

SOUTH AFRICAN POULTRY ASSOCIATION



CODE OF PRACTICE 2012

Breeders and Day Old Chick 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.

Index

1	Background and Introduction	5
2	Breeding Stock and Hatching Egg Production.....	7
2.1	Introduction	7
2.2	Importation of Breeding Material.....	7
2.2.1	Grand Parent and Pure Lines	7
2.2.2	Parents	7
2.2.3	Turkeys, Ducks and Geese.....	8
2.2.4	Valid Period of Permit	8
2.2.5	Sub-Committee	8
2.2.6	Quarantine	8
2.2.7	Deadlock.....	8
2.3	Breeders Involved in the Breeding of Local Breeding Stock	8
2.4	Housing	8
2.4.1	Housing of Breeders in Floor Systems	8
2.5	Housing of Breeders in Cage systems	9
2.6	Preparation of Poultry Houses.....	10
2.6.1	Cleaning, Disinfection and Sanitary Break	10
2.6.2	House Preparation	10
2.7	Management Practices	10
2.7.1	Receiving of Birds.....	10
2.7.2	Temperature Control	11
2.7.3	Ventilation Control.....	11
2.7.4	Light Control.....	11
2.7.5	Feed.....	12
2.7.6	Drinking Water	12
2.7.7	Beak Trimming	13
2.7.8	Supervision.....	13
2.7.9	Transporting of Birds.....	14
2.7.10	Artificial Insemination	15
2.7.11	Hatching Egg Collection and Storage	15
2.7.12	Disposal of End of Lay Birds	15
2.8	Health Control.....	16
2.8.1	Breeding Establishment	16
2.8.2	Flock Health.....	16
2.8.3	Records.....	17
2.8.4	Vaccination.....	17
2.8.5	Disease Status of Flocks of Origin	17
2.8.6	Parasite, Vermin and Insect Control	18

2.8.7	Biosecurity – People.....	18
3	Chick Hatcheries.....	19
3.1	Introduction	19
3.2	Hatchery Buildings	19
3.2.1	Location of Hatcheries	19
3.2.2	Building Design.....	19
3.3	Egg Quality and Hatching Egg Storage	20
3.3.1	Egg Quality	20
3.3.2	Handling Hatching Eggs.....	20
3.3.3	Sanitation of hatching Eggs.....	20
3.4	Hatchery Hygiene and Chick Health.....	20
3.4.1	Chick Health	20
3.4.2	Building Hygiene	21
3.4.3	Staff and Visitors	21
3.5	Handling of Chicks.....	21
3.5.1	Chick Take-off.....	21
3.5.2	Chick sexing.....	22
3.5.3	Chick Holding.....	22
3.6	Morphological Alteration of Chicks	22
3.6.1	Dubbing.....	22
3.6.2	Toe Removal.....	23
3.6.3	De-Spurring	23
3.7	Euthanasia and Disposal of Non-Saleable Chicks.....	23
3.7.1	Carbon Dioxide.....	23
3.7.2	Maceration.....	23
3.8	Disposal of Un-hatched Chicks and Hatch Debris.....	24
3.9	Transportation of Chicks	24
3.10	Biosecurity in Chick Hatcheries – People	25
4	Appendix 1	26
5	Appendix 2	30
6	Appendix 3	32

1 Background and Introduction

This Code of Practice has been compiled by the Southern 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 Breeding Stock and Hatching Egg Production

2.1 Introduction

This section covers the process of importation of breeding stock as well as local breeding of poultry stock of which the progeny is intended to be used in the production chain of commercial poultry and poultry products. It also covers the process of producing hatching eggs which are intended to be used in the production of commercial day old chicks for the industry.

Poultry producers involved in the production of breeding material and hatching eggs should be aware of the responsibility to produce disease free stock. An effective program should be in place to prevent infectious and vertically transmissible diseases being transmitted within the poultry production chain.

2.2 Importation of Breeding Material

The Committee which advises the authorities on the need for the importation of genetic material under the Animal Improvement Act (Act No 62 of 1989) will abide by the following guide in considering the importation of breeding material.

