
**GENERAL NOTICES
ALGEMENE KENNISGEWINGS**

NOTICE 511 OF 2008

DEPARTMENT: AGRICULTURE

**FERTILIZERS, FARM FEEDS, AGRICULTURAL REMEDIES AND STOCK REMEDIES
ACT, 1947 (ACT NO. 36 OF 1947)**

PUBLICATION OF SOUTH AFRICAN POLICY ON ANIMAL FEEDS

I, Lulu Xingwana, Minister of Agriculture hereby publish South African Policy on animal feeds. This document will serve as a framework for the regulation and legislation of animal feeds in South Africa.

1. INTRODUCTION	3
2. PROBLEM STATEMENT AND BACKGROUND	3
2.1 LEGISLATION- FERTILIZER, FARM FEEDS, AGRICULTURAL REMEDIES AND STOCK REMEDIES ACT, 1947 (ACT NO. 36 OF 1947).....	4
2.2 INSTITUTIONAL ARRANGEMENTS	5
2.3 ANIMAL FEED SAFETY	5
2.4 NON-CONVENTIONAL SOURCES OF ANIMAL FEED INGREDIENTS	7
2.5 LABELING OF ANIMAL FEEDS	8
2.6 RENDERING PLANTS.....	8
2.7 ANIMAL FEED AND FEEDING WASTE	8
2.8 IMPORT AND EXPORT OF ANIMAL FEEDS	8
2.9 SOCIO-ECONOMIC ISSUES.....	8
3. POLICY OBJECTIVES	9
4. POLICY TO ADDRESS THE PROBLEM	9
4.1 LEGISLATION	9
4.2 INSTITUTION	10
4.3 ANIMAL FEED SAFETY	10
4.4 NON-CONVENTIONAL SOURCES OF ANIMAL FEED INGREDIENTS.....	11
4.5 LABELING OF ANIMAL FEEDS	11
4.6 RENDERING PLANTS.....	11
4.7 ANIMAL FEED AND FEEDING WASTE	12
4.8 IMPORT AND EXPORT OF ANIMAL FEEDS	12
4.9 SOCIO-ECONOMIC ISSUES.....	12
5. ORGANISATION AND ADMINISTRATION	12
6. REFERENCES	13
7. POLICY OWNER	13
A. ANNEXURE 1	14
DEFINITIONS/GLOSSARY OF TERMS	14
B. ANNEXURE 2	14
ACRONYMS/ABBREVIATIONS.....	14

SOUTH AFRICAN POLICY ON ANIMAL FEEDS

1. INTRODUCTION

The animal feed industry faces various challenges many of which affect the economy of the country. The industry operates in a highly competitive environment that must continuously respond to the new challenges with regard to safety, efficacy and quality of animal production inputs and these issues are not adequately addressed in the existing legislation and regulatory framework.

Animal feeds encompass feed ingredients, feed additives, pet foods and feeds intended for cattle, sheep, goats, horses, poultry, pigs, wild animals, fresh water and sea fish, birds, dogs and cats and other companion animals, and ostriches. Animal feeds have evolved from a period where using grains and by products from different industries as supplemental feeding to animals, and using techniques which were qualitatively in order to assess the quality of these feeds, to the current situation where quality can now be measured by highly scientific means.

Feedstuffs are a significant link in the chain of production of food products derived from or produced by livestock. They enable animal feed ingredients, many of which are derived from human food industries, to be used in the efficient production of milk, meat or eggs as well as for feeding recreational and companion animals such as horses, dogs and cats.

The animal feed industry has put a lot of emphasis on improving productivity of livestock. The industry has also facilitated the availability and distribution of animal feeds, and provided nutritional information to livestock breeders and producers in order to optimise production. Over the years the inclusion of products known as production enhancers or growth promoters into animal feeds has increased markedly.

There are increasing reports from Scientific and Medical Journals regarding the risks posed to human and animal health by the use of growth promoters in animal production. Food safety through feed safety has become a priority and the application of various global quality standards have been adopted by the feed and animal production industry

The Pet Food Industry deals exclusively with domesticated animals normally maintained as pets. This industry is situated between the agricultural feedstuff industry and the human food industry in the production chain. The pet food industry consumes agricultural by-products generated from food processing as well as primary agricultural products such as grains (maize, sorghum, rice, wheat). This industry also acts as an outlet for value added by products. Pet foods fall within the definition of animal feed and are regulated by the Department of Agriculture. Pet foods also include therapeutic foods which are designed to meet specific nutritional needs of diseased pets. Recently, there has been an increase in the use of substances possessing medicinal properties in pet foods and in supplements. The question is whether or not healthy pets should be allowed to consume food containing these substances on a continual basis.

