

SCOPE AND OBJECTIVES OF THE STUDY

Scope of the study is to prepare a comprehensive document on the use of plastics in food and food products by tracing the history and to cover the present trend. Comprehensive studies are to be carried out to look into the favourable aspects of plastics in terms of environmental safety, convenience and technical advantages over the existing material.

The objective of the project was split into two phases.

Phase I: Document Preparation enlisting the following aspects.

Significance of food (the most important commodity for human survival), types of food which include wide range of products from natural produce to semi processed/ processed food and criterion for packaging of food products (eg. performance, preservation, shelf life, value addition).

Food grade packaging materials – significance of plastics, disadvantages of traditional materials like glass, paper metal etc. Types of packaging – small, medium and bulk. Packaging of fresh and processed foods – milk and dairy products, cereals like wheat, rice, sugar, confectionery products, oils/ ghee, vanaspati, spices, beverages, spices, carbonated drinks etc.

The document pertaining to the above phase I activity has already been submitted to the sponsor.

The present report pertains to the following phase II activity

Phase II: Experimental activity.

- * Bulk packaging: Packaging of wheat, rice, paddy and sugar in plastic woven sacks (PWS) namely i) PP woven sacks and ii) HDPE woven sacks.
- * Accelerated tests on the shelf life/suitability of PWS for food grains and sugar packaging. Detailed study of physical (moisture related), chemical (oxidation) and biological (infestation) deterioration in PWS. Newer approaches like computer simulation for prediction of shelf life of packaging as well as packed products.
- * Occurrence of moulds and quantitative estimation of changes in protein (gluten in wheat).
- * Accelerated tests by vibratory method on transfer of any fibrous material/PP/HDPE pieces into the packaged substrate.
- * Air/moisture permeability in plastic woven sacks.
- * Migration tests in terms of the analysis of leachates from the plastic woven sacks.
- * Data processing, consolidation of results and report submission.