
International Standard



6490/1

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

Animal feeding stuffs — Determination of calcium content — Part 1 : Titrimetric method

Aliments des animaux — Détermination de la teneur en calcium — Partie 1 : Méthode titrimétrique

First edition — 1985-11-01

STANDARDSISO.COM : Click to view the full PDF of ISO 6490-1:1985

UDC 636.085/.087 : 543.24 : 546.41

Ref. No. ISO 6490/1-1985 (E)

Descriptors : animal feeding products, chemical analysis, determination of content, calcium, volumetric analysis.

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 6490/1 was prepared by Technical Committee ISO/TC 34, *Agricultural food products*.

Users should note that all International Standards undergo revision from time to time and that any reference made herein to any other International Standard implies its latest edition, unless otherwise stated.

Animal feeding stuffs — Determination of calcium content —

Part 1 : Titrimetric method

1 Scope and field of application

This part of ISO 6490 specifies a titrimetric method for the determination of the calcium content of animal feeding stuffs.

The method is applicable to all animal feeding stuffs having calcium contents greater than 1 g/kg.

2 References

ISO 6490/2, *Animal feeding stuffs — Determination of calcium content — Part 2: Atomic absorption spectrometric method.*

ISO 6497, *Animal feeding stuffs — Sampling.*¹⁾

ISO 6498, *Animal feeding stuffs — Preparation of test samples.*

3 Principle

Ashing of a test portion, treatment of the ash with hydrochloric acid and precipitation of the calcium as calcium oxalate. Dissolution of the precipitate in sulfuric acid and titration with standard volumetric potassium permanganate solution of the oxalic acid formed.

4 Reagents

All reagents shall be of recognized analytical quality and the water used shall be distilled water or water of at least equivalent purity.

4.1 Hydrochloric acid, approximately 30 % (m/m)
($\rho_{20} = 1,15$ g/ml).

4.2 Nitric acid, concentrated ($\rho_{20} = 1,40$ g/ml).

4.3 Sulfuric acid, approximately 20 % (m/m)
($\rho_{20} = 1,13$ g/ml).

4.4 Ammonia solution, approximately 33 % (m/m)
($\rho_{20} = 0,89$ g/ml).

4.5 Ammonium oxalate, cold saturated solution.

4.6 Citric acid monohydrate, 300 g/l solution.

4.7 Ammonium chloride, 50 g/l solution.

4.8 Bromocresol green, 0,4 g/l solution.

4.9 Potassium permanganate, standard volumetric solution, $c(1/5 \text{ KMnO}_4) = 0,1$ mol/l.

5 Apparatus

Usual laboratory apparatus, and in particular

5.1 Electric muffle furnace, with air circulation, capable of being maintained at 550 ± 20 °C.

5.2 Incineration dish, made of platinum, silica or porcelain.

5.3 Sintered glass filter crucible, of porosity grade P 16 (pore size 10 to 16 μm).

5.4 Boiling water-bath.

5.5 Beakers, of capacity 250 ml.

5.6 Volumetric flask, of capacity 250 ml.

5.7 Analytical balance.

6 Sampling

Take the laboratory sample as specified in ISO 6497.

7 Procedure

7.1 Preparation of the test sample

Prepare the test sample in accordance with ISO 6498.

7.2 Test portion

Weigh, to the nearest 1 mg, approximately 5 g of the test sample (or more if necessary), into the incineration dish (5.2).

1) At present at the stage of draft.