed only on appointment).
- Transit facilities (e.g. at the office) where private clothes and foot wear are exchanged for farm clothes and foot wear, reduce the risk of diseases being carried onto the farm on clothing or shoes.
- Shower facilities must provide effective separation between the “private clothes area” and the “site clothes area”
- Leave watches cell phones etc. outside the site.
- Spectacles must be disinfected.
- If vehicles are not disinfected, it must be left at a safe parking area a distance away from the poultry houses.
- Managers/visitors/service personnel should preferably restrict themselves to only one farm per day. The generally accepted practice of moving between flocks in a sequence from young to old or from healthy to sick unfortunately presents some risk as well. (Young birds may be infected with infectious agents not present in older birds; clinically healthy birds may be asymptomatic carriers of disease) However, moving in this sequence is undoubtedly better than moving at random
- Golden Rule: Restrict visitors to the absolute minimum.
- Unfortunately it is sometimes inevitable that visitors (e.g. Veterinarians, technicians, electricians etc.) have to visit more than one site per day. In these instances they must preferably shower in and out at every site. They must work in a young-to-old and/or healthy-to-sick sequence. NOBODY should be allowed to visit a healthy site after they have been to a diseased site.
- Foot wear disinfection or changeover of foot wear should be in place where required.

The people movement matrix can be used as a guideline to manage people movement between poultry and poultry related operations to minimise the risk of disease transmission by people.

FROM \ TO	GP Quarantine	GP Rearing	GP Laying	GP Hatchery	Breeder Hatcheries	Breeder Rearing	Breeder Laying	Broilers / Pullet Rearing	Commercial Layers	Processing plants
GP Quarantine	2 x 24 hrs	2 x 24 hrs	2 x 24 hrs	2 x 24 hrs	2 x 24 hrs	2 x 24 hrs	2 x 24 hrs	2 x 24 hrs	2 x 24 hrs	2 x 24 hrs
GP Rearing	Next day	Next day	Next day	Same day	Next day	Next day	Next day	Next day	Next day	Same day
GP Laying	2 x 24 hrs	2 x 24 hrs	Next day	Same day	Next day	Next day	Next day	Next day	Next day	Same day
GP Hatchery	2 x 24 hrs	2 x 24 hrs	Next day	Same day	Next day	Next day	Next day	Next day	Next day	Same day
Outside company: Poultry/Hatchery/ Processing	4 x 24 hrs	4 x 24 hrs	4 x 24 hrs	4 x 24 hrs	2 x 24hrs	2 x 24 hrs	2 x 24 hrs	Next day	Next day	Same day
Feed Mills	4 x 24 hrs	3 x 24 hrs	3 x 24 hrs	3 x 24 hrs	2 x 24 hrs	2 x 24 hrs	2 x 24 hrs	Next day	Next day	Same day
Breeder Rearing (Young to Old)	4 x 24 hrs	3 x 24 hrs	3 x 24 hrs	3 x 24 hrs	Same day	Same day on same farm (max 2 sites)	Same day on same farm (max 2 sites)	Next day	Next day	Same day
Breeder laying (Young to Old)	4 x 24 hrs	3 x 24 hrs	3 x 24 hrs	3 x 24 hrs	Same day	Next day	Same day	Next day	Next day	Same day
Breeder Hatcheries	4 x 24 hrs	3 x 24 hrs	3 x 24 hrs	3 x 24 hrs	Same day	2 x 24 hrs	Next day (to known positive sites)	Same day	Same day	Same day
Broilers / Pullet Rearing	4 x 24 hrs	3 x 24 hrs	3 x 24 hrs	3 x 24 hrs	Next day (or same day with Veterinary approval)	2 x 24 hrs	2 x 24 hrs	Same day (Young to Old; Healthy to Sick)	Next day	Same day
Commercial Layers	4 x 24 hrs	3 x 24 hrs	3 x 24 hrs	3 x 24 hrs	Next day (or same day with Veterinary approval)	2 x 24 hrs	2 x 24 hrs	Next day	Same day (Young to Old; Healthy to Sick)	Same day
Processing plants	4 x 24 hrs	3 x 24 hrs	3 x 24 hrs	3 x 24 hrs	2 x 24 hrs	2 x 24 hrs	2 x 24 hrs	2 x 24 hrs	2 x 24 hrs	Same day
From any disease positive site	5 x 24 hrs	5 x 24 hrs	5 x 24 hrs	5 x 24 hrs	Next day plus 2 x 24 hrs (Own farm hatchery 1x18 hrs)	Next day plus 2 x 24 hrs	Next day plus 2 x 24 hrs	Next day plus 1 x 24 hrs	Next day plus 1 x 24 hrs	Same day

