

SPRAY DRYING TECHNOLOGY FOR PRODUCING TOMATO POWDER- NOVEL WAY TO REDUCE POST HARVEST LOSS

Abubacker Siddick S.

Hand in Hand India, India, E-mail: siddick.nrm@hishseed.org

Post harvest losses of horticulture farm produce are the major problem in the market supply chain. Loss of food produced is not only waste of food, its waste of small holder's effort, their inputs, capital and also waste of water resources. Tomatoes are highly perishable with a limited storage life of 7- 10 days. In India lack of pack house facilities with infrastructure for sorting, grading, cold chain logistics and post harvest processing mechanism, the farmers are getting very low returns with loads of marketable surplus left behind. In Tamil Nadu tomato crop is cultivated on more than 28,000 Ha with average production of 3.25 thousand tonnes per year.

Tomato is the major vegetable crop cultivated in Dindigul district on an area of more than 2200 Ha across 5 major taluks with a tremendous potential of post harvest processing. Spray drying is one of the innovative post harvest technology for making fruit powders. A study was conducted in Gandhigram with locally available tomato varieties and hybrids using commercial scale ACMEFIL spray dryer with Public- Private- Partnership mode. Tomato growers from Oddanchatram, Dindigul, Reddiyar chatram, and Ayyalur with known varieties of tomatoes like Ruchi Hybrid, Annangi (Nadu), Co-3, and PKM-1 in link with Aruna agro agencies, Theni (Buyer) and Gandhigram Rural Institute (Technology provider) supplied fresh tomatoes.

The spray drying behaviour of different tomato juice at various inlet and outlet temperatures was studied with continuous observation of parameters like feed flow rate, addition of malt dextrin and powder yield. With addition of 8% malt dextrin and a feed rate of 80ml per minute controlled by the peristaltic pump, inlet temperature as 160⁰C and an outlet temp of 90⁰C was observed as optimum conditions for high recovery of fruit powders. The physical, chemical and biological properties of spray dried powders of tomato varieties are recorded.