There are also certain pet foods which may only be sold on prescription by Veterinarians. The challenge with pet nutrition is that it is the pet owner that decides what the pet must eat. Unlike production animals, pets take long to show signs of adverse reaction to a specific feeding regimen. The challenge is to protect the pet owner and the pet.

Animal feed issues in today's environment have evolved past the stage and the scope under which the existing legislation was based.

It is therefore critical that animal feeds receive the attention they deserve in order to make SA globally competitive in an era wherein of the connection between safe feed and safe food is increasingly recognized.

2. PROBLEM STATEMENT AND BACKGROUND

In the recent past concerns about the ability of the state to effectively regulate animal feeds and thus guarantee food safety have been raised. In the light of these and other concerns, detailed in this document, the Department of Agriculture (DoA) has been engaged in a restructuring process and a legislative review in order to improve service delivery.

In order to inform new legislation a policy on animal feed which will serve as a framework for the proposed new legislation and as a guide to the regulatory framework for animal feeds in South Africa has been developed.

2.1 Legislation- Fertilizer, Farm Feeds, Agricultural Remedies and Stock Remedies Act, 1947 (Act No. 36 of 1947)

The scope of the current Act is broad. It covers the regulation of Fertilisers, Farm Feeds, Agricultural Remedies and Stock Remedies under one act. Although the Act has been amended several times, in 1950, 1970, 1972, 1977 and 1980, to accommodate some of the developments within the agrochemical industry, the Act is outdated. Only animal feeds which are intended for sale are currently regulated by this act. Animal feeds manufactured for own use is exempted.

Consideration of recent developments in agriculture and other Acts which are indirectly involved with the regulation of animal feeds, are not included, with the exception of the Medicine and Related Substance Control Act, 1965 (Act No 101 of 1965).

Some of the Acts not considered in the current legislation are;

- * Agricultural Product Standards Act (Act No 119 of 1990) which determines the standards and requirements regarding control of the export of feed products.
- * Meat Safety Act, 2000 (Act No 40 of 2000) which governs the use of safe animal products to be used for human and animal consumption.
- * Animal Health Act, 2002 (Act No 7 of 2002) which provides measures to promote animal health and to control diseases and regulate the importation and exportation of animals and things. This Act will replace the Animal Disease Act of 1984 (Act No 35 of 1984), which currently provides the legislative framework once the President has proclaimed the Animal Health Act.
- * Agricultural Pests Act, 1983 (Act No 36 of 1983).
- * National Environmental Management Act, 1998 (Act No 107 of 1998) which provides for cooperative environmental governance by establishing principles for decision making on matters affecting the environment.
- * Genetically Modified Organisms Act, 1997 (Act No 15 of 1997) which provides measures for managing activities involving GMOs.
- * The National Environmental: Biodiversity Act, 2004 (Act No 10 of 2004) which provides for the management and conservation of South Africa's biodiversity within the framework of the National Environmental Management Act, 1998; the protection of species and ecosystems that warrant national protection; the sustainable use of indigenous biological resources; the fair and equitable sharing of benefits from bio-prospecting involving indigenous biological resources.
- * National Environmental Management Act: Air Quality Act, 2004 (Act No. 39 of 2004) which provides for the regulation of air quality in order to protect the environment by providing reasonable measures for the prevention of pollution and ecological degradation and for securing ecologically sustainable development , while promoting justifiable economic and social development.
- * National Water Act, 1998 (Act No.36 of 1998) which provides for the fundamental reform of the law relating to water resources; to repeal laws; and to provide for matters connected therewith.
- * Occupational Health and Safety Act, 1993 (Act No. 85 of 1993) which provides for the health and safety of persons at work.

Currently, any person who contravenes a provision of the Act or the regulations is guilty of an offence and liable on summary conviction to a fine not exceeding R1000, which is too low to be a deterrent. Understandably, sentences awarded by courts often have a limited deterrent effect. This makes it a challenge to enforce the Act using the mechanisms available through the Courts.

2.1.1 Powers of the Registrar

Under the current Act the Registrar is accountable to the Minister of Agriculture. The Act also gives provisional discretionary powers to the Registrar which are limited to importation of unregistered agricultural production inputs. This provision is intended for emergency situations like drought, etc. However, the current administrative arrangements do not allow for rapid decision making in the event of an emergency. This provision can also lead to decision making which could have negative legal and bio-security implications for the country if made by un-informed individuals, who do not have the necessary expertise.

