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**Pig feed premixes — Specification**



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*Draft ARSO Standard for Public Review*

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This African Standard was prepared by ARSO/TC 17, *Animal feeding, feeds and feeding stuffs*.

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## Pig feed premixes — Specification

### 1 Scope

This Draft African Standard specifies the requirements, sampling and test methods for pig feed premixes.

### 2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

AOAC 945.74, *Pantothenic Acid in Vitamin Preparations - Microbiological Methods*

AOAC 961.14, *Niacin and Niacinamide in Drugs, Foods, and Feeds - Colorimetric Method*

AOAC 968.17, *Butylated hydroxy anisole and butylated hydroxytoluene in cereals. Gas chromatographic method*

AOAC 970.65, *Riboflavin (Vitamin B2) in Foods and Vitamin Preparations*

AOAC 974.30, *Menadione Sodium Bisulfite (Water-Soluble Vitamin K3) in Feed Premixes -Gas Chromatographic Method*

AOAC 996.16, *Selenium in Feeds and Premixes*

AOAC 952.20, *Cobalamin (Vitamin B12 Activity) in Vitamin Preparations. Microbiological Methods*

FDARS 2139 *Code of practice on good animal feeding*

FDARS 1828, *Animal feeds — Code of practice for production, processing, storage, transport, and distribution*

ISO 27085, *Animal feeding stuffs — Determination of calcium, sodium, phosphorus, magnesium, potassium, iron, zinc, copper, manganese, cobalt, molybdenum, arsenic, lead and cadmium by ICP-AES*

ISO 6867, *Animal feeding stuffs — Determination of vitamin E content — Method using high-performance liquid chromatography*

ISO 14565, *Animal feeding stuffs — Determination of vitamin A content — Method using high-performance liquid chromatography*

ISO 6497, *Animal feeding stuffs — Sampling*

### 3 Terms and definitions

For the purposes of this African Standard, the following terms and definitions apply.

#### 3.1

##### **premix**

uniform mixture of one or more micro ingredients, (vitamins and / or micro minerals)/feed additives with a diluent and /or carrier and that is not intended for direct feeding to animals

#### 3.2

##### **pig creep-feed**

feed suitable for piglets up to weaning and weighing up to 20 kg body weight

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## 3.3

### **pig starter**

### **pig weaner**

feed suitable for pigs after weaning

## 3.3

### **pig grower feed**

feed intended for growing pigs from approximately eight weeks until they have reached a body weight of approximately 55 kg

## 3.4

### **pig finishing feed**

feed intended and suitable for fattening pigs weighing over 55 kg body weight and are intended for slaughter

## 3.5

### **pig breeder feed**

feed intended for breeding pigs of both sexes and of more than 55 kg body weight

## 3.6

### **sow**

female pig which have farrowed at least once

## 4 Requirements

### 4.1 General requirements

4.1.1 Pig feed premixes shall be a powder, granular or liquid concentrate.

4.1.2 Pig feed premixes shall be free from:

- a) metallic and glass objects;
- b) adulterants;
- c) physical moulds;
- d) pathogens or insect infestation;
- e) mustiness;
- f) rancidity; and
- g) any objectionable odours.

Annex A provides further information on common ingredients that may be used in producing pig feed premixes

### 4.3 Specific requirements

Pig feed premixes shall comply with the Vitamins and Micro minerals in pig for growth, maintenance and production as specified in Table 1.

**Table 1 — Minimum Vitamins and Micro - minerals requirements of pig feed premix per kilogram of feed**

S/No.	Parameter	Creep feed	Grower	Finisher	Breeder	Test method
i.	Selenium, mg	0,2	0,2	0,2	0,2	AOAC 996.16
ii.	Manganese, mg	30	30	20	20	ISO 27085
iii.	Iodine, mg	1	0,5	0.5	20	AOAC. 59:491-494.8
	Zinc, mg	50	100	100	100	

