STANDARDIZATION ORGANIZATION FOR G.C.C (GSO)

مشروع: نهائي

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الأعلاف الحيوانية – أعلاف ماشية الحليب

ANIMAL FEEDINGSTUFFS – FEEDS FOR DAIRY CATTLE

إعداد

اللجنة الفنية الخليجية لقطاع مواصفات المنتجات الغذائية والزراعية

هذه الوثيقة مشروع لمواصفة قياسية خليجية تم توزيعها لإبداء الرأي والملاحظات بشأنها، لذلك فإنها عرضة للتغيير والتبديل، ولا يجوز الرجوع إليها كمواصفة قياسية خليجية إلا بعد اعتمادها من مجلس إدارة الهيئة الخليجية.

Foreword

Standardization Organization for GCC (GSO) is a regional Organization which consists of the National Standards Bodies of GCC member States. One of GSO main functions is to issue Gulf Standards /Technical regulation through specialized technical committees (TCs).

GSO through the technical program of committee TC No.:.5... "food and agriculture committee " has prepared this Standard . The Draft Standard has been prepared by (kingdome of saudi arabia)

The draft Standard has been prepared based on relevant ADMO, International and National foreign Standards and references.

This standard has been approved as Gulf (Standard / Technical Regulation) by GSO Board of Directors in its meeting No..../.... …….held on / / / H , / / G

ANIMAL FEEDINGSTUFFS – FEEDS FOR DAIRY CATTLE

Date of GSO Board of Directors' Approval :
Issuing Status :

ANIMAL FEEDINGSTUFFS – FEEDS FOR DAIRY CATTLE

1- SCOPE AND FIELD OF APPLICATION

This standard is concerned with finished feeds for dairy cattle. The nutrient requirements refer to complete (roughages and concentrates) ration.

2- COMPLEMENTARY REFERENCES

2.1 GSO 20 "Methods for Determination of Contaminating Metallic Elements in Foodstuffs".

2.2 GSO 325 "Animal Feeding Stuffs – Determination of Aflatoxin B_1 Content".

2.3 GSO 326 "Animal Feeding Stuffs – Determination of Total Phosphorous Content – Spectrophotometric Method".

2.4 GSO 330 "Animal Feeding Stuffs – Determination of Water Soluble Chlorides Content".

2.5 GSO 362 "Animal Feeding Stuffs – Determination of Calcium Content - Part 2: Atomic Absorption Spectrophotometric Method".

2.6 GSO 382 "Maximum Limits for Pesticide Residue in Agricultural Food Products – Part 1".

2.7 GSO 383 "Maximum Limits for Pesticide Residue in Agricultural Food Products – Part 2".

2.8 GSO 523 "Guide to the Safe Use of Feed Additives for Livestock and Poultry Feeds".

2.9 GSO 703 "Animal Feeding Stuffs – Preparation of Test Samples".

2.10 GSO 999 "Methods of Sampling for Animal Feeding Stuffs".

2.11 Gulf standards which GSO issue concerning with testing methods for feeds:

2.11.1 GSO …Determination of crude acid detergent fiber content (ADF).

2.11.2 GSO …Detection of pesticide residues, antibiotics and hormones.

2.11.3 GSO …Detection of Salmonella, Bacillus Anthrax and Chlostridium Butulinum.

2.11.4 GSO …Count of coliform bacteria.

2.11.5 GSO …Detection of urea.

2.11.6 GSO …Determination of metabolizable energy.

2.11.7 GSO …Determination of the following Vitamins: A, D and E.

2.11.8 GSO …."Animal Feeding Stuffs - Determination of Diethyl Ether Extract".

2.11.9 GSO …. "Animal Feeding Stuffs – Determination of Moisture Content.

2.11.10 GSO …. "Animal Feeding Stuffs – Determination of Nitrogen Content and Calculation of Crude Protein Content".

3- DEFINITIONS

3.1 Concentrates, they include:

3.1.1 Simple: Such as bran, barley, corn, soya bean powder, etc.

3.1.2 Compound: A mixture of simple (3.1.1) to which are added specific mixtures of mineral salts, vitamins, amino acids and any allowed nutritional additives at known ratios. It is processed in a suitable and hygienic manner and in the appropriate physical form.

3.2 Roughages: Such as alfalfa, (green and hay); sudan hay; oat hay; wheat straw, beet pulp; citrus pulp, ... etc.

3.3 Finished feed: Mixture of concentrates and roughages to form the complete ration which contains all nutrition requirements taking into consideration the minerals content of drinking water used for the animals.

4- TYPES

4.1 Dairy Cows Rations: Rations fed to dairy cows which are grouped according to cow's weight and daily milk yield.

4.2 Non-dairy cattle rations:

4.2.1 Dry pregnant cows ration.

4.2.2 Mature bulls ration.

4.2.3 Growing Heifers and Bulls Ration and Ration fed to heifers of more than 16 weeks and growing bulls.

4.2.4 Calf Starter Ration: Ration fed to calves from 2 weeks to 16 weeks.

4.2.5 Calf Milk Replacer Ration (milk substitute meal): Ration fed to baby calves in lieu of milk from the age of approximately one week to 2 weeks.