6 Appendix 3

Judicious Use of Antimicrobials in Poultry Production

INTRODUCTION

The use of drugs in poultry is fundamental to poultry health and well-being. Antimicrobials are needed for the relief of pain and suffering in animals. For poultry, the gains that have been made in food production capacity would not have been possible without the ability for reliable drugs to contain the threat of disease to birds. The World Health Organization stated, "Antimicrobials are vital medicines for the treatment of bacterial infections in both humans and animals. Antimicrobials have also proved to be important for sustainable livestock production and for the control of animal infections that could be passed on to humans."The benefit to human health in the proper use of antibiotics in food animals is related to the ability for these drugs to combat infectious bacteria that can be transferred to humans by either direct contact with the sick animal, consumption of food contaminated with pathogens from animals, or proliferation into the environment. However, the use of antimicrobials in food animals is not without risks.

Resistance to antimicrobials existed even before antimicrobials were used. The vast majority of drug-resistant organisms have however emerged as a result of genetic changes, acquired through mutation or transfer of genetic material during the life of the microorganisms, and subsequent selection processes. Resistance can also develop as a result of transfer of genetic material between bacteria. Resistance depends on different mechanisms and more than one mechanism may operate for the same antimicrobial. Microorganisms resistant to a certain antimicrobial may also be resistant to other antimicrobials that share a mechanism of action or attachment. Such relationships, known as cross-resistance, exist mainly between agents that are closely related chemically, but may also exist between unrelated chemicals. Microorganisms may be resistant to several unrelated antimicrobials. Use of one such antimicrobial will therefore also select for resistance to the other antimicrobials.

JUDICIOUS USE

Whenever poultry or human host is exposed to antimicrobials, there will be some degree of selection for a resistant bacterial population. Selection will depend upon the type of antimicrobial used, the number of individuals treated, the dosage regimen, and the duration of treatment. Therefore, it is vital to limit therapeutic antimicrobial use in animals and humans to those situations where they are needed.

The South African Poultry Association shares the concerns of the public, governmental departments, the South African Veterinary Association and public health community regarding the broad issue of antimicrobial resistance and specifically the potential risk of resistance developing in poultry with subsequent transfer to humans. Because of that concern and to maintain the long-term effectiveness of antimicrobials for poultry and human use and to increase the possibility of future antimicrobial drug approvals for the treatment of poultry, the South African Poultry Association committed to judicious use of antimicrobials by the poultry industry for the prevention,

control, and treatment of poultry diseases to ensure safe food for humans and better welfare for poultry.

When the decision is reached to use antimicrobials as growth promoters or for therapy, it should be prescribed by veterinarians who should strive to optimize therapeutic efficacy and minimize resistance to antimicrobials to protect public and poultry health.

Judicious use of antimicrobials is an integral part of good farming practice and should be applied in the poultry industry. It is an attitude to maximize therapeutic efficacy and minimize selection of resistant microorganisms. Judicious use principles are a guide for optimal use of antimicrobials. They should not be interpreted so restrictively as to replace the professional judgment of veterinary practitioners or to compromise poultry health or welfare. In all cases, poultry should receive prompt and effective treatment as deemed necessary by the prescribing or supervising veterinarian.

Judicious Use Principles for Poultry

Preventive strategies, such as appropriate husbandry and hygiene, routine health monitoring, and immunization, should be emphasized.

The foundation of the success in the poultry industry is through disease prevention management. Farms utilizing all-in-all-out production minimize the presence of multiple ages of flocks on farms to help in disease prevention. Biosecurity programs in place on poultry farms prevent the introduction of diseases. The use of shower/transit facilities and dedicated protective clothing prevents the introduction and spread of disease within and between farms. Preventative disease programs based on vaccination strategies reduce disease outbreaks in poultry. The poultry industry is the leader in novel vaccination procedures for vaccination of large numbers of poultry. Breeder, layer and broiler flocks are monitored for protective response to vaccinations. Serological monitoring of disease exposure forms the basis of strategic vaccination programs.

Other therapeutic options should be considered prior to antimicrobial therapy.

The poultry industry approaches the treatment of diseases with antimicrobial agents very seriously. Because of the cost of disease treatment with antimicrobials, therapeutic antimicrobial intervention is used only as a tool to treat active disease. Management adjustments are made when disease outbreaks occur by reacting to environmental temperature, ventilation, and litter moisture to minimize the impact of any disease condition in flocks. Supportive therapy with vitamins and electrolytes are utilized in some cases of disease outbreaks. All of the above strategies help in preventing the use of antimicrobials for treatment.

Judicious use of antimicrobials, when under the direction of a veterinarian, should meet all requirements of a valid veterinarian-client-patient relationship.

Poultry veterinarians, in integrated companies or contracted to poultry operations, closely monitor antimicrobial use in their poultry flocks. They maintain close contact with service technicians and managers related to the use of antimicrobials. Veterinarians are involved in the training of all individuals that will ultimately be following veterinary directions for antimicrobial use.