2.2.1 Grand Parent and Pure Lines

Breeding stock intended for use in the Layer Industry shall be at least at the breeding level of Great-Grandparents or Grandparents.

Breeding stock intended for the use in the Broiler Industry shall be at least at the breeding level of Great-Grandparents or Grandparents.

2.2.2 Parents

Stock imported at Parent level will be allowed for trial purposes.

For stock intended to be tested in the Layer Industry a maximum of 10000 females every second year plus approximately 15% males will be allowed.

For stock intended to be tested in the Broiler Industry a maximum of 30000 females annually plus approximately 15% males will be allowed.

2.2.3 Turkeys, Ducks and Geese

Breeding stock intended for the use in the production of turkeys, ducks and geese shall be at the breeding level of Great-Grandparents, Grandparents or Parents.

2.2.4 Valid Period of Permit

Once a permit is issued it shall remain valid for a period of 12 months as from the declared expected date of importation. If this period is exceeded, the importer shall reapply.

2.2.5 Sub-Committee

The Chick Producers' Organization shall act as sub-committee as allowed for under the act and regulations and it will delegate the task to comment on imports in line with this code to the executive officer of SAPA.

2.2.6 Quarantine

Breeding stock at whatever level shall undergo a period of quarantine as stipulated in the Animal Improvement Act (Act No 62 of 1989).

2.2.7 Deadlock

In the case of a deadlock under Section 16 of the Act, an applicant can appeal to the Minister who will appoint a Board of Appeal consisting of a Chief Magistrate and two knowledgeable people to consider the implications

2.3 Breeders Involved in the Breeding of Local Breeding Stock

Breeders involved in the breeding of local breeding stock shall abide by the same Code and production practices as set out below

2.4 Housing

2.4.1 Housing of Breeders in Floor Systems

Breeder chickens raised and kept on floor systems will have enough freedom of movement to be able to stand normally, turn around and stretch their wings without difficulty.

The space guidelines for breeders that are raised and kept in floor systems are set out in Table 1 and Table 2.

Table 1: Space Requirement for Layer Breeder Type Birds

Age (Weeks)	Weight (g)	Hens Per m2	Feed Trough (cm/hen)	Water Trough (cm/hen)	Nipple Drinkers (Hens/drinker)
0 – 6	500	20	2.5	1.25	20
7 – 20	1400	12	3.5	1.25	12
Mature	1500 +	7	6.0	1.25	10

Table 2: Space Requirement for Broiler Breeder Type Birds

Age (Weeks)	Weight (g)	Hens Per m2	Feed Trough (cm/hen)	Water Trough (cm/hen)	Nipple Drinkers (Hens/drinker)
0 – 6	750	20	2.5	1.25	20
7 – 14	1600	10	8.0	1.25	12
15 to 20	2300	10	10.0	1.25	10
Mature	2500 +	6	15.0	1.25	10

Feed trough refers to feeding from both sides

Round feeders (tube feeders or pans) can replace open troughs and the guide for these types of feeders is 14 to 16 broiler breeders and 20 to 30 layer breeders for the standard 35 cm pan feeder.

Nesting space shall be provided to accommodate hens without crowding. Twenty individual nests shall be provided per 100 hens. For colony nests at least 1 M² of nest box area shall be provided per 100 hens.

Nests should have a floor substrate that encourages nesting behavior and should be kept clean and dry.

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

Bedding of suitable quality should cover the entire floor area at a depth of around 5 cm to allow for dilution of faeces.

Where slatted floor systems are used the design of the slats should be such that they adequately support the birds. The gaps between the slats should not exceed 25 mm and the materials used should be smooth and not harm the birds in any way. In such systems at least 25% of the floor area should be conventional litter and covered with bedding of suitable quality at a depth of around 5 cm.

2.5 Housing of Breeders in Cage systems

Where breeders are kept in cage systems for breeding purposes the following space allowance shall apply.

