# AFRICAN STANDARD

# DARS 1835

First Edition 2024



## Dog foods — Specification

Reference No. CD-ARS 1835: 2024(E)
ICS 65.120

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## Foreword

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



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# Dog food — Specification

## 1 Scope

This Draft African Standard specifies the requirements, sampling and test methods for dog foods.

## 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

CAC/RCP 1*, General Principles of Food Hygiene*

ISO 5510, *Animal feeding stuffs — Determination of available lysine*

ISO 6491, *Animal feeding stuffs — Determination of phosphorus content — Spectrometric method*

ISO 6492, *Animal feeding stuffs — Determination of fat content*

ISO 6497, *Animal feeding stuffs — Sampling*

ISO 6869, *Animal feeding stuffs — Determination of the contents of calcium, copper, iron, magnesium, manganese, potassium, sodium and zinc — Method using atomic absorption spectrometry*

ISO 13903, *Animal feeding stuffs — Determination of amino acids content*

ISO 6495, *Animal feeding stuffs — Determination of water-soluble chlorides content*

ISO/TS 17764-2, Animal feeding stuffs — Determination of the content of fatty acids

Codex Stan 192, General standard for food additives

ISO 12966-4, Animal and vegetable fats and oils — Gas chromatography of fatty acid methyl esters — Part 4: Determination by capillary gas chromatography

## 3 Terms and definitions

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

**3.1**
**crude fibre**
residue obtained after acid and alkaline digestion of a cat food sample that contains cellulose, hemicellulose and lignin

**3.2**
**crude fat**
total fat content of cat food determined by a laboratory test

**3.3**
**metabolizable energy**
amount of the useful energy in cat food that represents that portion of the food gross energy not lost in feaces, urine and gaseous products of fermentation (calculated from chemical composition)

**3.4**
**total ash**
inorganic part of a dog food, consisting of mineral elements determined in a laboratory by incineration at a high temperature and weighing the residue



 

**3.5**
**acid insoluble ash**
measure of the mineral matter of the feed

**3.6**
**minerals**
measure of the content of individual minerals in a feed

**3.7**
**moisture content**
water that is a component of the feed
**3.8**
**additive**
any substance not normally consumed as feed by itself and not normally used as a typical ingredient in animal feeds whether or not it has nutritive value, for example, coccidiostat, antibiotic and antioxidant

**3.9**
**antioxidant**
substance added to feeds to protect polyunsaturated fatty acids and fat soluble vitamins from destruction by peroxidation

**3.10**
**crude protein**
total protein available in the feed

# 4 Requirements

## 4.1 General requirements

**4.1.1** Dog foods may be in form of dry, semi-moist.

**4.1.2** Dog food shall be palatable.

**4.1.3** Dog foods 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 other objectionable odours.

## 4.2 Ingredients for dog food

**4.2.1** All ingredients and raw materials shall be of high quality and shall be of sound condition and not deteriorated.

**4.2.2** Where standards have been declared for ingredients or raw materials, such ingredients or raw materials shall conform to such standards. Annex C provides further information on the ingredients that may be used in dog food.

**4.2.3** Vitamin preparations added to food shall be in a stabilised form.



 

## 5 Specific requirements

Dog food shall comply with the nutrient requirements specified in Table 1 when tested with the test methods specified therein.

