
**Animal feeding stuffs, cereals and milled
cereal products — Guidelines for the
application of near infrared spectrometry**

*Aliments des animaux, céréales et produits de mouture des céréales —
Lignes directrices pour l'application de la spectrométrie dans le proche
infrarouge*



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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. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

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The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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ISO 12099 was prepared by the European Committee for Standardization (CEN) Technical committee TC 327, *Animal feeding stuffs — Methods of sampling and analysis*, in collaboration with ISO Technical Committee TC 34, *Food products*, Subcommittee SC 10, *Animal feeding stuffs*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna agreement).

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Introduction

This International Standard has been drafted using, as a basis, ISO 21543|IDF 201^[15], prepared by Technical Committee ISO/TC 34, *Food products*, Subcommittee SC 5, *Milk and milk products*, and the International Dairy Federation (IDF).

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Animal feeding stuffs, cereals and milled cereal products — Guidelines for the application of near infrared spectrometry

1 Scope

This International Standard gives guidelines for the determination by near infrared spectroscopy of constituents such as moisture, fat, protein, starch, and crude fibre as well as parameters such as digestibility in animal feeding stuffs, cereals and milled cereal products.

The determinations are based on spectrometric measurement in the near infrared spectral region.

2 Terms and definitions

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

2.1

near infrared instrument

NIR instrument

apparatus which, when used under specified conditions, predicts **constituent contents** (2.3) and **technological parameters** (2.4) in a matrix through relationships to absorptions in the near infrared range

NOTE In the context of this International Standard, the matrices are animal feeding stuffs, cereals and milled cereal products.

2.2

animal feeding stuff

any substance or product, including additives, whether processed, partially processed or unprocessed, intended to be used for oral feeding to animals

EXAMPLES Raw materials, fodder, animal flour, mixed feed and other end products, and pet food.

2.3

constituent content

mass fraction of substances determined using the appropriate, standardized or validated chemical method

NOTE 1 The mass fraction is often expressed as a percentage.

NOTE 2 Examples of constituents determined include moisture, fat, protein, crude fibre, neutral detergent fibre, and acid detergent fibre. For appropriate methods, see, e.g., References [1] to [16].

2.4

technological parameter

property or functionality of a matrix that can be determined using the appropriate standardized or validated method(s)

EXAMPLE Digestibility.

NOTE 1 In the context of this International Standard, the matrices are animal feeding stuffs, cereals and milled cereal products.