2.2 Institutional arrangements

Efficient and adequate co-ordination is lacking at operational level amongst relevant government departments and personnel. Upon registration there are no effective surveillance systems to ensure compliance with registration requirements. Long-term monitoring programs essential for monitoring and evaluating the impact of certain feeding practices and the implications of continuing or discontinuing those practices on the competitiveness of South African agriculture are not in place. If government does not collect and maintain adequate and reliable data, it is difficult for the state to assure the public that agricultural products used in the country are of good quality and do not pose any risk to animals, humans and the environment.

2.3 Animal feed safety

Animal feedstuffs should be of a consistent quality to meet expected performance standards, and must protect both human and animal health. Animal feedstuffs must be safe and not pose a risk to human or animal health and to that end various components found in animal feed must be the focus of any policy on animal feed.

2.3.1 Animal feed contaminants

There is a global concern on the presence and prevalence of feedstuff contaminants in animal feed. These contaminants have different effects and pose specific risks to animal health, human health and they can also be a food safety risk.

2.3.1.1 Mycotoxins

There has been an increased number of cases of mycotoxin detection in raw materials used in animal feed and/ or human food, especially in grain cereals and oil seeds. The growth, multiplication and subsequent production of mycotoxins are favored by particular environmental factors. Controlling environmental factors is extremely difficult if not impractical. Therefore contamination of grain cereals and oil seeds is unavoidable, which makes it a challenge to food safety. Although new mycotoxins are being discovered at comparatively high concentrations, few have actually been identified as posing dangerous threat to animal and human health.

The mycotoxins that are considered to be important are the Aflatoxins (AF), Deoxinivalenol (DON), Zearalenone (ZEA), Ochratoxin (AC) and Fumonisin (F), owing to the fact that they are the most common contaminants in foods and feeds. Furthermore, the negative effects that they exert in animals are highly detrimental even at low concentrations.

Detecting mycotoxins is expensive and difficult. An estimate of the precise and accurate levels of mycotoxins in a large bulk feed is difficult, owing to the large variability associated with test procedures. A representative sample from a whole lot must be obtained by proper sampling procedures.

Currently, there are no stringent regulatory and process control systems in place. Animal producers are at risk of ending up with mycotoxin-contaminated grains, oil seeds or feeds. These toxic substances produce a wide range of harmful effects (acute and chronic) in animals. Considerable evidence supports an association between mycotoxins and certain disease syndromes, a condition known as mycotoxicosis. The negative effects of these fungal metabolites range from reduced performance, (poor growth, reproduction, egg production), immuno-suppression leading to susceptibility to infectious diseases and high mortality. These effects will vary on the type of toxin, dosage, duration of exposure, animal species, and age of the animal as well as the purpose for which they are kept. Proper management for effective control, detection, quantification and surveillance of mycotoxins is therefore very important.

2.3.1.2 Heavy metals in feed

Minerals in general are essential dietary nutrients for animals. However, certain mineral elements produce adverse effects if they are consumed at excessively high levels. As a result it is important to have mineral tolerance levels for animals. Heavy metals are mineral elements with a specific gravity greater than 5. These are generally regarded to be potentially toxic and the elements generally included in this category are cadmium, lead, mercury, and arsenic. There are other mineral elements which are of nutritional significance which also fit in this category including vanadium, cobalt, copper, iron, manganese, molybdenum, zinc and chromium. In the past mineral tolerance levels were generally established through feeding trials in which graded levels of elements were offered and specific criteria examined. Recently, modern laboratory methods make use of cell cultures and nucleic acid analyses to further refine our understanding of mechanisms of mineral toxicity in animals. As cellular techniques improve it is important that mineral tolerance levels are constantly being reviewed.

2.3.1.3 Dioxins

Dioxins are a group of chemicals that are highly persistent in the environment. The most toxic compound is 2,3,7,8-tetrachlorodibenzo-p-dioxin or TCDD. Chemicals like PCBs that act like dioxins are measured in relation to TCDD. Dioxins are formed as a result of burning chlorine-based chemical compounds with hydrocarbons. The major source of dioxin in the environment comes from waste-burning incinerators. Pollution from dioxins is also associated with the production of Polyvinyl Chloride (PVC) plastics and with production of certain chlorinated chemicals (pesticides).

The major source of exposure to dioxin is food. Since dioxins are fat soluble, they bio-accumulate in the food. If animals are fed animal feed that is contaminated with dioxins, these substances accumulate in the body of the animal and can be passed on to human beings as food. People consuming food contaminated with dioxin are at risk of developing cancer. In addition, exposure to dioxin can also cause reproductive and developmental problems.