When layer type breeders with body weight less than 4.5 kg are housed in cage systems the space allowed per bird shall be not less than 450 cm² per bird when housed in 3 or more birds per cage, 600 cm² per bird when housed in 2 bird cages and 1000 cm² per bird when housed in single bird cages.

When broiler breeder type birds with body weight more than 4.5 kg are housed in colony cage systems the maximum live weight per unit of floor area shall be 46 kg/m².

2.6 Preparation of Poultry Houses

2.6.1 Cleaning, Disinfection and Sanitary Break

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

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

Following cleaning and disinfection 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 downtime of 7 days is recommended?

2.6.2 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.

2.7 Management Practices

2.7.1 Receiving of Birds

The building should have been prepared in accordance with above before placement of stock.

The equipment should be operational and in the case of placement of day old chicks, 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.

Birds shall be removed carefully from the transport containers. Older birds should be handled by supporting them under the body or grabbing by both legs. This is of special importance in the case of heavy breed birds and males.

Birds shall not be carried by more than three birds in one hand and shall be carried by holding both legs.

2.7.2 Temperature Control

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

Bird behavior is the best indicator of bird comfort.

As birds mature and 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.

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.

2.7.3 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.

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.

2.7.4 Light Control

Various light programs and light intensity for breeder birds are prescribed by suppliers of breeding stock and the operator shall be aware of the appropriate program to be applied.

Chicks are normally 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 breeder birds are reared on varying light intensity down to 2 lux depending on the housing conditions and breed.

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

During the laying period the artificial light intensity would normally be increases and levels as recommended by the supplier of the breeding stock should be aimed for.

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

Notwithstanding the above the total light period (artificial plus natural light in open sided houses) shall not exceed 20 hours in the 24 hour day.

Total light period of less than 8 hours during rearing of breeder birds should be discouraged.

2.7.5 Feed

Newly hatched breeder chicks must be provided with food within 48 hours of hatching.

In order to maintain good health and productivity during rearing, “skip-a-day” feeding of broiler breeder birds is an accepted industry practice.

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

Where controlled feeding practices are applied in order to maintain satisfactory production efficiencies and control of body weight in heavy breeds, sufficient feed space as prescribed by the breeder or at least in accordance with Table 2 should be allowed for all birds to feed simultaneously. Care should be taken that feed is distributed to all parts of the feeder system within a period of 3 minutes.

Feed should preferably be stored in closed containers and not allow access to vermin and wild birds.

2.7.6 Drinking Water

Newly hatched chicks should receive water within 48 hours of hatching but sooner during hot weather.

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

Water should be below a temperature at which birds refuse to drink.

The water should be tested for chemical content as well as microbial contamination at least every 6 months.

Where water is restricted due to poor litter conditions, birds should not be deprived of water for more than 6 hours.

2.7.7 Beak Trimming

The practice of professionally performed beak-trimming is internationally recognized as being a humane alternative to the appalling effects of cannibalism. The continuing need for beak-trimming is being constantly reassessed and it is accepted that as soon as the causes and possible alternate means of preventing cannibalism have been identified, the phasing out of this practice will be a welcome development.

When beak trimming is to be applied it should be done at as young an age as possible.

Beak trimming must be performed only by a trained operator who is completely competent in the procedures using equipment that has been properly maintained.

2.7.8 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 twice per day for every flock.

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.

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 humanely transported in a container which is appropriate to the needs of the bird.

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 withdrawal period that may be applicable will be adhered to.

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

2.7.9 Transporting of Birds

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

The drivers of vehicles used for transporting livestock shall be trained in the welfare issues that could affect the birds during transportation.

The driver shall have telephone numbers of the owner of the vehicle and birds as well as appropriate emergency telephone numbers that may be required at any time 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 birds 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 which could result in a subsequent rise in temperature in the load space, the load shall be off-loaded if the system permits or at least partially off-loaded so as to increase the space between crates or trolleys to accommodate the circumstances.

In the case of an accident the extent of the accident and particular circumstances will dictate the appropriate action to be taken.

