

Indian Standard
SPECIFICATION FOR
EDIBLE SOYA PROTEIN ISOLATE

0. FOREWORD

0.1 This Indian Standard was adopted by the Indian Standards Institution on 30 September 1976, after the draft finalized by the Nutrition Sectional Committee had been approved by the Agricultural and Food Products Division Council.

0.2 During the past few years, an increasing area has gradually been brought under soyabean cultivation, and this is expected to go up in years to come as crop rotations are further diversified. Soyabean protein is rich in lysine, an essential amino acid and can therefore serve, as a nutritionally useful ingredient in blended and processed foods. Proteins from soyabean are now being manufactured in the country in many forms such as high, medium and low fat flours and protein isolates and there is scope for developing others. This standard is intended to help the manufacturers of various grades of soyabean flours in optimising their operation, as well as the users of such products in choosing the right quality of soya protein in the manufacture of processed foods.

0.2.1 Edible soya protein isolate shall be prepared from low-fat soya flour (see IS : 7835-1975*) which is debittered (for example, by extraction with a polar solvent) followed by extraction of the protein with alkali, centrifugation, steam deodorization of the extract, and isolation followed by drying of the protein isolate in a suitable manner.

0.3 Separate Indian Standards have been issued to cover requirements of full-fat, medium-fat and low-fat soya flours and of soya protein isolate. As such the two Indian Standards, covering edible soya flour (expeller pressed) (IS : 5275-1969) now redesignated as medium-fat soya flour and edible soya flour (solvent extracted) (IS : 5276-1969) now redesignated as lowfat soya flour, are being withdrawn. **0.3.1** Soya protein isolate is of particular functional value in products like protein-based beverages, yoghurt, (*DAHI*), whipped creams, emulsified foods and pharmaceutically-oriented products (see Table 3).

0.4 To get the best out of soya products which are used as a protein *source*, they should be heat-treated. Varying the degree of heat treatment of soya products progressively and simultaneously raises the protein efficiency or quality, inactivates such enzymes as trypsin inhibitors, urease and lipoxygenases and lowers the nitrogen solubility index. Such heat treatment can be applied to all soya protein products, whether full-fat, medium-fat, lowfat flours or isolate. Moist heat treatment destroys the several anti-nutritional enzymes present in soyabeans and reduces their activity. Dry heat treatment raises the quality of the protein present, but overheating lowers it. The optimum kind and degree of

heat treatment to be applied to soya protein for use in any particular food product, depends therefore, on the nature and extent of heating which subsequent manufacture of that food product entails if good protein quality is to be ensured. In order to help food manufacturers, guidelines recommending usage of edible soya protein products is given in Appendix A.

0.5 This standard has been formulated in close collaboration with the protein Foods and Nutrition Development Association of India.

0.6 In the preparation of this standard, due consideration has been given to the provisions of the Prevention of Food Adulteration Act, 1954 and the Rules framed thereunder. However, this standard is subject to the restrictions imposed under these *rules*, wherever applicable.

0.7 For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS : 2-1960*. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

1. SCOPE

1.1 This standard prescribes the requirements and the methods of sampling and test for edible soya protein isolate.