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International Standard



542

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Oilseeds — Sampling

Graines oléagineuses — Échantillonnage

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO member bodies). The work of developing International Standards is carried out through ISO technical committees. Every member body interested in a subject for which a technical committee has been set up 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.

International Standard ISO 542 was developed by Technical Committee ISO/TC 34, *Agricultural food products*.

It was submitted directly to the ISO Council, in accordance with clause 5.10.1 of Part 1 of the Directives for the technical work of ISO. It cancels and replaces ISO Recommendation R 542-1967, which had been approved by the member bodies of the following countries :

Australia	Germany, F. R.	South Africa, Rep. of
Canada	Hungary	Sweden
Chile	Ireland	Switzerland
Colombia	Korea, Rep. of	Turkey
Czechoslovakia	Netherlands	United Kingdom
Egypt, Arab Rep. of	Portugal	USSR
France	Romania	

The member bodies of the following countries had expressed disapproval of the document on technical grounds :

Austria
India

Oilseeds — Sampling

0 Introduction

Correct sampling is a difficult process which requires most careful attention. Emphasis cannot therefore be too strongly laid on the necessity of obtaining a properly representative sample of oilseeds for analysis.

Most oilseeds are sold on the basis of a sample and on the result of analysis of the sample, and disputes are invariably settled by reference to the sample, so that careless or inaccurate sampling could lead to misunderstanding, delay and unwarranted financial adjustments.

The procedures given in this International Standard are recognized as good practice and it is strongly recommended that they be followed whenever practicable. It is recognized that it is difficult to lay down fixed rules to be followed in every case, and particular circumstances may render some modification of the method desirable.

The procedures described in this International Standard should not be applied to products of manifestly heterogeneous composition.

1 Scope and field of application

This International Standard specifies general conditions relating to the sampling for the assessment of quality of oilseeds purchased as industrial raw materials.

2 Definitions

For the purpose of this International Standard, the following definitions apply.

2.1 consignment : The quantity of oilseeds dispatched or

received at one time and covered by a particular contract or shipping document. It may be composed of one or more lots.

2.2 lot : A stated quantity, presumed to be of uniform characteristics, taken from the consignment, and allowing the quality to be assessed.

2.3 increment : A small quantity of oilseeds taken from a single position in the lot.

A series of increments should be taken from different positions in the lot.

2.4 bulk sample : The quantity of oilseeds obtained by combining and mixing the increments taken from a specific lot.

2.5 laboratory sample : The quantity of oilseeds removed from the bulk sample and intended for analysis or other examination.

3 General

3.1 Samples shall be taken jointly by sampling superintendents appointed by buyers and sellers, or by a sampling superintendent appointed jointly.

3.2 Samples shall be fully representative of the lots from which they are taken. Therefore, as the composition of the lot is seldom uniform, a sufficient number of increments shall be taken and carefully mixed, thus giving a bulk sample from which are obtained, by successive divisions, the laboratory samples.

3.3 It is essential that oilseeds which are sea-damaged or otherwise damaged in transit or out of condition, together with loose collected¹⁾ and sweepings, are kept separate from the sound oilseeds and sampled separately. Samples of the unsound material shall not be mixed with samples of the sound material.

1) This term is used to designate material which has leaked from its original container, but is not unduly contaminated.

3.4 Special care is necessary to ensure that all sampling apparatus is clean, dry and free from foreign odours.

Sampling shall be carried out in such a manner as to protect the samples, the sampling instruments, and the containers in which the samples are placed, from adventitious contamination such as rain, dust, etc.

Material adhering to the outside of the sampling apparatus shall be removed before the contents are discharged.

4 Apparatus

Apparatus is required as follows (see figures 1 to 9 for examples).

NOTE — Many different types and variations of apparatus are available. The dimensions given in the figures are included, therefore, solely as a guide.

4.1 Sampling from bulk

Shovels, hand-scoops, cylindrical samplers, conical samplers, mechanical samplers and other apparatus for taking increments periodically from a flow of oilseeds.

4.2 Sampling from bags

Sack-type spears or triers, cylindrical samplers, conical samplers and hand-scoops.

4.3 Mixing and dividing

Shovels, quartering irons and other dividing apparatus.

5 Limitation of the size of lot

5.1 General

The whole consignment shall be examined in lots of 500 t¹⁾ maximum for large or medium-sized seeds, and 100 t maximum for small seeds.

5.2 Carriage by sea or inland waterway

Most of the oilseeds are received from ocean-going vessels or from river transport. In both cases sampling normally takes place at transfer from the vessel. Each lot should be 500 (or 100) t or part thereof.

