

## DEVELOPMENT OF TOMATO POWDER BASED INSTANT SOUP MIXTURE AND EVALUATION OF THE ACCEPTABILITY OF THE PRODUCT

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Tomato is one of the most important supplementary sources of minerals and vitamins in human diet. Fresh tomato is a popular ingredient in soup preparations due to its unique flavor. However, the perishable nature of tomato limits its keeping quality for few days and leading to 54% postharvest loss. This could be minimized by developing shelf-stable food products from tomato. This study was conducted to develop a tomato powder based soup mixture in dry form and to study the acceptability of the product. In the research, fresh tomatoes at 40, 50, 60 and 70% levels were mixed with other vegetables, and rice and pumpkin were used as thickening agents in nine treatment combinations. A sensory evaluation was carried out to determine the optimum proportion of tomato and best thickening agent in developing the soup mixture. Based on the results, the best recipe was selected and converted into dry form by oven drying using standard drying conditions. Acceptability of the product was tested using physico-chemical, microbiological and organoleptic evaluations. The dried product was packaged using polypropylene/cardboard, bi-oriented polypropylene/cast polypropylene, triple laminated aluminum foil under ambient conditions (34 °C ±3 °C and 65±5 % RH). Suitable packaging material was selected based on the moisture content, water activity, color and microbiological quality analysis of the product at three weeks intervals.

Results revealed that, addition of 50% tomato, 5% pumpkin and 5% red rice were effective in developing tomato powder based soup mixture with good organoleptic properties. The moisture content of the product was reduced to 6% with water activity of 0.60 leading to a microbiologically safe product. The dried product packaged in triple laminated aluminum foil was most effective for storage under ambient conditions without quality deterioration for 3 months.

**Key words:** Tomato, Postharvest loss, Soup, Dehydration, Packaging, Storage