
INTERNATIONAL STANDARD



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Green bananas — Ripening conditions

Bananes vertes — Conditions de maturation

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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 3959 was developed by Technical Committee ISO/TC 34, *Agricultural food products*, and was circulated to the member bodies in September 1975.

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

Australia	Iran	Romania
Austria	Israel	South Africa, Rep. of
Bulgaria	Mexico	Spain
France	Netherlands	Turkey
Ghana	New Zealand	Yugoslavia
Hungary	Poland	
India	Portugal	

No member body expressed disapproval of the document.

Green bananas — Ripening conditions

0 INTRODUCTION

Bananas continue to develop physiologically after they have been harvested, and their state of ripeness when they are placed in the ripening room will depend on their state when harvested and on different conditions to which they have subsequently been submitted.

The ripening of the bananas consists of a preliminary heating and a supplementary heating, followed by the actual ripening, in the course of which two phases may be distinguished :

- a first phase characterized mainly by an extensive release of heat, without change in the colour of the skin but in connection with intense physiological activity;
- a second phase characterized mainly by a decrease in the release of heat, associated with continuation of hydrolysis of the starch with the formation of reducing sugars and sucrose, by a rapid change in the colour of the skin and by the development of the odour.

1 SCOPE AND FIELD OF APPLICATION

This International Standard lays down conditions to be observed in order to obtain satisfactory ripening of green bananas following possible storage and transport in accordance with ISO/R 931.

It applies to green bananas from cultivars which form the subject of international trade, of which the following indicating though not limiting list may be given :

- Gros Michel
- Lacatan
- Poyo-Robusta
- Valery
- Grande Naine (Giant Cavendish)
- Petite Naine (Dwarf Cavendish)

2 REFERENCE

ISO/R 931, *Green bananas — Guide to storage and transport*.

3 FACTORS INFLUENCING THE DEGREE OF RIPE-NESS OF THE BANANAS WHEN THEY ARE PLACED IN THE RIPENING ROOM

3.1 State of bananas when harvested

The assessment of the degree of ripeness of the bananas when harvested is based on the fullness of a given fruit on the bunch. It is a dimensional criterion which corresponds appreciably to the degree of ripeness when the fruit is normal.

Unfavourable ecological conditions may produce the following effects :

- to predispose the bananas to a more rapid development of the flesh than expected;
- possibly, to favour the development of fungal deterioration of the skin, and in particular of the stalks and the ends of the cushions.

3.2 Conditions to which the bananas are submitted from the time they are harvested to the time they are placed in the ripening room

After harvesting, the development of the banana is influenced by certain external or physiological factors, such as the following.

3.2.1 External factors :

- the time period between harvesting and the beginning of cooling as well as the temperature to which they are submitted during this period;
- the duration of cooling;
- the temperature and relative humidity during transport and up to the time they are placed in the ripening room;
- incorrect handling, particularly when this results in bending of the stalks.