5.3 Carriage by rail or road

In the case of transfer from vessel to rail or road wagons, sampling may take place prior to the loading of the wagons. Each lot should be 500 (or 100) t or part thereof.

If sampling is carried out from laden wagons, each lot should comprise a number of wagons containing a total of 500 (or 100) t or part thereof.

5.4 Silo or warehouse

Where seed is unloaded directly from a vessel into silos or warehouses, the samples shall be taken as specified in 5.2. Where there is no provision for such sampling, this may take place as specified in 5.3 prior to, or during, transfer to the silo or warehouse. Each lot shall be 500 (or 100) t or part thereof.

6 Method of taking samples

6.1 Taking of increments

According to circumstances, the increments shall be taken from products in bulk or in bags by means of the sampling apparatus mentioned in clause 4, used in accordance with 6.1.1 and 6.1.2.

6.1.1 Products in bags

Unless otherwise specified in the contract or unless the practice at a port requires otherwise, increments shall be taken from 2 % of the bags forming the lot.

If the bags are opened, the increments may be taken by hand-scoop, cylindrical samplers or conical samplers.

If samples are taken from the closed bags, sack-type sampling spears (or triers) may be used.

6.1.2 Products in bulk

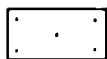
6.1.2.1 When sampling takes place while the product is in motion, increments shall be taken through the whole section of the seed and at time intervals depending on the rate of flow.

6.1.2.2 When bulk seed is sampled in the holds of craft during discharge, increments shall be taken from as many places as possible and at intervals determined by the rate of discharge.

1) Metric tonnes. 1 t = 1 000 kg

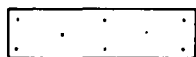
6.1.2.3 If sampling takes place from laden wagons or lorries, the increments shall be taken at three levels (top, middle, bottom), with a cylindrical or conical sampler depending on the seeds, at the following points :

Wagons or lorries up to 15 t :



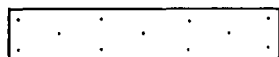
Five sampling points (middle and approximately 500 mm from sides)

Wagons from 15 to 30 t :



Eight sampling points

Wagons from 30 to 50 t :



Eleven sampling points

NOTE — If the type of wagon does not allow samples to be taken in this manner, or by agreement between buyer and seller, the method of sampling shall be as described in 6.1.2.1.

6.1.2.4 If sampling takes place from weigh hoppers, the increments shall be taken by means of cylindrical samplers, shovels or mechanical samplers, in accordance with the practice of the port.

6.1.2.5 The procedure for silos or warehouses is necessarily dependent on local conditions.

6.2 Laboratory samples

The bulk sample shall be mixed and divided to obtain the required number of laboratory samples by use of the apparatus mentioned in clause 4. The number of laboratory samples for analysis and arbitration shall be specified in the contract or otherwise agreed between buyer and seller.

For some seeds (for example copra, groundnuts in shell), it is advisable to sieve the bulk sample before dividing and then to add the fines to the laboratory samples in the correct proportion. This is to ensure that the samples contain the same percentage of low-quality fines.

6.3 Size of samples

Samples of the sizes given in the following table are usually suitable.

Larger or smaller laboratory samples may be required in some cases, according to the tests to be carried out.

Seed	Lot	In-crement	Bulk sample*	Laboratory sample
	t	kg	kg	kg
Large seeds (for example copra)	Up to 500	1	Up to 200	6
Medium-sized seeds (for example groundnut kernels)	Up to 500	0,5	Up to 100	5
Small seeds (for example poppy seeds)	Up to 100	0,1	Up to 20	2

* Whatever the size of the bulk sample, it should be representative of the lot.

7 Packaging and labelling of samples

7.1 Packaging of samples

7.1.1 The laboratory samples shall be packed in bags of closely woven cloth or strong paper, or in paperboard containers, polyethylene bags, sheet metal boxes, glass bottles or glass jars.

7.1.2 Samples for the determination of moisture content or for other analysis in which it is important to avoid the loss of volatile matter (for example, examination for evidence of chemical treatment), shall be packed in air-tight and moisture-tight containers fitted with air-tight and moisture-tight closures. The containers shall be completely filled and the closures shall be sealed to avoid any change in the original moisture content.

7.2 Labels for samples

If paper labels are used for oilseed samples, they shall be of a quality and size suitable for the purpose. The eyelet hole on the label shall be reinforced.