2.3.1.4 Denatured Oils

The availability to the Feed Industry of vegetable oils and vegetable oil residues and by-products for inclusion into feeds as a feedstuff also presents a risk to animals. The incorrect blending with these oils of unprocessed old restaurant oils introduces carcinogenic compounds into these oils and therefore into the feed supplied to the animals.

2.3.1.5 Pesticides

Pesticides are substances or mixtures of substances which are used to destroy, suppress or alter the life cycle of any pest. In animal feeds pesticides of chemical origin are the most critical ones. Raw material by-products from plants which have been treated with chemical pesticides sometimes contain residue levels which are above permissible limits. It is important for government to put in place a surveillance system that will ensure that end users of agricultural products do not end up with products which are contaminated with pesticides.

2.3.1.6 Salmonella

Salmonellosis is a leading cause of enteric illness in humans, with symptoms ranging from mild gastroenteritis to systemic illness such as septicaemia and other longer-term conditions. A wide range of foods has been implicated in food-borne salmonellosis, however, as the disease is primarily zoonotic, foods of animal origin have been consistently implicated as the main sources of human salmonellosis (FAO/WHO, 2002).

Contamination of animals by *Salmonella* during primary production is due to several factors and there are no data on the relative importance of one factor over another. Because of this it is not possible to estimate the risk associated with various practices.

Good hygienic practices and good agricultural practices are necessary prerequisites for the management of *Salmonella*, on-farm. Several studies have been undertaken looking at factors associated with increased risk of *Salmonella* carriage in chickens. Most, if not all, of these studies have considered

factors individually. It is likely that numerous factors result in *Salmonella* infection in poultry prior to slaughter. It is not feasible, given the large number of factors, to consider them in combination.

Contamination of animals by *Salmonella* can usually be traced to one of three sources during primary production: (1) contaminated feed, (2) environmental sources, and/or (3) vertical transmission from contaminated eggs.

Due to feed being one of the contaminants, procedures and monitoring programs for raw materials and feeds should be put in place.

2.3.2 Veterinary chemicals

Maximum residue limits (MRLs) for veterinary chemicals intentionally added in animal feeds are established by the Department of Health in South Africa. Quality Control measures should evaluate the potential dietary exposure associated with the proposed MRLs and ensure that this exposure does not represent an unacceptable risk to public health and safety. However, there are animal health, human health and food safety concerns with the use of some veterinary chemicals.

2.3.3.1 Antibiotics

Antibiotics have been used in animal health since the 1950's. Their use can be either therapeutic (treatment of diseases) or sub-therapeutic (prevention of diseases). The use of sub-therapeutic level of antibiotics in animal feed has been controversial for the past three decades, particularly when the antibiotics used have the same properties as those used in human medicine. There is concern that the practice may lead to the development of bacterial strains that are resistant to antibiotics that are vital in human medicine, thus compromising therapy. Resistant bacteria can also develop cross-resistance to other related antibiotics. Additionally, some non-pathogenic resistance bacteria have the ability to transfer resistant genes to pathogenic bacteria. Although antibiotics are used therapeutically to kill bacteria responsible for human and animal diseases, the sub-therapeutic (low levels) used in animal feeds are typically used to improve production of animals, as evidenced by the increased growth rate and conversion of feed into body weight. The sub-therapeutic feeding of antibiotics is a well-established practice in farming. Its usage has kept pace with modern production methods, which involves confining large numbers of animals in a small space. The Union of Concerned Scientists estimates that 7 096 antibiotics are used for this purpose. Antibiotic growth promoters are still intensively used in South Africa to increase production. There are therefore concerns about the range and extent of antibiotic use in animal production.

2.3.3.2 Growth promoting hormones

Growth-promoting hormones have been used by the beef industry for over 30 years to improve the animal's ability to more efficiently use nutrients and produce leaner beef. Numerous scientific bodies and regulatory agencies have investigated the practice and have concluded that the use of hormones in beef production is safe. Although there are positive reports about the use of hormones, the public has raised concerns about unpublished industry data and lack of procedural transparency in some industries. The main concern is on environmental contamination, particularly drinking water from fecal and urinary excretion of hormones by millions of cattle continuously processed through feedlots. Of equal concern is the reported sale of discarded ears of slaughtered cattle containing very high levels of residual hormones to rendering plants for potential uses including animal feed, pet food, and manufacture of gelatin and glycerol for cosmetics, foods and pharmaceutical products. Hormones are naturally present in small amounts in all meat, whether from implanted animals or not. In addition, the human body naturally produces hormones in quantities greater than would be consumed by eating beef or any other foodstuff. However, because of activist pressure and food safety concerns, the use of hormones as production enhancers in SA should be restricted, especially if South Africa wants to remain globally competitive and continue to export to some markets.