**Table 1 — Specific nutrient requirements for dog food**

| Nutrient | Dog food | | | | Test method |
|---|---|---|---|---|---|
| | Puppy (0-4 weeks) | Grower (Over 14 weeks) | Pregnant and lactating | Adult and maintenance | |
| ME, Kcal/kg, min. | 4000 | 4000 | 4000 | 4000 | Annex D |
| Crude protein, min. % | 25 | 20 | 22 | 12 | ISO 16634 |
| Crude fat, min. % | 8.5 | 8.5 | 8.5 | 5.5 | ISO 6492 |
| Linoleic acid, % | 1.3 | 1.3 | 1.3 | 1.1 | ISO 12966-4 |
| Arginine, % | 0.79 | 0.66 | 1 | 0.35 | ISO 13903 |
| Histidine, % | 0.39 | 0.25 | 0.44 | 0.19 | |
| Isoleucine, % | 0.65 | 0.5 | 0.71 | 0.38 | |
| Leucine, % | 0.35 | 0.26 | 0.31 | 0.33 | |
| Lysine, % | 0.7 | 0.53 | 0.62 | 0.65 | ISO 5510 |
| Methionine | 1.29 | 0.82 | 2 | 0.68 | ISO 13903 |
| Methionine +cysteine , % | 0.88 | 0.7 | 0.9 | 0.35 | |
| Phenyl alanine, % | 0.65 | 0.5 | 0.83 | 0.45 | |
| Phenyl alanine + tyrosine , % | 1.3 | 1 | 1.23 | 0.74 | |
| Threonine, % | 0.81 | 0.64 | 1.04 | 0.43 | |
| Tryptophan, % | 0.23 | 0.21 | 0.12 | 0.14 | |
| Valine, % | 0.68 | 0.56 | 1.3 | 0.49 | |
| Calcium, % | 1 | 1 | 1 | 0.3 | ISO 27085 |
| Phosphorus, % | 0.9 | 0.9 | 0.9 | 0.3 | ISO 6491 |
| Sodium, % | 0.22 | 0.22 | 0.22 | 0.1 | ISO 6869 |
| Potassium, % | 0.44 | 0.44 | 0.44 | 0.44 | ISO 6869 |
| Chloride, % | 0.33 | 0.33 | 0.33 | 0.15 | ISO 6495 |

Note: The level of free fatty acids in cat foods shall not exceed 15 % of the crude fat content at the time of manufacture, when tested in accordance with the requirements of ISO/TS 17764-2. Annex A provides further information on the micronutrient requirements for cat food.

## 6 Food additives

**6.1** Flavours and colours used in dog food shall be of a natural source.

**6.2** Food additives used in dog food shall conform to the requirements specified in Codex Stan 192.

## 7 Hygiene, receiving, storage and transportation

Dog food shall be produced, transported, received and stored in accordance with the procedure described in the appropriate sections of CAC/RCP 1

## 8 Packaging and labelling

### 8.1 Packaging

Dog foods for sale shall be packaged in containers that are of sufficient strength, and sufficiently sealed so as to withstand reasonable handling without tearing, bursting or falling open. The containers shall be clean and not previously used.



 

## 8.2 Labelling

In addition to the requirements of ARS 56, Each package of dog food shall be legibly and indelibly marked with the following information:

a) name and type of the dog food;
b) name and physical address of manufacturer;
c) nutrient composition;
d) net weight in SI Units;
e) batch or lot number;
f) directions and precautions for use;
g) list of food ingredients;
h) date of manufacture; and
i) best before.

## 9 Sampling

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



 

# Annex A
# (informative)

## Micronutrient requirement for dog food

**Table A.1 — Micronutrient requirements for dog food**

| Nutrient | Puppy (0-4 weeks) | Grower (Over 14 weeks) | Pregnant and lactating | Adult and maintenance |
|---|---|---|---|---|
| Vitamin A, IU | 5000 | 5000 | 5000 | 5000 |
| Vitamin D, IU | 550 | 550 | 550 | 550 |
| Vitamin E, mg | 50 | 50 | 50 | 50 |
| Vitamin B1, mg | 1.4 | 1.4 | 2.3 | 1.4 |
| Vitamin B2, mg | 5.3 | 5.3 | 6 | 5.3 |
| Vitamin B6, mg | 1.5 | 1.5 | 1.5 | 1.5 |
| Vitamin B3, mg | 17 | 17 | 17 | 17 |
| Vitamin B5, mg | 15 | 15 | 15 | 15 |
| Vitamin B12, mg | 35 | 35 | 35 | 35 |
| Vitamin B9, mg | 270 | 270 | 270 | 270 |
| Choline, mg | 1700 | 1700 | 1700 | 1700 |
| Iron, mg | 88 | 88 | 88 | 70 |
| Copper, mg | 11 | 11 | 12 | 7 |
| Zinc, mg | 100 | 100 | 100 | 70 |
| Manganese, mg | 6 | 6 | 6 | 6 |
| Selenium, mg | 350 | 350 | 350 | 350 |
| Iodine, mg | 1500 | 1500 | 1100 | 1500 |

