

INTERNATIONAL STANDARD

ISO
6639-4

First edition
1987-02-01



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

Cereals and pulses — Determination of hidden insect infestation —

Part 4: Rapid methods

Céréales et légumineuses — Détermination de l'infestation cachée par les insectes —

Partie 4: Méthodes rapides

This is a preview of "ISO 6639-4:1987". [Click here to purchase the full version from the ANSI store.](#)

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 6639-4 was prepared by Technical Committee ISO/TC 34, *Agricultural food products*.

Section five cancels and replaces ISO 1162-1975.

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.

Cereals and pulses — Determination of hidden insect infestation —

Part 4: Rapid methods

0 Introduction

This International Standard describes methods of determining hidden insect infestation in cereals and pulses. It consists of the following parts:

Part 1: General principles.

Part 2: Sampling.

Part 3: Reference method.

Part 4: Rapid methods.

1 Scope and field of application

This part of ISO 6639 specifies five rapid methods for estimating the degree of, or detecting the presence of, hidden insect infestation in a sample of a cereal or pulse.

NOTE — The characteristics leading to the choice of rapid method are summarized in the table in ISO 6639/1.

Section one: Method by determination of carbon dioxide production (clauses 3 to 9)

The method is primarily intended for testing whole grains. It is not applicable for testing

- a) finely ground grain products, as there is a risk that particles of material will be sucked up with air samples; or
- b) grain products with moisture contents greater than 15 % (*m/m*), because of the risk of carbon dioxide produced by the products themselves and by micro-organisms interfering with the results.

In addition, the method is not applicable to the rapid testing of grain products on to which carbon dioxide has already been adsorbed in large quantities, for example grain stored in a confined atmosphere or when there are clear external indications of heavy infestation.

The method can be used for coarsely milled or kibbled grain products, provided that they have been sieved before testing to remove fine particles and loose insects.

The method does not permit the presence of dead adults, pupae, larvae or eggs to be detected.

Section two: Ninhydrin method (clauses 10 to 16)

The method is applicable to any dry grain prone to internal insect infestation, particularly wheat, sorghum, rice and similar sized grains. Large grains, such as maize, have to be partially broken (kibbled) before they can be tested. This treatment of large grains can cause some insects to be lost or fragmented, thus rendering the interpretation of results unreliable. Numbers of eggs and young larvae may be underestimated, but, in this respect, the method is no less efficient than any other.

Section three: Whole grain flotation method (clauses 17 to 24)

The method is suitable for detecting hidden infestation in most cereals and pulses but only on a qualitative basis.

Section four: Acoustic method (clauses 25 to 31)

The method is suitable for detecting living insect adults and larvae feeding inside grains. It does not permit dead adults and larvae or living eggs and pupae (non-feeding stages) to be detected.

Section five: X-ray method (clauses 32 to 38)

The method is suitable for detecting living and dead larvae and adults within grains. Insects which have been recently killed (for example by fumigation) may be difficult to distinguish from those still living.

2 References

ISO 520, *Cereals and pulses — Determination of the mass of 1 000 grains.*

ISO 565, *Test sieves — Woven metal wire cloth, perforated plate and electroformed sheet — Nominal sizes of openings.*

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

ISO 950, *Cereals — Sampling (as grain).*

ISO 951, *Pulses in bags — Sampling.*