2.4 Non-conventional sources of animal feed ingredients

Recent developments in the world economy and technological advancements have resulted in an increase in the manufacture and use of non-conventional raw material sources for animal feed ingredients. The economic and resource conservation benefit of using these products has proven to be substantial. These sources are nutraceuticals, herbs, industrial waste and other inorganic supplements. The emergence and development of these products is a dynamic process. Communication on the

potential risk and benefits from the use of these products between stakeholders is becoming more and more important.

2.5 Labeling of animal feeds

The current regulations on labeling of animal feeds may not always offer the users of animal feeds the choice to choose products that will meet their needs. These regulations focus on the nutrient requirements of the animal and on how the product should be used. Issues of food safety, animal welfare and end users choice are not adequately addressed. Labeling requirement must not be limited to minimum mandatory standards requirements, however where possible they should be flexible enough to afford manufacturers the opportunity to add more information on labels.

2.6 Rendering plants

Rendering provides an important service to society and the animal feed industry by processing animal byproducts derived from the meat and other animal production industries. Without rendering, there will be an accumulation of unprocessed animal byproducts which could create bottlenecks for the meat industry and pose a serious potential hazard to animal and human health. Rendering also kills most infectious organisms in meat and animal byproducts and therefore normally offers safe processed animal proteins for use in animal feeds. The regulation of rendering plants in South Africa is governed by Act 36 of 1947 in co-operation with state veterinary services. Monitoring of these plants needs attention.

2.7 Animal feed and feeding waste

Animal feeds are subject to contamination from a wide range of organic and inorganic compounds. These contaminants include pesticides, industrial pollutants, radionuclides and heavy metals, which have a negative impact on the environment when applied incorrectly. When the level of contamination is above the rejection threshold the products have to be discarded. There is also waste coming from animal feeding especially at farm level. There are no specific guidelines for the animal feed sector for dealing with animal feed and feeding waste. Most efforts to control animal feed and feeding waste have emphasized a voluntary approach based on the implementation of best management practices.

2.8 Import and export of animal feeds

Currently, the import of animal feed products, with the exception of grain cereals for trade in SA is done under Act 36 of 1947. Products which are manufactured locally for the export market do not have to be registered under Act 36 of 1947. However, the Agricultural Product Standards Act 119 of 1990 makes certain export standards for selected animal feed products. The importation of animal protein and animal byproducts must first conform to the requirements of the Animal Disease Act 35 of 1984. Genetically modified products and byproducts must first be registered under the Genetically Modified Organisms Act 15 of 1997 before they can be imported. The importation of animal feed of plant origin must also comply with the requirements of the Agricultural Pest Act, 1983. Animal feed products which are not intended for sale in the Republic must comply with regulations or can be imported at the discretion of the Registrar of Act 36 of 1947 after there has been a preliminary assessment of the product in question. Import permits that are issued under these different Acts do not make reference to each other where applicable. This creates a lot of confusion for enforcers with regard to who has jurisdiction over what, thus resulting in poor enforcement. As a result in some instances unregistered animal feeds which are intended for sale enter the country without complying with the requirements of Act 36 of 1947. This is an area that needs attention.

2.9 Socio-economic issues

Access, ownership and participation by previously disadvantaged people in the feed industry, needs to be addressed by relevant legislation and government programs.

2.9.1 Access to animal feed

In the rural areas of South Africa where nutrition has been shown to be one of the most limiting factors to animal production and reproduction, supplementary feeding with commercial animal feed is negligible and in most instances, such feed is used incorrectly. Rural livestock farmers are facing a challenge of coping with requirements for supplementary feeding due to the low and variable mineral content of the soil, and pastures coupled with animal requirements for minerals and total nutrients, especially protein and energy-

rich diets. Accessing commercial animal feed in rural areas is a challenge as distribution centres are located in urban areas or near commercial farms.

There are a lot of pets in rural areas which do not receive commercial food. The challenge is that most of the pet owners cannot afford to buy food for their pets, as a result they end up eating table scraps which are left over's from the owner. Most of these pets are dogs which are used for hunting, security, shepherding and as companions. There are also a significant number of cats. In most cases cats are used for rodent and snake control. These animals play a vital role in the daily activities of the owners and are regarded as part of the household. However, they do not receive food that will provide them with their basic nutritional requirements.

2.9.2 Animal feed manufacturers

The key issue is to ensure that all animal feed produced and/or used in South Africa is safe for the animal intended, the food derived from the use of this animal feed is safe for humans and that the use of this feed is not harmful to the environment in any way.