Vehicles used for the transportation of live poultry over long distances must be constructed in such a manner so as to protect the poultry against adverse weather conditions during transportation.

The chickens should be loaded into clean standardized transporting crates (770 mm long x 500 mm wide x 300 mm high) or purpose-made wire mesh cages in trolleys.

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 3 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 55kg 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 should not be thrown or dropped.

A tie-down device preventing containers from overturning must be used.

2.7.10 Artificial Insemination

Artificial insemination is a highly skilled procedure and should be carried out only by competent, trained personnel maintaining a high standard of hygiene and taking care to avoid injury or unnecessary disturbance of birds.

2.7.11 Hatching Egg Collection and Storage

Eggs produced by breeding stock contain live embryos and should be handled accordingly.

Eggs should be collected regularly from the nests (at least 2 times per day) and placed in clean and dry handling equipment.

Nest material should be kept clean and dry and adequate in quantity.

Hatching eggs are to be handled gently

Dirty, broken, cracked leaking and any other abnormal eggs should be collected in separate equipment and should not be used for hatching purposes.

It is advisable not to use floor eggs for hatching purposes.

Hatching eggs should be sanitized as soon as possible after collection by an appropriate method prescribed by a veterinarian or knowledgeable person.

Clean sanitized hatching eggs should be stored in suitably constructed cool rooms that will ensure that the air temperature remains below the embryonic threshold temperature of 24°C.

2.7.12 Disposal of End of Lay Birds

The disposal of end of lay birds is covered more comprehensively in the Live Bird Sales Code of Conduct (Appendix 1).

Of particular note for producers involved in the production of parent stock is to conduct live bird sales away from the breeder farm, especially in the case of multi aged operations and not allow live bird buyers onto or close to the farming operations. The same considerations apply to any birds that are culled mid cycle.

2.8 Health Control

2.8.1 Breeding Establishment

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

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

The establishment should be fenced off by at least a stock fence and no grazing animals allowed within the perimeters of such fence.

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.

For establishments importing breeding material into South Africa, the quarantine site regulations and rules as prescribed in the VPN under the Animal Diseases Act shall apply.

Appropriate security measures for all staff and visitors entering the premises, which include showering and changing of clothes must be adopted.

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

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

Stores where hatching eggs are kept should be free of vermin and wild birds.

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

2.8.2 Flock Health

For establishments importing breeding material into South Africa, the certification of disease status of the flock of origin as per the import permit produced by the veterinary export unit shall apply.

Management should have ready access to a veterinarian with poultry experience. This veterinarian shall be responsible for compiling and supervision of a health plan for the operation.

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 disease or disorder which is causing suffering shall be removed from the flock and killed humanely by a competent person properly trained to do so.

2.8.3 Records

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

Such records shall be kept for inspection for a period of at least 3 years.

2.8.4 Vaccination

Producers involved in the production of parent stock should operate an effective vaccination program as advised by a veterinarian with poultry experience.

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

2.8.5 Disease Status of Flocks of Origin

Serological testing of flocks under quarantine is controlled under the rules as prescribed in the VPN under the Animal Diseases Act.

Acceptable control measures and serological tests must prevail in all flocks producing hatching eggs to assist in the prevention of vertical (transovarial) transmission of the following diseases:-

Mycoplasma gallisepticum

Mycoplasma synoviae

Salmonella Pullorum, S. Gallinarum, S. Enteritidis and S. Typhimurium.

Avian Influenza

Leucosis

Avian encephalomyelitis

Egg Drop Syndrome

Newcastle disease

For serological tests a representative sample is deemed to be at least:

16 samples from a house with up to 5000 chickens, or

32 samples from a house with over 5000 chickens

As soon as a change in the health status of the farm has become apparent, the customer of the hatching eggs must be notified.

2.8.6 Parasite, Vermin and Insect Control

Breeder 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 including suitable medication via the feed or vaccinating the flock at a young age.

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.

A fly control program should be in place.