The information on the labels shall include such of the following items as are required by the terms of the contract :

- 1) Ship or wagon
- 2) From
- 3) To
- 4) Date of arrival
- 5) Quantity
- 6) Bulk/Bags (number)
- 7) Goods
- 8) Identification mark or Lot No.
- 9) Bill of lading number and date, or contract number and date
- 10) Date of sampling
- 11) Place and point of sampling
- 12) Sampled by

The information recorded on the label shall be permanent.

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8 Dispatch of samples

Laboratory samples shall be dispatched as soon as possible, and only in exceptional circumstances later than 48 h after sampling has been completed, non-business days excluded.

9 Sampling report

If a sampling report is prepared, besides giving the usual infor-

mation, it shall make reference to the condition of the oilseeds sampled, including signs of insect, mite or rodent infestation visible in the warehouse or silo, or during working the vessel or other carrier. This infestation is not always readily apparent in the sample except on close inspection or sieving. The report shall also refer to the technique applied, if this is other than that described in this International Standard, and all the circumstances that may have influenced sampling.

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Dimensions in millimetres

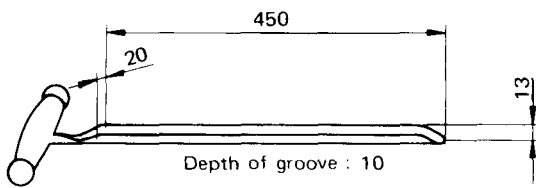


Figure 1 – Sampling spear (open trier)

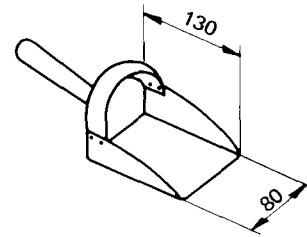


Figure 2 – Hand-scoop

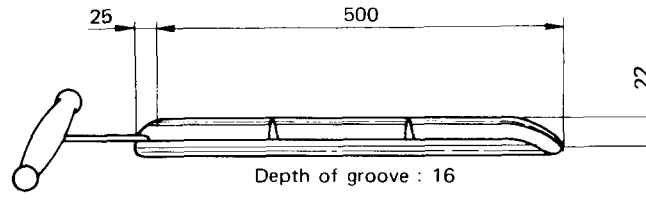


Figure 3 – Divided sampling spear (open trier)

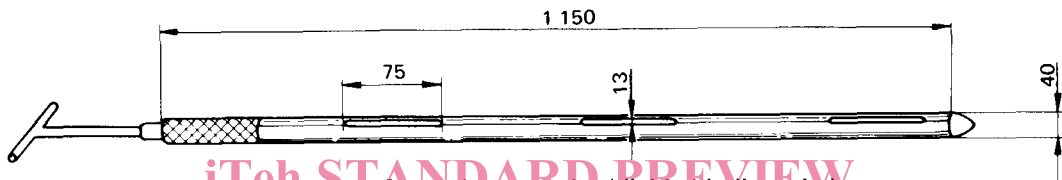


Figure 4 – Cylindrical sampler (divided bulk probe)

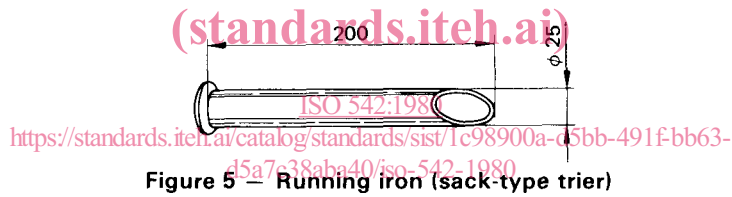


Figure 5 – Running iron (sack-type trier)

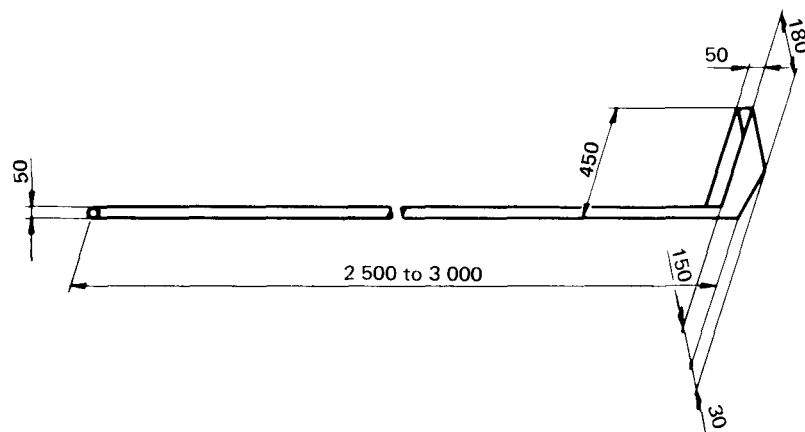


Figure 6 – Falling stream sampler (Pelican type)

