CENTRAL FOOD TECHNOLOGICAL RESEARCH INSTITUTE, MYSORE

BLAND SOY PROTEIN CONCENTRATE

INTRODUCTION

Soy protein concentrate is an excellent protein for human food. It is prepared by removing soluble sugars from defatted soy flakes or flours. The general procedure used in the preparation of soy protein concentrate is leaching out oligosaccharides, mineral matter and other soluble constituents. The remaining components are mainly proteins and insoluble polysaccharides. Four common processes are used to manufacture soybean protein concentrate. Three processes are presently used to produce commercially available soy protein concentrate viz. aqueous alcohol wash, acid wash and hot water leaching. The principal objective from each process is to immobilize the major protein component and extract non-protein component. The extractable components are soluble carbohydrates, principally raffinose and stachyose salts soluble proteins and other minor constituents. Soy protein concentrates generally have better flavour, improved functionality and reduced flatulence as compared to raw soybean flour.

In the soy protein concentrate many of the objectionable components associated with soy flakes are removed hence the product is bland and can be used in place of soy flour at higher concentration. In the protein concentrate the nutritional quality is retained as that of original material. Soy protein concentrates also find use in major non-meat market as non-dairy products, bakery ingredients, health foods and pasta products. Improved water absorption capacity of soy protein concentrate would help to improve the shelf life of the bakery products.

Soy protein concentrates are used in health food market as textured soy protein concentrate as meat substitute. Protein concentrate can be used in the manufacture of pasta products to increase the protein content. Soy protein concentrate can be manufactured from full-fat flakes, grits or flour.

RAW MATERIAL

White variety of soybean

PROCESS

Cleaning → Tempering, drying and dehulling → Conditioning and flaking Defatting →

PLANT & MACHINERY

Principal equipments: Cleaner/grader, Screw conveyors, Dryer, Impact Dehuller, Grader/siever, Air classifier, Heavy roller flaker, Autoclave with all accessories and trolleys with spare trays

Auxiliary equipments: Material handling units, trolleys, trucks, cranes and lighting

a) Land & Building
b) Plant and machinery Rs.20,00,000

PRODUCTION CAPACITY

Capacity of the unit: 2220 Kg (raw material /8 hrs per day shift)
Yield 1000 Kg per day
Working: 300 days per annum

TECHNOLOGY/MANUFACTURING PROCESS – Availability

The technology for the manufacture of Bland soy protein concentrate has been developed at CFTRI, Mysore, using appropriate equipment for optimal product recovery of right quality. The CFTRI has the necessary expertise to provide technical assistance and guidance for setting up the project. The CFTRI can offer further technical assistance for project implementation under technical consultancy arrangements.