Antimicrobials are used always under the direction and knowledge of the company veterinarian or veterinary consultant.

Prescription (Medicines and Related Substances Control Act, no. 101 of 1965) use of antimicrobials.

Veterinarians in integrated poultry companies or contracted to poultry operations are responsible for the prescription and supervision of the use of these products in the poultry industry.

Extra labelor compounded antimicrobial therapy must be prescribed only in accordance with the Veterinary and Para-veterinary professions Act, no. 19 of 1982, Medicines and Related Substances Control Act, no. 101 of 1965 and Pharmacy Act, no. 35 of 1974withtheir relevant regulations.

Veterinarians in integrated poultry companies or contracted to poultry operations strive to use antimicrobials at labeled indications and dosage. With the abuse of antimicrobials, especially those registered under Act 36 of 1947, resistance developed to many of the products, which from time to time necessitates the extra label use of other registered products or for products to be compounded to treat specific disease problems in specific flocks. When prescribing extra labeler compounded antimicrobials, it is performed in compliance with the relevant acts and guidelines.

Over The Counter – (OTC) (FERTILIZERS, FARM FEEDS, AGRICULTURAL REMEDIES AND STOCKREMEDIES Act 36 of 1947) antimicrobials and feed additives must be applied according to the indications, dosage and withdrawal periods specified by the registration holder.

Feed additives and certain in feed as well as water medication are available over the counter in South Africa. The use of these products is not by law under veterinary supervision which led to the abuse of certain antimicrobials with resultant development of resistance to the active pharmaceutical compounds. It is therefore of the utmost importance that the poultry industry uses these products in a responsible way.

Antimicrobials considered important in treating refractory infections in human or veterinary medicine should be used in poultry only after careful review and reasonable justification. Consider using other antimicrobials for initial therapy.

SAPA recognize the importance of antimicrobial resistance in both human and veterinary medicine. Important antimicrobials used in both poultry and humans are held in reserve to minimize the rate of resistance development. Antimicrobials such as the quinolone-group should be held in reserve for the treatment of bacterial disease refractory to other antimicrobials.

Utilize culture and susceptibility results to aid in the selection of antimicrobials when clinically relevant.

Before antimicrobial therapy is initiated, based on mortality and morbidity, typically affected birds are euthanized and samples taken for bacterial culture and susceptibility testing (either

antibiograms or Minimum Inhibitory Concentration –MIC). This is common practice in the poultry industry today. The poultry veterinarian uses this information to make informed decisions regarding the appropriate antimicrobial therapy to be initiated. This information is kept as part of the flock and farm history as information to determine changes in antimicrobial susceptibility patterns on farms.

Therapeutic antimicrobial use should be confined to appropriate clinical indications. Inappropriate uses such as for uncomplicated viral infections should be avoided.

Viral, fungal and other non-bacterial infections are not treated in poultry with antimicrobials. Veterinarians pay special attention to disease outbreaks to determine if, and when antimicrobial therapy is warranted. Every effort is made to address disease outbreaks with other disease management strategies prior to the initiation of antimicrobial therapy. Mortality and morbidity are closely monitored; diagnostic evaluations are performed to confirm bacterial involvement prior to antimicrobial therapy.

Therapeutic exposure to antimicrobials should be minimized by treating only for as long as needed for the desired clinical response.

Due to the cost of antimicrobial use in poultry, veterinarians and service technicians closely monitor antimicrobial treatments to minimize antimicrobial therapeutic exposure in flocks. Flocks are treated for the desired clinical response avoiding prolonged use of antimicrobials. Morbidity and mortality are used to base clinical judgments as to duration of therapy.

Limit therapeutic antimicrobial treatment to ill or at risk animals, treating the fewest animals indicated.

In population medicine involving flocks, it is recognized that in a disease outbreak, all birds are not infected at the same time with the disease to which antimicrobial therapy is warranted. However, birds in the same house are "at risk" to the same primary disease that often results in secondary bacterial infections. Only birds within the same house ill or at risk are treated. Adjacent houses, not clinically affected with disease, are not treated. If therapeutic antimicrobial intervention isn't cost effective and a low number of birds are infected per house, the cost of treatment will usually dictate that no antibiotics be used at all.

Minimize environmental contamination with antimicrobials whenever possible.

Every effort is made to avoid environmental contamination with antimicrobials. The cost of antibiotics generally ensures that the antimicrobial be used specifically in the diseased flock and not introduced into the environment unnecessarily.

Accurate records of treatment and outcome should be used to evaluate therapeutic regimens.

Record keeping is an integral part of the integrated poultry industry. Production records including medication costs, evaluation and outcome are kept and placed in the history of the farm for future reference in determining any changing antimicrobial susceptibility patterns.