2.9.3 The farming community

The farming community is divided into established and emerging farmers. Infrastructure which is intended to support the agrarian land reform programs for emerging farmers who need to use commercial animal feeds are insufficient. There is a lot of livestock in townships which do not receive supplemental feeding and these animals are malnourished and as a result this affects their production and reproduction rate.

2.9.4 Public perception on feed safety

There is a general perception from the general public that from time to time either animal feeds or feeding practices pose a risk to human health and food safety. This has resulted into concerns over potential threats which might be posed by animal feeds resulting from misuse and mishandling of products mixed into animal feeds. It is therefore important that government and industry assures the public of animal feed safety and the safety issues around animal feeds.

3. POLICY OBJECTIVES

In order to address some of the problems raised particularly those that relate to the safety of animal feed and thus assure feed safety, a policy which has the following objectives must be developed:

- To provide for an effective and efficient regulatory system that will ensure that the manufacture, distribution and use of all feed ingredients and animal feed result in safe feed and food products.
- To ensure that the programs and procedures, available for the regulation of animal feeds and that regulatory oversight of the animal feed manufacturing industry, is effective, efficient and that such programs are implemented in a co-ordinated and holistic manner.
- To provide tools to manage challenges facing this and related industries and avoid unnecessary control measures in order to make the industry globally competitive.
- To promote active participation in the animal feed industry through offering incentives to the industry and bridging the gap between the first and second economy.

4. POLICY TO ADDRESS THE PROBLEM

The policy on animal feeds should take a holistic view of South African agriculture and socio-economic issues.

4.1 Legislation

The Act should be repealed in order to provide for a system that will continuously respond rapidly to new developments in the animal feed sector in order to make SA globally competitive. A new Feeds Act which will include sterilizing plants should be developed. This Act should regulate all animal feed manufactured and/or sold in South Africa. This Act should provide measures to license and regulate the manufacture and distribution of feeds and also register additives and nutritional supplements.

4.1.1 Powers of the Registrar

All legal matters emanating from regulations and matters incidental thereto when and where the need exist must be able to flow directly from the office of the Registrar to the office of the Chief Director for Ministerial approval via legal services. The Financial and administrative matters will continue to follow through the normal operational channels.

4.2 Institution

There must be co-ordination and clear service level agreements at operational level between the office of the Registrar, Agricultural Research Council and the South African Bureau of Standards in order to increase the level of capacity and the various inspection bodies including APIS.

Manufacturers of inorganic substances used in animal feed products should be granted conditional registration that can be reviewed over a specified period of time.

4.3 Animal feed safety

As part of their feed safety systems, all producers and retailers of feed should have a traceability system in place that allows for efficient recall in the event of a feed/food safety incident which can be directly linked to animal feed. Such a traceability system should be included in the legislation.

4.3.1 Animal feeds contaminants

A new institutional framework will have to be developed that will be able to monitor contaminants in animal feeds. There must be a rapid alert system to animal feed manufacturers and utilizers of feed where and when these contaminants are detected.

4.3.1.1 Mycotoxins

Due to the widespread presence of fungi in the environment and high stability of their toxins, food contamination by mycotoxins is almost unavoidable even with good management practices. However, attempts are made so as to inhibit fungal colonisation, prevent toxin production or detoxify them. The most important aspect to control toxin production is through prevention of growth and multiplication of fungi in foods. Several methods have been adopted to prevent fungal colonisation in food commodities in the field prior to harvesting as well as during storage. These measures should be developed and standardized according to regional requirements within the country. It is imperative that the DoA and Department of Health take a leading role in monitoring the concentrations of the major five mycotoxins (AF, DON, ZEA, AC & F) in grain cereals and oilseeds and establish a national database so that an early warning system for these toxins can be established. There must be a minimum mandatory reporting period by feed ingredient suppliers.

4.3.1.2 Heavy metals in feed

The maximum tolerable levels of heavy metals in feed are regulated by legislation. The challenge is to monitor these contaminants in feed and in raw materials. All products which contain heavy metals must be accompanied by a certificate of analyses when they are delivered to the animal feed manufacturers. This will enable the industry to self police in terms of ingredient quality

4.3.1.3 Dioxins

There must be a rapid alert system to report contaminated animal feed products. Products coming from other countries which have been identified as being contaminated or at risk of having been contaminated must be imported on condition that there is sufficient evidence that they are safe. Where non conforming products have been imported into the country, the Department must be informed immediately and the necessary step must be taken by government and industry to rectify the situation.