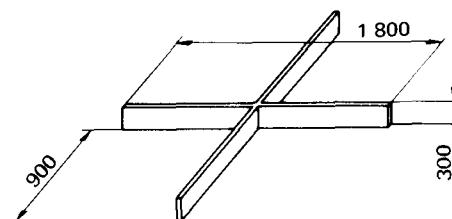


Figure 7 – Quartering irons

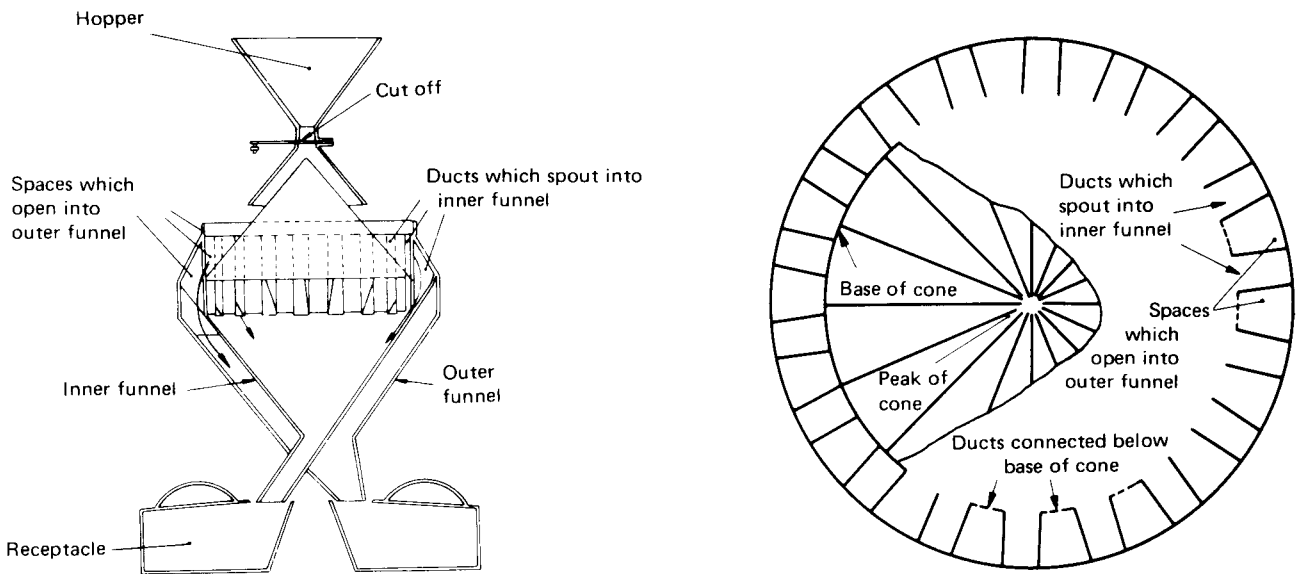


Figure 8 — Conical divider

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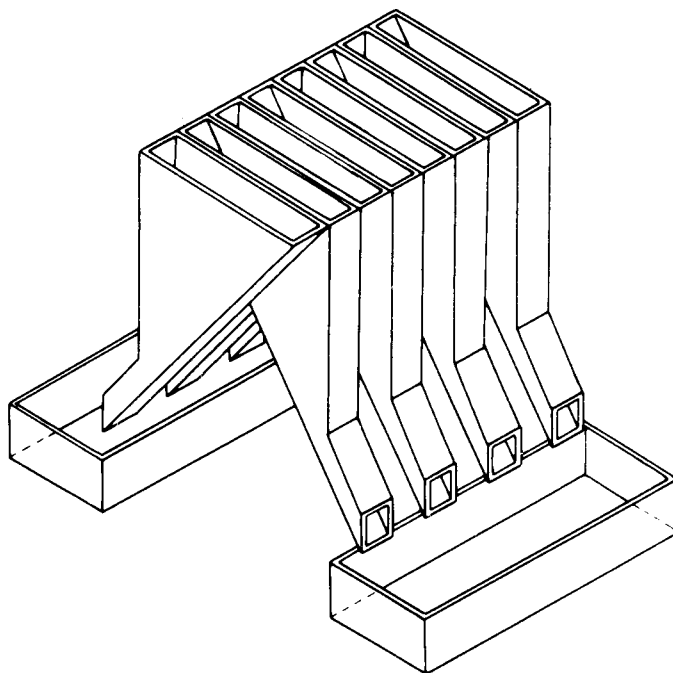


Figure 9 — Multiple-slot divider