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

2.8.7 Biosecurity – People

Biosecurity on breeder operations is of the utmost importance to ensure healthy flocks perform according to the required standards and to prevent transmission of diseases to the progeny. A biosecurity plan as compiled by a veterinarian with experience in poultry must be in place.

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.

3 Chick Hatcheries

3.1 Introduction

This section covers the process of incubation of fertile hatching eggs to produce day old chicks within the production chain of commercial poultry and poultry products.

Poultry producers involved in the production of day old chicks should be aware of the responsibility to produce disease free chicks. An effective program should be in place to prevent infectious and vertically transmissible diseases being transmitted within the poultry production chain.

Staff shall be able to understand and accept responsibility to prevent unnecessary suffering of chick embryos and live chicks. Hatchery operators shall be satisfied that staff responsible for handling eggs and live chicks have the skills necessary to perform any required procedure without causing suffering.

3.2 Hatchery Buildings

3.2.1 Location of Hatcheries

The choice of a suitable isolated geographical location will facilitate hygiene and disease control and the hatchery building should therefore be preferably located as far away from other poultry and livestock.

The hatchery building should be fenced off or constructed in such a way to facilitate control of traffic and access to the facilities.

Wild birds, domestic and other animals must be excluded from the hatchery area.

3.2.2 Building Design

The hatchery should be designed to enable suitable workflow and air circulation principles.

The work flow of the incubation process should preferably be in one direction from hatching egg receiving and storage to dispatching of chicks and disposal of hatchery debris.

Flow of air through the hatchery should also preferably be in this direction.

Wash water drains should also divert wash water in this direction.

The building should include physical separation of the main work areas comprising egg receiving and storage, incubation rooms, chick hatching rooms, chick handling rooms and hatchery debris disposal area.

The materials used in constructing the building should be smooth and easily cleaned to facilitate hygiene control and disinfection.

3.3 Egg Quality and Hatching Egg Storage

3.3.1 Egg Quality

The hatchery should source hatching eggs only from reputable breeder farms of which the disease status of the birds is known and documented.

Dirty, broken, cracked leaking and any other abnormal eggs should not be used for hatching purposes.

It is advisable not to use floor eggs for hatching purposes.

Only clean, sanitized hatching eggs received in a clean and suitable handling system and that have been properly stored at temperatures below the embryonic threshold temperature of 24°C should be used.

3.3.2 Handling Hatching Eggs

Hatching eggs should preferably be handled as little as possible and when handled this should be gentle.

Personnel handling hatching eggs should wash their hands with soap and water before handling eggs or use an appropriate hand disinfectant such as alcohol gel.

3.3.3 Sanitation of hatching Eggs

Hatching eggs should be sanitized by a suitable method as prescribed by a veterinarian with poultry experience.

Staff should be skilled in the application of the procedures prescribed by the veterinarian.

3.4 Hatchery Hygiene and Chick Health

3.4.1 Chick Health

Chicks should only be incubated from eggs sourced from reputable breeder farms of which the disease status of the birds is known and documented by a veterinarian or accredited laboratory.

Acceptable control measures must prevail to assist in the prevention of vertical (transovarial) transmission of the following diseases:-

Mycoplasma gallisepticum

Mycoplasma synoviae

Salmonella Pullorum, S. Gallinarum, S. Enteritidis and S. Typhimurium.

Avian Influenza

Leucosis

Avian *encephalomyelitis*

Egg Drop Syndrome

Newcastle disease

In addition chick hatcheries shall do regular tests for Salmonella as per the Salmonella reduction plan.

As soon as a change in the health status of the chicks has become apparent, the customer of the chicks must be notified

3.4.2 Building Hygiene

The hatchery should have a comprehensive cleaning, disinfection and hygiene monitoring system in place as advised by a competent veterinarian or knowledgeable person.

All staff involved in the incubation processes should be aware of and fully skilled in the application of the hygiene program as may apply to their respective areas of responsibility.

Corrective action should be taken immediately that the monitoring process indicates any deviation from the standard.