4.3.1.4 Denatured Oils

Government must play a pro-active role in monitoring denatured oils and their use in animal feed. Product which are manufactured locally and product which are imported must only be used in the manufacture of animal feed after sufficient evidence has been provided on the safety of the product. This can be established through production records and certificates of analyses.

4.3.1.5 Pesticides

The use of pesticides in South Africa is regulated under Act No. 36 of 1947. However, the Maximum Residue Limits (MRLs) for pesticides are regulated by the Department of Health under the Foodstuffs, Cosmetics and Disinfectant Act 54 of 1972. When procuring raw materials to be used in the manufacture of animal feeds it is important that these limits are adhered to. The Department of Agriculture under the Agricultural Product Standards Act (Act No 119 of 1990) is responsible for monitoring MRLs of export products. It is the mandate of the Department of Health to monitor MRLs in the Republic. This fragmentation in the system makes it a challenge to monitor MRLs in animal feeds. The industry must become active participants in the monitoring programme for MRLs in animal feed.

4.3.1.6 Salmonella

The responsibility of monitoring salmonella in animal feed ingredients should be a joint effort between the supplier and the manufacturer of the final product. There must be periodic microbiological analyses conducted on raw materials. The government has already put in place measures to be followed with regard to the control of micro-organisms in animal feeds. These measures include the regulation of rendering plants up to product handling. Surveillance must be increased in order to ensure that there is compliance with the regulations.

4.3.2 Veterinary chemicals

In South Africa veterinary chemicals are used for therapeutic purposes and also as production enhancers. South Africa is a protein deficient country with a high demand for feedstuffs which are rich in protein. The climatic conditions in South Africa are conducive to micro-organisms that cause disease outbreaks. This creates an animal husbandry challenge in terms of modern agricultural practices especially where animals are kept in close confinement. In order to cope with these challenges veterinary chemicals are employed in modern animal production practices in South Africa.

4.3.2.1 Antibiotics

The use of antibiotics in animal feeds should be better controlled. Manufacturing establishments which have dedicated facilities and those that do not handle antibiotics should be certified as no medication facilities and facilities which handle antibiotics but do not have dedicated manufacturing lines should not be certified as such. There must be improved traceability in the production chain.

4.3.2.2 Growth - Promoting Hormones

As a general practice in SA, hormones are not added into animal feeds with few exceptions. There is a global trend to restrict the use of hormones in animal feed. The use of hormones in animal feeds must be outlawed and phased out over a specified period of time.

4.4 Non-conventional sources of animal feed ingredients

The industries that wish to market the non-conventional sources of animal feed should realise that they are producing a feed for food products and have an obligation to produce a safe and wholesome products. In order to do this the source, the ingredients and the quality of the ingredient used should be considered and they must also ensure that these do not result in products that will cause contamination of the feed, feed ingredient or animal tissue. The technology on processing and application of these products must be regulated in order to address the efficacy and safety factors associated with these products during processing and throughout the production chain.

4.5 Labeling of animal feeds

In order to address issues of feed safety and also consumer preferences labeling requirements must be reviewed. There must be specific labeling regulations for products containing specific protein sources, GMOs, medication and other additives. This will enable animal feed consumers to produce specific products that will conform to the requirements of their clients and also improve consumer confidence.

4.6 Rendering plants

The rendering plants will be licensed under the feeds Act. The inspection of rendering plants will be done by state veterinary officials and the agricultural production inputs inspectorate.

4.7 Animal feed and feeding waste

Guidelines that will describe the practices for using, storing and managing waste from the process of manufacturing animal feed and feeding should be developed. This should result in waste resulting from the manufacturing process and feeding of animals being handled in an environmentally sound manner.

4.8 Import and export of animal feeds

Legislation on animal feeds must clearly state that no importation or use of products which are controlled under the Animal Disease Act, Agriculture Pests Act and Genetically Modified Organism Act will be permitted in SA, unless there is evidence that the criteria laid down by these Acts have been met. There is no need to set up import standards for animal feeds apart from the local standards as this will hamper product development and use in the animal feed sector. However, new products should continuously be evaluated before importation is granted. All import permits issued must be for that specific consignment only.

4.9 Socio-economic issues

As a major stakeholder, Government will have to take a leading role in addressing the following issues.

4.9.1 Access to animal feed

The strategic plan of the Department of Agriculture identifies a number of core and complementary strategies that should be initiated to promote the strategic objective of "equitable access and participation in a globally competitive, profitable and sustainable agricultural sector contributing to a better life for all". The animal feed legislation and the regulations promulgated under that legislation should take the following factors into consideration:

- Promote equitable access of animal feeds for agricultural development by ensuring availability and affordability to all sectors of society and promote black entrants into agriculture.
- Promote sustainable natural resources use and sustainable resource management.

