SLOVENSKI STANDARD
oSIST prEN ISO 7541:2019

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Začimbe - Spektrofotometrijsko določevanje barvila v papriki, dobljenega z ekstrakcijo (ISO/DIS 7541:2019)

Spices and condiments - Spectrophotometric determination of the extractable colour in paprika (ISO/DIS 7541:2019)

Gewürze und würzende Zutaten - Spektrophotometrische Bestimmung der extrahierbaren Farbe in Paprika (ISO/DIS 7541:2019)

Épices et condiments - Détermination spectrophotométrique de la couleur extractible du paprika (ISO/DIS 7541:2019)

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Spices and condiments — Spectrophotometric determination of the extractable colour in paprika

Épices et condiments — Détermination spectrophotométrique de la couleur extractible du paprika

ICS: 67.220.10

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Foreword

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The main task of technical committees is to prepare International Standards. 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.

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ISO 7541 was prepared by Technical Committee ISO/TC 34, *Food products*, Subcommittee SC 7, *Spices, culinary herbs and condiments*.

This second edition cancels and replaces the first edition (ISO 7541:1989) which has been technically revised.

Introduction

This document is based on the ASTA Method 20.1[1] (revised October 2004), Extractable colour in capsicum and their oleoresins (American Spice Trade Association) .

Spices and condiments — Spectrophotometric determination of the extractable colour in paprika

1 Scope

This document specifies a test method to determine the extractable colour in paprika by measuring absorbance of an acetone extract of the sample.

It applies to ground paprika in every presentation (sweet, hot, smoked, etc).

2 Terms and definitions

For the purpose of this document, the following terms and definitions apply.

2.1
extractable colour
soluble matter (extract) in acetone, determined according to the procedure described in this standard

2.2
paprika
product obtained by grinding the dry and mature fruits of *Capsicum annuum L. / Capsicum frutescens L.*

3 Principle

Extraction from the test sample using acetone. Measurement of the absorbance of the solution obtained using a spectrophotometer at a wavelength of 460 nm.

4 Reagents

All reagents shall be of recognized analytical grade.

4.1 Acetone

5 Apparatus

Usual laboratory equipment and, in particular, the following:

5.1 Analytical balance, capable of weighing with a resolution of 0,1 mg.

5.2 Graduated pipette, of 10 ml capacity, class A.

5.3 Spectrophotometer cells, with an optical path length of 1 cm, suitable for the UV-vis range, provided with a lid.

5.4 Spectrophotometer, suitable for measuring absorbance at 460 nm. The calibration and verification of the spectrophotometer shall be carried out with periodicity enough to guarantee the proper development of the test.

5.5 Volumetric flasks, of 100 ml capacity, class A, with ground glass stoppers.

5.6 Sieve, of 850 µm mesh.

5.7 Polystyrene anti-static weigh boats, for analytical balance

6 Sampling

The laboratory shall receive a truly representative sample, without any damage during the transport or storage.

Sample shall be protected from light.

7 Test sample preparation

Sample shall be ground so that at least 99% of the powder passes through the sieve of 850 µm mesh (5.6). Mix thoroughly before taking the test portion.

8 Procedure

Weigh, to the nearest 0,1 mg, around 0.5-0.7 g of paprika, prepared according to clause 7, into a weigh boat (5.7) and transfer quantitatively into a 100 ml volumetric flask (5.5). Take to the mark with acetone and close with a stopper.

Shake vigorously. Let the solution stand for 16 h at room temperature, away from light. Shake the flask. Let stand the solution enough time for the particles to settle.

Set the wavelength on the spectrophotometer to 460 nm, and record the absorbance of the extract using acetone as blank.

NOTE The recommended range of absorbance A values is from to 0,30 to 0,70. Extracts having A greater than 0,70 should be diluted with acetone to one-half the original concentration. Extracts having A less than 0,30 should be discarded and the extraction performed using a larger sample weight.

9 Method of calculation

The extractable colour is given by the following formula:

$$\text{Extractable colour} = (A \times 16{,}4) / m$$

where

A is the absorbance of the test sample extract at 460 nm;

m is the mass, in grams, of the test portion.

If any dilution has been made (see note in subclause 8), the relevant dilution factor shall be applied.

The capsanthin concentration C in g/kg of the undried sample is determined from the Extractable colour (ASTA value) using the formula:

$$C = \text{Extractable colour} \times 0{,}169$$

10 Expression of results

The results shall be expressed in ASTA units, and shall be reported to the nearest whole number.