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Pulses — Determination of impurities, size, foreign odours, insects, and species and variety — Test methods

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*Légumineuses — Détermination des impuretés, des dimensions, des
odeurs étrangères, des insectes et des espèces et variétés — Méthodes
d'examen*

ISO 605:1991

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Reference number
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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.

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.

International Standard ISO 605 was prepared by Technical Committee ISO/TC 34, *Agricultural food products*.

This second edition cancels and replaces the first edition (ISO 605:1977), clause 5 and subclause 7.2 of which have been deleted.

Annex A of this International Standard is for information only.

ISO 605:1991

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Pulses — Determination of impurities, size, foreign odours, insects, and species and variety — Test methods

1 Scope

This International Standard specifies methods not given in other International Standards for testing pulses which have not been processed and which are intended for human consumption or for animal feeding stuffs.

2 Normative reference

The following standard contains provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the edition indicated was valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent edition of the standard indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 951:1979, *Pulses in bags — Sampling*.

3 Sampling

The laboratory sample shall have been taken in accordance with ISO 951.

4 Preparation of the test sample

Thoroughly mix the laboratory sample (clause 3).

5 Determination of impurities

5.1 Test portion

If necessary, reduce the test sample (clause 4) using an automatic divider or by quartering by hand, to obtain a test portion, for one determination, of at least 200 g, except for butter beans (*Phaseolus*

lunatus L.) and horse beans (*Vicia faba* L.) for which the test portion shall be at least 300 g.

NOTE 1 If the content of impurities is very small, it may be necessary to increase considerably the mass of the test portion.

5.2 Separation

Separate the test portion (5.1) into component groups in order to obtain information relevant to the use for which the lot is suitable.

Generally the test portion is separated into five groups, as follows:

- seeds typical of the species and variety (see 5.2.1);
- seeds typical of the species but of another variety (see 5.2.2);
- defective seeds belonging to the same species (see 5.2.3);
- organic impurities (see 5.2.4);
- inorganic impurities (see 5.2.5).

5.2.1 Seeds typical of the species and variety

This group includes all intact sound typical seeds, seeds with a cracked or injured seed coat, seeds slightly damaged by insects and broken typical seeds larger than one-half their original size.

This group may be subdivided if desired.

5.2.2 Seeds typical of the species but of another variety

This group includes seeds of varieties which differ significantly in shape, size, colour or appearance from the seeds of the variety under consideration.

5.2.3 Defective seeds belonging to the same species

This group includes broken, partially eaten and injured seeds equal to or less than one-half their original size, seeds markedly damaged by insects, and shrivelled, unripe, germinated, rotten, mouldy and diseased seeds.

5.2.4 Organic impurities

This group includes seed coats, parts of stems, pods, leaves, Sclerotia bodies etc., other crop seeds and weed seeds.

5.2.5 Inorganic impurities

This group includes lumps of earth, sand, dust, stones, etc.

5.3 Expression of results

Report the amount of material in each of the component groups (generally 5.2.1 to 5.2.5), as a percentage by mass of the test portion.

6 Determination of size (of pulses intended for human consumption)

6.1 Sizing

Carry out the determination of size on pulses falling within the groups described in 5.2.1 and 5.2.2.

According to the species of pulse, use sieves either with round holes (for example, for peas and lentils) or with suitable elongated holes (for example, for beans).

Weigh the amount passing through the sieve with the smallest holes, and the amounts retained on each of the sieves used.

6.2 Expression of results

Report the quantity of pulse

- retained by the sieve with the largest holes;
- in each size range defined by the upper and lower sizes of sieve aperture;
- passing through the sieve with the smallest holes.

Express each of these quantities as a percentage by mass of the test portion.

7 Tests for the presence of foreign odours

7.1 Procedure

7.1.1 Carry out the examination described in 7.1.2 or 7.1.3 (a rapid sensitive method) as soon as possible after sampling.

7.1.2 Spread out the sample and smell it. If no strong foreign odour is detected, return the sample to the container and seal it, leave it for 24 h and then re-examine the sample.

The sample may be further examined during or after grinding.

If, after these operations, no foreign odour can be detected with certainty, put about 3 g to 5 g of the ground sample into a flask of 50 ml to 100 ml capacity. Examine the ground sample heated to a temperature not higher than 60 °C by cautiously moving the open flask over a flame or repeatedly shaking it and immersing it in a water-bath.

7.1.3 Put a small quantity of the ground or unground product in a beaker, pour in some warm water (60 °C to 70 °C) and cover the beaker. After 2 min to 3 min decant the water, and note whether foreign odours are present.

7.2 Expression of results

Report the presence or absence of foreign odours.

8 Tests for infestation by insects (see also ISO 6639)

Note the presence of insect pests, especially adults or larvae of the house moth type (for example *Endrosis* or *Hofmannophila* species) or Bruchid beetles, either on sacks or within the bulk of the product.

8.1 Test for visible infestation

8.1.1 Procedure

Spread out part of the laboratory sample on a warm plate (about 40 °C) and cover immediately with a bell jar in order to prevent the escape of insects.

NOTE 2 In warm climates it may be advisable to cool the sample and then to sieve it quickly using a sieve of aperture size appropriate to the sample and through which the smaller insects will pass. The adult insects can easily be collected in a test tube and, if it is desired to know whether living insects are present, the closed test tube can be warmed for a few minutes by hand.

If no living insects are observed within 15 min, open if possible 100 obviously infested seeds to check the