International Standard 7700/1

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Check of the calibration of moisture meters — Part 1 : Moisture meters for cereals

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Foreword

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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.

International Standard ISO 7700/1 was developed by Technical Committee ISO/TC 34, *Agricultural food products*, and was circulated to the member bodies in November 1982.

It has been approved by the member bodies of the following countries :

Australia	Iraq	Portugal
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The member body of the following country expressed disapproval of the document on technical grounds :

United Kingdom

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0 Introduction

The calibration of moisture meters may, for stable samples and ideal measuring conditions, prove entirely satisfactory. On the other hand, the results obtained with the same moisture meter can be affected by many variables of cultivation, ripeness, humidity, temperature, harvesting, transport and level of impurities, particularly for cereals received with high moisture content.

1 Scope and field of application

This part of ISO 7700 specifies a method of checking the calibration of moisture meters in service for measuring the moisture content of cereal grains, by checking some values or a range covering all the values for which the moisture meter is used.

It is applicable to oats, durum wheat, wheat, maize, barley, rice, rye and sorghum.[1)]

2 References

ISO 712, *Cereals and cereal products — Determination of moisture content (Routine method).*

ISO 5223, *Test sieves for cereals.*

ISO 6540, *Maize — Determination of moisture content (on milled grains and on whole grains).*

3 Principle

Preparation of several test samples, or a range of test samples, with different moisture contents, under specified conditions, determination of their moisture contents by a reference method and measurement with the moisture meter to be checked.

4 Reagent

Use only distilled water or water of equivalent purity.

4.1 Sodium hypochlorite (bleach) solution of approximately 5,7 % (*m*/*m*) active chlorine (18 chlorometric degrees).

5 Apparatus

Usual laboratory apparatus, and in particular

5.1 Bottles, with airtight seals, of capacity approximately 2 l, cleaned with a bactericide and fungicide, such as the bleach (4.1), rinsed three times with distilled water and dried.

5.2 Apparatus required for the routine reference method of determining moisture content (see ISO 712 or ISO 6540).

5.3 Sieves, for cleaning the grain, complying with the requirements of ISO 5223, and in particular sieves with long rounded apertures of width 1,80; 2,00; and 2,24 mm and with round holes of diameter 4,50 mm, or a **mechanical separator.**

6 Procedure

6.1 Selection and cleaning of samples

Select a variety or varieties or better still a mixture of varieties of a cereal from those which are the most prevalent in the region where the moisture meter is used. In the case of maize, the choice depends on the type of grain (dent, flint, dent-flint) rather than on the variety.

Clean the samples by removing undersize material, including shrivelled grains, by manual sieving using appropriate sieves (see 5.3) and removing larger impurities by hand or using a mechanical separator (5.3).

As an indication, use the following sieves :

— sieve with long rounded apertures of width 1,80 mm for rye and durum wheat;

— sieve with long rounded apertures of width 2,00 mm for wheat;

— sieve with long rounded apertures of width 2,24 mm for barley;

— sieve with long round holes of diameter 4,50 mm for maize.

1) The case of sorghum has not been studied in depth, but it would seem that it can be put in the same catergory as maize for the preparation of test samples.