4.2.6 Fattening ration.

5- PROPERTIES

The following properties shall be met in feedstuffs used for dairy cattle:

5.1 All feedstuffs used in dairy cattle rations (roughages and concentrates, mineral sources .... etc.) shall comply with the relevant Gulf standards.

5.2 It shall be free from harmful constituents and extraneous matter.

5.3 It shall be free from fermented, musty, rancid or any other objectionable odour.

5.4 It shall be free from insects and pathogenic micro-organisms (Salmonella, Bacillus Anthrax Clostridium Botulinum and Asprigelus).

5.5 Pesticide residues in food products shall comply with the Gulf standard mentioned in 2.6 and 2.7.

5.6 Afflatoxins shall not exceed 50 ppp in simple feedstuffs and 20 ppp in complementary feedstuffs for dairy cattle.

5.7 Addition of the following substances are permitted in appropriate amounts according to good manufacturing practices without prejudice to the Gulf standard mentioned in 2.8:

- Anti-oxidants.
- Buffers [for dairy cows rations].
- Protected fat [for dairy cows rations].
- Mould growth inhibitors: or any other permitted substances having nutritional value.

5.8 Not more than 1% w/w of the total compound concentrate shall be in the form of urea (or non-protein nitrogenous compounds) for cattle except newly born calf or weanling calfs.

5.9 Use of anabolic agents such as hormone compounds are not permissible.

5.10 Addition of internationally permitted antibiotics are not permissible except for remedy purposes and with a veterinary prescription. In this case the produced milk shall not be used and it shall be disposed of.

5.11 Total coliform count in concentrates (simple or compound) shall not exceed 2 x 10^3/g.

5.12 Complete ration shall be in appropriate physical form.

5.13 Moisture content of the concentrates (simple or compound) shall not exceed 12%.

5.14 Recommended nutrient concentrations in the ration dry matter for lactating cows are included in the table.

TABLE

Recommended Nutrient Content of Rations for Dairy Cattle

Nutrient Content [Concentration in the feed Dry Matter]	Dairy Cow Rations					Non-Dairy Cattle Rations						Maximum Concentration (All Classes)
	Cow Weight	Dairy Milk Yields				Non-dairy Pregnant Cows	Mature Bulls	Growing Heifers and Bulls	Calf Starter Concen-trate mix	Cow Milk Substitute	Fat Ration	
	≤ 400 500 600 ≥ 700	< 8 < 11 < 14 < 18	8-13 11-17 14-21 18-26	13-18 17-23 21-29 26-35	> 18 > 23 > 29 > 35							
Ration No.		1	2	3	4	5	6	7	8	9	10	Maximum
Moisture % max.		12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	
° Crude Protein % (min.)		13.0	14.0	15.0	16.0	11.0	8.5	12.0	12.0	22.0	15.60	
° Metabolizable Energy Mca/Kg (min.)		2.36	2.53	2.71	2.89	2.23	2.04	2.23	3.12	3.78	3.10	
° Crude Fibers % (min.) or ADF 21%		17	17	17	17	17	15	15	-	-	15.00	
Crude Fat (Ether Extract) % (min.)		2	2	2	2	2	2	2	2	10	2.5	
Non-Nitrogenous Protein max.		2	2	2	2	2	2	2	-	-	2.00	
Acid Insoluble Ash % max.		4.00	4.00	4.00	4.00	4.00	4.00	4.00	-	-	4.00	
Total Ash % max.		8.00	8.00	8.00	8.00	8.00	8.00	8.00	-	-	10.00	
° Minerals (minimum)												
Calcium %		0.43	0.48	0.54	0.60	0.37	0.24	0.40	0.60	0.70	0.76	
Phosphorous %		0.31	0.34	0.38	0.40	0.26	0.18	0.26	0.42	0.50	0.54	
Magnesium %		0.20	0.20	0.20	0.20	0.16	0.16	0.16	0.07	0.07	0.20	
Potassium %		0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	
Sodium %		0.18	0.18	0.18	0.18	0.10	0.10	0.10	0.10	0.10	0.18	
Sodium Bicarbonate %		1.00	1.00	1.00	1.00	1.00	1.00	1.00	-	-	1.00	2
Sodium Chloride %		0.46	0.46	0.46	0.46	0.25	0.25	0.25	0.25	0.25	0.25	5
Sulfur %		0.20	0.20	0.20	0.20	0.17	0.11	0.16	0.21	0.29	0.21	0.35
Iron, ppm		50	50	50	50	50	50	50	100	100	100	1000
Cobalt, ppm		0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.10	10

TABLE (Continue)

