

DEVELOPMENT OF A METHODOLOGY FOR PRODUCTION OF DEHYDRATED TOMATO POWDER AND APPLICATION FOR FOOD PREPARATION

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Tomato is one of the most popular and widely grown, annual vegetable crops in Sri Lanka and it is easily grown in all agro-ecological zones of the country with average yield of 9.8 metric tons per hectare. KWR, Roma, Marglobe, T146, T89, T245, Vihara 2, Thilina, Ravi and Tharidu are high yielding varieties, which are recommended by the Department of Agriculture. Tomato is consumed through out the year in different forms. A wide variety of tomato products are prepared by concentrated juice or pulp, which needs high cost technology for good quality products. Low cost of processing and packaging, shelf stability and convenience to use are the prime requirements of present competitive market. Drying is the most suitable method to fulfill the above requirements. Therefore, this study was conducted at the Institute of Post Harvest Technology, Anuradhapura to develop a suitable drying method for the production of dehydrated tomato powder and to study the application of that in food preparations. Ripe tomatoes were subjected to two different drying methods namely tomato pulp drying and tomato slice drying. Changes in moisture, total ash, crude fat, crude fiber, and crude protein contents were determined after dehydration. Due to practical problems, dried powder using tomato slices was only used to produce food preparations namely tomato sauce and tomato leather. The acceptability of the products was tested by a sensory evaluation by a panel consisting 30 untrained panelist using 5 point hedonic scale. Then a suitable packaging material for storage of the tomato powder was selected based on the changes in moisture content, water activity and dehydration ratio of the product. Results revealed that blanching at 60 °C hot water

with 5% citric acid and 5% salt was successful to preserve colour in dried powder. Drying at 55 0C for 48 hours was sufficient to reduce the water activity up to 0.61 and to obtain a shelf stable product with good physico-chemical properties. Results further revealed that drying of tomato slices was better than that of tomato pulp in manufacturing tomato powder. Dried powder packed in pouches made out of triple laminated aluminum foil could be stored at 27 ± 3 0C and 82 ± 3 % relative humidity for three months without quality deterioration. Tomato powder can be produced sufficiently using dried tomato slices and dried tomato powder could be effectively used in manufacturing sauce and tomato leather of excellent quality.

Key words: Dehydration, Tomato powder, Tomato leather, Tomato sauce