3.4.3 Staff and Visitors

Clean overalls, hair cover nets (or other suitable headgear) and footwear should be provided for all personnel and visitors entering the hatchery.

A disinfectant foot-bath at strategic points within the hatchery as advised by a veterinarian or knowledgeable person will assist in combating the possible transfer of bacteria from one section to another with the building.

Frequent washing of hands in a disinfectant solution or the use of alcohol gel should be encouraged.

During chick take-off especially staff movement from the hatching section to the egg rooms and setter section should be discouraged.

3.5 Handling of Chicks

3.5.1 Chick Take-off

Every person working in the hatchery shall be able to understand and accept responsibility to prevent any unnecessary suffering of chicks.

Hatchery operators shall be satisfied that staff responsible for handling live chicks have the skills that are necessary to perform any required procedure without causing suffering to the chicks.

During take-off, hatching trays with chicks shall be handled in the horizontal position only and chicks removed from the hatching tray as gently as possible without excessive jarring of trolleys and handling systems.

Staff handling chicks should wash and disinfect their hands before commencing work as well as frequently as is practically possible between different batches of chicks.

Any cull chicks should be removed as soon as possible and humanely disposed of by neck dislocation, gassing by utilizing suitable bottled gas such as carbon dioxide or maceration.

During the chick take-off process the body temperature of the chicks should not be allowed to drop unduly.

3.5.2 Chick sexing

In hatcheries where vent sexing is applied, this should be performed only by skilled and appropriately trained staff.

Feather and color sexing requires less skill than vent sexing but staff performing such acts should be adequately trained and competent in performing these tasks as gently as possible.

3.5.3 Chick Holding

Only first grade chicks with no deformities or other abnormality are to be boxed into clean containers specifically designed for the transport of chicks.

Where second grade chicks are sold, they should be clearly marked as being second grade. Second grade chicks should however not be of such quality as to result in undue suffering.

Rooms in which chicks are to be held before dispatch should be adequately ventilated and temperature controlled to ensure that chicks remain comfortable.

Chicks should be dispatched as soon as possible so to ensure that they receive food and water within 48 hours of hatching.

3.6 Morphological Alteration of Chicks

3.6.1 Dubbing

Dubbing of male chicks should only be done when advised to be necessary by a veterinarian or the supplier of the applicable genetics.

Should this practice be deemed necessary it must only be carried out by a skilled person who is competent and trained in this procedure.

The procedure should be well documented and underwritten by the veterinarian.

3.6.2 Toe Removal

The removal of the terminal segment of each inward pointing toe of breeding male chicks may be done at the advice of a veterinarian or the supplier of the applicable genetics.

Should this practice be deemed necessary it must only be carried out by a skilled person who is competent and trained in this procedure.

The procedure should be well documented and underwritten by the veterinarian

3.6.3 De-Spurring

The cauterizing of the spur of breeding male chicks to avoid damage to females during mating may be performed at the advice of a veterinarian or the supplier of the applicable genetics.

Should this practice be deemed necessary it must only be carried out by a skilled person who is competent and trained in this procedure.

The procedure should be well documented and underwritten by the veterinarian

3.7 *Euthanasia and Disposal of Non-Saleable Chicks*

Cull and surplus hatchlings awaiting disposal must be treated as humanely as those intended for retention or sale. They must be disposed of humanely by either of the two accepted procedures below.

Decapitation or cervical dislocation of individual chicks when performed by trained and competent personnel is accepted.

3.7.1 Carbon Dioxide

Gassing of chicks with carbon dioxide or gas mixtures with argon are accepted in the process of disposal.

Chicks disposed of through this method must be placed in a container prefilled with gas and in such a way so as to ensure good penetration of the gas and prevent suffocation.

Containers or chambers must be designed to allow continual refilling of gas to maintain the correct levels of the gas.

Chicks must be exposed to the gas for a long enough period so as to cause death.

3.7.2 Maceration

High speed maceration of chicks using properly designed macerators is a practical and accepted method of euthanasia.