## Annex B
## (Informative)

## Tolerance limits on analytical constituents in dog food

| Analytical constituents | Limits of variation (% by weight except where otherwise stated) |
|---|---|
| Ash | If present in excess<br>1.5 % for all declarations<br>If case deficiency<br>4.5 % for all declarations |
| Calcium | If present in excess<br>3.6 % for declaration of 15 % or more<br>22.5 % for the amount stated for declarations 12 % or more but less than 16 %<br>0.9 % for declarations of 6 % or more but less than 12 %.<br>15 % for the amount stated for declarations 1 % or more but less than 6 %<br>0.15 % for declarations of less than 1 %. |
| Fibre | If present in excess:<br>1 % for all declarations |
| Moisture | If present in excess<br>3 % for declaration of 40 % or more<br>7.55 % of the amount stated for declarations 20 % or more but less than 40 % 1.5 % for declarations of less than 20 %. |
| Oil | If present in excess 3 % for all declaration |
| Phosphates | If present in excess<br>3.6 % for declaration of 16 % or more<br>2.25 % of the amount stated for declarations 12 %<br>27 % of the amount stated for declarations 6 % or more but less than 12 %<br>4.5 % of the amount stated for declarations 1 % or more but less than 6 %<br>0.45 % for declarations of less than 1 %.<br>In case of deficiency<br>3.2 % for declaration of 20 % or more<br>16 % of the amount stated for declarations of 12.5 % or more but less than 20 %<br>2 % for declarations less than 12.5 % |
| Sodium | If present in excess<br>4.5 % for declaration of 15 % or more<br>30 % of the amount stated for declarations 7.5 % or more but less than 15 %<br>2.25 % of the amount stated for declarations 5 % or more but less than 7.5 %<br>45 % for declarations of 0.7 % or more but less than 5 %.<br>0.3 % for declarations less than 0.7 %<br>In case of deficiency<br>1.5 % for declaration of 15 % or more<br>10 % of the amount stated for declarations of 7.5 % or more but less than 15 %<br>0.75 % of the amount stated for declarations of 5 % or more but less than 7.5 %<br>15 % of the amount stated for declarations of 0.5 % or more but less than 5 %<br>0.15 % for declarations less than 0.7 % |
| Cobalt | ±50 % of the amount stated for declarations above 200 mg/kg |
| Copper | ±30 of the amount stated for declarations above 200 mg/kg<br>±50 of the amount stated for declarations up to an including 200 mg/kg |
| Iodine | ±50 % of the amount stated for declarations of 250 mg/kg or more |
| Iron | ±50 % of the amount stated for declarations less than 250 mg/kg |
| Manganese | ±50 % of the amount stated |



 

| | |
|---|---|
| Molybdenum | ±50 % of the amount stated |
| Selenium | ±50 % of the amount stated |
| Zinc | ±50 % of the amount stated |
| Vitamin D2 and D 3 | ±30 of the amount stated for declarations above 4000 IU/kg<br>±50 of the amount stated for declarations up to an including 4000 IU/kg |
| Vitamins other than D2 and D 3 | In case of deficiency ± 30 % of the amount stated |



 

**Annex C**
**(informative)**

## Ingredients for dog food

The following ingredients may be used in the manufacture of dog foods:

a) grain products include:
   i. maize flour;
   ii. wheat flour;
   iii. wheat pollard;
   iv. oat flour;
   v. barley;
   vi. wheat bran;
   vii. wheat grain;
   viii. millet;
   ix. rice;
   x. sorghum;
   xi. maize gluten meal; and
   xii. maize bran.

b) animal products include:
   i. bone meal;
   ii. meat/bone meal;
   iii. offal meal (treated);
   iv. blood meal;
   v. meat meal;
   vi. dried skim milk;
   vii. poultry by-products (excluding manure);
   viii. dry whey;
   ix. cheese meal;
   x. hydrolyzed feather meal;
   xi. whole milk; and
   xii. fish meal.

c) soybean meal, alfalfa meal, potatoes other than cereals may be used as ingredients in the manufacture of dog food.

**Annex D**
**Method for calculating metabolizable energy for dog food**

ME in dog food {Kcal/100g} = GE {Kcal/100g} × $(\frac{91.2-[1.43\times CF\{\%\}]}{100})$ – (1.04× CP {%})

ME in dog food {Kcal/100g} = GE {Kcal/100g} × $(\frac{96.6-[0.95\times TDF\{\%\}]}{100})$ – (1.04× CP {%})

GE= (kcal/100g) = (5.7 x protein) + (9.4 x fat) + (4.1 x [NFE + CF])

Where
CF – Crude fibre
CP - Crude protein
TDF – Total dietary fibre