Recommended Nutrient Content of Rations for Dairy Cattle

Copper, ppm	10	10	10	10	10	10	10	10	10	10	80
Manganese, ppm	40	40	40	40	40	40	40	40	40	40	1000
Zinc, ppm	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	400
Iodine, ppm	0.50	0.50	0.50	0.50	0.50	0.25	0.25	0.25	0.25	0.25	8
Molybdenum, ppm	-	-	-	-	-	-	-	-	-	-	6
Selenium, ppm	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	5
Fluorine, ppm	-	-	-	-	-	-	-	-	-	-	30
° Vitamins (minimum)											
Vitamin A (IU/Kg)	3200	3200	3200	3200	3200	3200	3200	3200	3200	2200	
Vitamin D (IU/Kg)	300	300	300	300	300	300	300	300	600	300	
Vitamin E (mg/Kg)	-	-	-	-	-	-	-	-	30	30	
Anti-Oxidant (BHT) mg/Kg	-	-	-	-	-	-	-	-	-	-	150

5.15 The recommended minimum content of vitamins and amino acids in milk replacer ration are as follows:

Niacine	26 p.p.m.
Pantothenic acid	13 p.p.m.
Riboflavine	6.5 p.p.m.
Pyridoxine	6.5 p.p.m.
Thiamine	6.5 p.p.m.
Folic acid	0.5 p.p.m.
Biotin	0.1 p.p.m.
Vitamin B_{12}	0.07 p.p.m.
Choline	0.26 p.p.m.
Threonine	10.2 %
Valine	11.5 %
Methionine + Cystine	8.3 %
Isoleucine	16.6 %
Phenylalanine & Tyrosine	11.5 %
Lysine	16.6 %
Histidine	5.1 %
Arginine	7.0 %
Tryptophane	2.2 %
Vitamin K	5 mg/kg

6- SAMPLING

Samples shall be taken according to Gulf standard in item 2.10.

7- PREPARATION OF SAMPLES FOR TESTING

Samples shall be prepared according to Gulf standard in item 2.9.

8- METHODS OF INSPECTION AND TESTING

The following tests shall be carried out on a representative sample taken according to item (6) to determine its compliance with all the items of this standard.

8.1 Determination of moisture content

Determination of moisture content shall be carried out according to Gulf standard mentioned in (2.11.9).

8.2 Determination of crude protein

Determination of crude protein shall be carried out according to Gulf standard in (2.11.10).

8.3 Determination of crude fat content (Ether Extract)

Determination of crude fat or total lipid content shall be carried out according to Gulf standard in (2.11.8).

8.4 Determination of chloride content (as Sodium Chloride)

Determination of chloride content shall be carried out according to Gulf standard in (2.4).

8.5 Determination of calcium content

Determination of calcium content shall be carried out according to Gulf standard in (2.5).

8.6 Determination of phosphorous content

Determination of phosphorous content shall be carried out according to Gulf standard in (2.3).

8.7 Determination of metallic elements

Determination of metallic elements shall be carried out according to Gulf standard in (2.1).

8.8 Detection of Aflatoxin B_1

Detection of aflatoxin B_1 shall be carried out according to Gulf standard in (2.2).

8.9 The following tests shall be carried out according to the relevant Gulf standard issued by GSO on:

- Determination of crude fiber content
- Determination of Vitamin A, D and E
- Detection of Urea
- Detection of Pesticide, Antibiotics and Hormones residues
- Detection of Salmonella, Bacillus Anthrax and Clostridium, Botulinum
- Determination of metabolizable energy (by calculation)

9- PACKAGING, TRANSPORTATION, HANDLING AND STORAGE

9.1 Packaging

9.1.1 The bags shall be sound, clean, have not been previously used and do not affect the quality characteristics of the product.

9.1.2 It shall protect the feed from contamination and moisture.

9.1.3 It shall be well sealed and not permissible for light.

9.2 Transportation and Handling

Transportation and handling shall be carried out carefully and in such a way that protects containers from mechanical damage, contamination, high temperature and moisture.

9.3 Storage

9.3.1 It shall be stored in suitable, clean and well-ventilated stores far away from moisture, high temperature and contamination sources. The number of containers and their height shall be suitable for the storage area.

10- LABELLING

Every bag shall contain a label declaring the following information in Arabic:

10.1 Name of the feed and kind of animal fed on it.

10.2 Name of the manufacturer, his address and trade mark, if any.

10.3 Production date and expiration date in a non-coded manner (day-month-year).

10.4 Batch number.

10.5 Mass in metric units.

10.6 Minimum content of crude protein, crude fat, crude fibers metabolizable energy - calcium, phosphorous, vitamins and the maximum content of moisture, total ash - and sodium chloride in the feed.

10.7 Feed ingredients without mentioning their addition ratios (in case of compound feeds).

10.8 Added ingredients.

10.9 Guide for the method of using the feed.

10.10 Country of origin.

10.11 If urea or ammonium compounds are present, the protein equivalent must be declared.

REFERENCES

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  IS:2052 - 1979
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  JS:14 - 1977
  Finished and Concentrated Feeds
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  Feeds and Feedstuff.
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