4.9.2 Animal feed manufacturers

Currently the industry in collaboration with government is in a process of developing a code of good practice for animal feed manufactures. It is important that this code be legislated by government. This will ensure that all animal feed manufacturers adhere to good manufacturing practices and also improve the level of compliance in the industry. Secondly the inspection service must be capacitated with the necessary skills and resources in order to effectively enforce the law within the animal feed regulatory framework.

4.9.3 The farming community

Government has come up with a number of strategies which are intended to support emerging farmers. It is important that all the role players in the animal feed sector give their support to these programs.

4.9.4 Public perception on feed safety

The general public sometimes develops misconceptions about the safety of animal feeds which are unfounded. It is the responsibility of government through the media and other intervention programs like the comprehensive agricultural support program to ensure that the public is informed at all times.

5. ORGANISATION AND ADMINISTRATION

The Department of Agriculture will be the primary authority that will regulate the licensing of feed manufacturers and registration of additives. An officer of the state will be appointed to administer the Feeds Act. This will include looking at the resources required by Government in order to effectively implement the new Act.

6. REFERENCES

Department of Agriculture, Agricultural Product Standards Act (Act 119 of 1990).

Department of Agriculture, Strategic Plan for the Department of Agriculture, South Africa, 2004.

Department of Agriculture, The Fertilizers, Farm Feeds, Agricultural Remedies and Stock Remedies Act, 1947 (Act No. 36 of 1947).

Department of Agriculture, The strategic Plan for South African Agriculture, South Africa 2001.

Department of Agriculture, Animal Health Act, 2002 (Act 7 of 2002).

Department of Agriculture, Meat Safety Act, 2000 (Act 40 of 2000).

Department of Agriculture, Genetically Modified Organisms Act, 1997 (Act No. 15 of 1997).

Department of Environmental Affairs and Tourism, National Environmental Management Act, 1998 (Act 107 of 1998).

Department of Environmental Affairs and tourism, National Environmental Management: Air Quality Act, 2004 (Act 39 of 2004).

Department of Health, Medicine and Related Substance Control Act, 1965 (Act 101 of 1965).

Department of Justice, The Constitution of the Republic of South Africa, Act 1996 (Act No. 108 of 1996).

Regulation of the European Parliament and of the Council, Brussels.COM, 2003.(COD 2003/0071).

Department of Water Affairs and Forestry, National Water Act, 1998 (Act No. 36 of 1998).

7. POLICY OWNER

Directorate,: Food safety and Quality Assurance.
National Department of Agriculture.

A. ANNEXURE 1**DEFINITIONS/GLOSSARY OF TERMS**

Animal Feed – any raw material or mixed in a proportional manner and intended for consumption by animals. Animal Feed has the same meaning as livestock feed, farm feed or any words of similar connotation.

Antibiotics means any antimicrobials produced by, or derived from a micro organism which destroys or inhibits the growth of other micro organisms.

Feed additives means substances, micro-organisms or preparations, other than feed material and premixtures, which are intentionally added to feed in order to favourably affect the characteristics of feed, animal production, colour of ornamental fish and birds, satisfy nutritional needs of animals, environmental consequence of animal production, digestibility of feedingstuffs, gastro-intestinal flora or have coccidiostatic or histomonostatic effect.

Feed ingredient means a product of vegetable or animal origin, in its natural state, fresh or preserved, and a product derived from the industrial processing thereof, and an organic or inorganic substance, whether or not containing additives, which is intended for use in oral animal feeding, either directly as such or after processing, in the preparation of animal feeds or as a carrier of premixtures. Feed ingredient has the same meaning as ingredient, raw material, feed material, feedstuff or any words of similar connotation.

Growth hormones are natural or synthetic substance that stimulates activities or releases certain substances in the body that regulate growth of an animal.

Mycotoxins are a group of secondary metabolites produced by certain fungi that grow in certain food material in the field and during storage.

Pet Food means any commercial feed prepared and distributed for consumption by pets.

Pets means domesticated animals normally maintained in or near the household(s) of the owners thereof and are used as companions of man/human beings.

Traceability means the ability to trace and follow a feed product or any substance intended to be, or expected to be incorporated into a feed product through all stages of production, packing, processing, handling and distribution.

B. ANNEXURE 2**ACRONYMS/ABBREVIATIONS**

API	Agricultural Production Inputs
DoA	Department of Agriculture
GMO	Genetically Modified Organism
GMP	Good Manufacturing Practice