3.8 Disposal of Un-hatched Chicks and Hatch Debris

Drowning, smothering and thermal exhaustion or any other inhumane methods are not acceptable under any circumstances.

High speed maceration is a practical and humane method of euthanizing large numbers of un-hatched chicks that are still within the egg at the time of removing the rest of the chicks from the chick trays.

This procedure should be carried out as soon as is practically possible after removal of the chicks from the hatcher machine so as to avoid undue suffering of the chicks that are still within the egg shell.

Rapid cooling and freezing are also accepted.

All un-hatched chicks must be dead before disposal.

Hatch debris should be transported in closed containers to municipal dumps or other storage facilities which would not allow for any contamination of ground water.

There must be adequate fly control in the storage area where hatch debris is kept.

3.9 Transportation of Chicks

Only healthy and vigorous chicks shall be dispatched in clean containers or boxes specifically designed for handling and transport of day old chicks.

Containers must be stacked in such a manner that free airflow between stacks of containers is not hampered.

As a rule the chick box/container should allow for 20 cm² per chick but environmental temperature, duration of the journey as well as design of the chick truck shall be considered when determining the density of chicks in the containers.

Containers with live chicks shall not be tilted from more than 20 degrees from horizontal during any stage of loading or unloading.

Containers should always be moved smoothly and never thrown or dropped.

A tie-down device preventing containers from overturning is advisable in the chick truck.

Chick trucks should be designed in such a way that sufficient airflow is achieved to all containers within the truck and that adequate temperature control is achieved for the duration of the delivery.

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

The driver of the vehicle transporting chicks shall be a responsible person with a valid and appropriate driver's license and trained in the welfare issues that could affect the chicks during transportation.

The drivers shall have telephone numbers of the owners of the chicks 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 chick containers to slip or fall causing suffering. The safety and welfare of the chicks shall never be ignored or disregarded.

Chicks 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 capable of maintaining sufficient ventilation and temperature within the truck.

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. .

In the event that day old chicks are transported by air, arrangements need to be made with the carrier to ensure that the chicks are not kept in draughty areas and are transported as quickly as possible.

In the event of international transport, all paperwork including import permits and health certificates need to be in order to prevent unnecessary delays.

Enough space needs to be left between pallets to ensure adequate ventilation. It is unacceptable to leave chicks on the tarmac prior to loading..

3.10 Biosecurity in Chick Hatcheries - People

Biosecurity in chick hatcheries is of the utmost importance to ensure healthy chicks.

People movement and the movement of egg trays and other equipment is one of the main means of transmitting disease between farms and hatcheries. There are different aspects of biosecurity relating to people movement in chick hatcheries 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.

DECLARATION WITH REGARD TO LIVE BIRD SALES

We hereby affirm, that at the time of catching, the flock from which the live birds to which this declaration pertains:

- 1) Were free of visible signs of disease and no abnormal mortalities have been reported in the flock of origin in the preceding 30 days.
 - 2) Have been tested for notifiable Salmonellae according to the "Salmonella Movement Protocols" and complies with the requirements in the protocol.
 - 3) Have been tested for notifiable Avian Influenza according to the "Contingency Plan in the case of an outbreak of notifiable avian influenza (NAI)" and complies with the requirements in the document.
 - 4) Have been tested for Newcastle Disease according to the "Movement Control Protocol in case of Newcastle disease" and complies with the requirements in the protocol.
 - 5) Have been handled in accordance with the current SAPA Code of Practice for Live Bird Sales.

Date & time of feed withdrawal:

Date & time of water withdrawal:

Date & time of departure from farm of origin:

SELLER'S DETAILS

Type of stock: Broiler breeders / Broilers/ Layer breeders/ Spent layer birds

(strike through whichever is not applicable)

House of origin:

Site of origin:

Farm of origin:

Magisterial district:

Responsible person:

Contact details: (tel / cellphone number) **Signature:**

BUYER'S DETAILS

Destination:

Magisterial district

Responsible person: **Signature:**

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 24 hrs	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	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 label or 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 1974 with their 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 label or 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.