

# CODEX ALIMENTARIUS

INTERNATIONAL FOOD STANDARDS



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## **GENERAL STANDARD FOR VEGETABLE PROTEIN PRODUCTS (VPP)**

**CXS 174-1989**

**Adopted in 1989. Amended in 2019.**

## 1. SCOPE

This Standard applies to vegetable protein products (VPP) intended for use in foods, which are prepared by various separation and extraction processes from proteins from vegetable sources other than single cell protein. The VPP are intended for use in foods requiring further preparation and for use by the food processing industry. This Standard does not apply to any vegetable protein product which is the subject of a specific Codex Commodity Standard and is designated by a specific name laid down in such standards.

## 2. DESCRIPTION

VPP covered by this Standard are food products produced by the reduction or removal from vegetable materials of certain of the major non-protein constituents (water, oil, starch, other carbohydrates) in a manner to achieve a protein (N x 6.25) content of 40% or more. The protein content is calculated on a dry weight basis excluding added vitamins, minerals.

## 3. ESSENTIAL COMPOSITION AND QUALITY AND NUTRITIONAL FACTORS

### 3.1 Raw materials

Clean, sound, plant material essentially free from foreign matter in accordance with Good Manufacturing Practice, or VPP of lower protein content meeting the specifications contained in this Standard.

3.2 VPP shall conform to the following compositional requirements except in so far as certain requirements may be modified in specific types of VPP.

#### 3.2.1 *Moisture*

The moisture content shall be sufficiently low as to ensure microbiological stability under the recommended conditions of storage.

#### 3.2.2 *Crude protein*

(N x 6.25) shall not be less than 40% on a dry weight basis, excluding vitamins, minerals, amino acids and food additives.

#### 3.2.3 *Ash*

The yield of ash on incineration shall not exceed 10% on a dry weight basis.

#### 3.2.4 *Fat*

The residual fat content shall be compatible with Good Manufacturing Practice.

#### 3.2.5 *Crude fibre*

For products not covered by a specific product standard, crude fibre shall not exceed 10% on a dry weight basis.

### 3.3 Optional ingredients

- (a) carbohydrates, including sugars
- (b) edible fats and oils
- (c) other protein products
- (d) vitamins and minerals
- (e) salt
- (f) herbs and spices

### 3.4 Nutritional factors

Processing shall be carefully controlled and sufficiently thorough to secure optimum flavour and palatability, as well as to control such anti-nutritional factors as trypsin inhibitor, hemagglutinins, glucosinolates, etc., in accordance with intended use. Where it is necessary to control trypsin inhibitor activity in a food, the maximum level allowed should be defined in terms of the finished product. Certain VPP are produced under low temperature conditions to avoid loss of protein solubility or enzyme activity. These special purpose VPP shall be assayed for protein nutritive value after appropriate heat treatment. Processing must not be so severe as to appreciably impair the nutritive value.

## 4. FOOD ADDITIVES

### 4.1 Processing Aids

During the course of manufacturing VPP the following classes of processing aids may be used:

The processing aids used in products conforming to this Standard should be consistent with the *Guidelines on Substances used as Processing Aids* (CXG 75-2010).

- Acidity Regulators
- Antifoam Agents
- Firming Agents
- Enzyme Preparations
- Extraction Solvents
- Antidusting Agents
- Flour Treatment Agents
- Viscosity Control Agents

### 4.2 Food Additives

No food additives are permitted in vegetable protein products.

## 5. CONTAMINANTS

VPP shall be free from heavy metals in amounts which may represent a hazard to health.

## 6. HYGIENE

6.1 It is recommended that the products covered by the provisions of this Standard be prepared in accordance with the appropriate sections of the *General Principles of Food Hygiene* (CXC 1-1969).

6.2 To the extent possible in Good Manufacturing Practice, the products shall be free from objectionable matter.

6.3 When tested by appropriate methods of sampling and examination, the product:

- (a) shall be free of micro-organisms which may represent a hazard to health;
- (b) shall not contain any substances originating from micro-organisms in amounts which may represent a hazard to health; and
- (c) shall not contain any other poisonous substances in amounts which may represent a hazard to health.

## 7. PACKAGING

VPP shall be packed in suitable hygienic containers which will maintain the product during storage and transport in a dry and sanitary condition.

## 8. LABELLING

The provisions of the *General Standard for the Labelling of Prepackaged Foods* (CXS 1-1985) shall apply.

### 8.1 Name of the food

8.1.1 The name of the food to be declared on the label shall be: "... Protein product". The blank is to be filled with the name of the specific source of the vegetable protein, e.g. groundnut, cottonseed, rapeseed.

8.1.2 The protein content of the VPP shall be declared on a dry weight basis.

8.1.3 The name may include a term which accurately describes the physical form of the product, e.g., "granules" or "bits".

8.1.4 When the VPP is subjected to a texturization process, the name of the product may include an appropriate qualifying term such as "textured" or "structured".

### 8.2 List of ingredients

A complete list of ingredients shall be declared on the label in descending order of proportion except that in the case of added vitamins and added minerals, these ingredients shall be arranged as separate groups for vitamins and minerals, respectively, and within these groups the vitamins and minerals need not be listed in descending order of proportion.

### **8.3 Labelling of non-retail containers**

Information for non-retail containers shall either be given on the container or in accompanying documents, except that the name of product, lot identification and name and address of the manufacturer or packer shall appear on the container. However, lot identification and the name and address of the manufacturer or packer may be replaced by an identification mark, provided that such a mark is clearly identifiable with the accompanying documents.

## **9. METHODS OF ANALYSIS AND SAMPLING**

For checking the compliance with this Standard, the methods of analysis and sampling contained in the *Recommended Methods of Analysis and Sampling* (CXS 234-1999) relevant to the provisions in this Standard shall be used.