iv.	Iron, mg	100	8,0	125	80	ISO 27085
v.	Copper, mg	200	14	20	20	
vi.	Cobalt, mg	5	0,3	0,3	0,3	
vii.	Vitamin A, IU	10	10	8	12	ISO 14565
viii.	Vitamin B2,IU	15	5	5	5	AOAC 970.65
ix.	Vitamin B3	15	15	15	15	AOAC 961.14
x.	Vitamin B5	10	10	10	10	AOAC 945.74
xi.	Vitamin B12	0,01	0,01	0,01	0,01	AOAC 952.20
xii.	Vitamin E	10	10	5	20	ISO 6867
xiii.	Vitamin K	2	2	1	3	AOAC 974.30
xiv.	Antioxidant (BHT)3	0,125	0,125	0,125	0,125	AOAC 968.17

## 5 Contaminants

### 5.1 Heavy metals

Pig feed premixes shall comply with the heavy metal limits specified in Table 2 when tested in accordance with the methods specified therein.

**Table 2 — Heavy metal limits for pig feed premixes**

S/No.	Heavy metal	Maximum limit mg/kg	Test method
i.	Mercury (Hg)	0,1	ISO 27085
ii.	Lead (Pb)	5,0	
iii.	Arsenic (As)	2,0	
iv.	Cadmium (Cd)	1,0	

## 6 Hygiene, storage, receiving and transportation

Pig feed premixes shall be handled and prepared in accordance with **FDARS 2139 and FDARS 1828**.

### 7. Packaging and labelling

#### 7.1 Packaging

**7.1.1** Pig feed premix shall be packaged in clean food grade containers which are of sufficient strength and sufficiently sealed so as to withstand reasonable handling without tearing, bursting or falling open during normal handling and transportation.

**7.1.2** The containers shall be free from parasites and any disease-causing agents.

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**7.1.3** Containers for pig feed premix shall be clean and free from visible indications of contamination.

### 7.2 Labelling

Each package for pig feed premix shall be legibly and indelibly marked with the following information:

- a) type of premix;
- b) name and physical address of the manufacturer;
- c) country of origin;
- d) the manufacturer's trademark if any;
- e) batch or code number;
- f) net weight in SI units;
- g) date of manufacture;
- h) expiry date;
- i) inclusion rates;
- j) nutrient composition;
- k) storage conditions;
- l) indication of medication (if any);
- m) indication of additives (if any);
- n) instructions for use; and

### 8 Sampling

Sampling shall be done in accordance with the requirements of ISO 6497.

## Annex A (informative)

Recommended ingredients available for making premixes

### A.1 List of vitamins

- 1) Vitamin A 500
- 2) Vitamin AD3 500/100
- 3) Vitamin AD3 1000/200
- 4) Vitamin D3
- 5) Vitamin E50
- 6) Vitamin K3
- 7) Vitamin B2 Riboflavin
- 8) Vitamin B12
- 9) Vitamin b6
- 10) Nicotinic Acid
- 11) Nicotinamide
- 12) Folic acid (45 %, 95 %)
- 13) Calcium Pantothenate (80 %, 98 %)
- 14) Biotin (2 %, 5 %, 10 %)
- 15) Thiamine
- 16) Vitamin C
- 17) Choline chloride (50 %, 60 %, 70 % and 80 %)

### A.2 List of micro minerals compounds

- 1) Potassium Iodates
- 2) Copper Sulphate (Feed grade)
- 3) Manganese oxide
- 4) Manganese Sulphate
- 5) Zinc oxide
- 6) Zinc Sulphate
- 7) Ferrous Carbonate
- 8) Ferrous Sulphate
- 9) Sodium Selenite
- 10) Cobalt
- 11) Organic copper
- 12) Organic manganese
- 13) Organic zinc
- 14) Organic selenium

### A.3 Antioxidants

- 1) Butylated Hydroxy Toluene (BHT)
- 2) Butylated Hydroxyl Anasole (BHA)

### A.4 Dust control agents

- 1) Mineral oil
- 2) Vegetable oil

### A.5 Carriers

- 1) Wheat offal
- 2) Ground rice husk

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- 3) Limestone
- 4) Water for liquid premixes

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