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Title: PERFORMANCE EVALUATION OF LOW COST MULTIPURPOSE GREENHOUSE FOR DRYING OF TOMATO

Publisher: Birsa Agricultural University, Ranchi, Jharkhand-6

Language: en\_US

Type: Thesis

Pages: 50

Agrotags: null

Keywords: PERFORMANCE EVALUATION OF LOW COST MULTIPURPOSE GREENHOUSE FOR DRYING OF TOMATO

**Abstract:** Tomato (*Lycopersicon esculentum* Mill.) is a highly seasonal, perishable and available in large quantities during peak season of production. It is an important vegetable for human consumption because of its vitamins and minerals content that provide the basic human nutritional requirements. There are various techniques of extending shelf life of tomato and dehydration is one of the important process by which tomatoes are preserved. The greenhouse is an enclosed structure and inside temperature is more than open field and can be used as direct solar dryer. The low cost multipurpose greenhouse (MGH) was used for drying of without blanched & blanched tomato under full and half ventilation condition. The construction cost of low cost MGH was around Rs 290/m<sup>2</sup>. The environmental parameters temperature & RH under full ventilation and temperature, RH & air velocity under half ventilation was recorded during drying of tomato. All the environmental parameters were measured at 1 h interval. The initial moisture content of fresh tomato was found to be 93.3% - 94.4 % (w. b.) and the blanching was done by dipping the cut tomato in sodium metabisulphite solution (6%) for blanching time of 5 minutes. The temperature & RH measured at full ventilation under MGH was found to be 3°C to 8.5°C more than open field condition and RH was found to be 5% to 7% lower than open field. The temperature variation at different location measured at along the length, width & height inside the MGH and the highest temperature was found to along the height at the 2.7 m. The final moisture content of dried tomato samples was around 11% (w. b) and the drying time of tomato at full ventilation for without blanched & blanched under open field condition is 29 h & 20 h whereas under MGH condition for without blanched & blanched tomato is 28.5 h & 19.5 h. The shrinkage ratio, rehydration ratio & dehydration ratio of dehydrated tomato under full ventilation were varied between 13.5 to 14.48, 1.7 to 1.8 & 12.68 to 13.3 respectively. The sensory evaluation was performed using Hedonic-rating test of 5- point scale and the blanched tomato dried under MGH was found to be best in comparison to open field. The MGH is used for drying of tomato apart from cultivation & cost efficient than stand alone greenhouse solar dryer constructed only for drying purpose.

**Description:** PERFORMANCE EVALUATION OF LOW COST MULTIPURPOSE GREENHOUSE FOR DRYING OF TOMATO

**Subject:** Agricultural Engineering

**Theme:** PERFORMANCE EVALUATION OF LOW COST MULTIPURPOSE GREENHOUSE FOR DRYING OF TOMATO

**These Type:** M.Tech.

**Issue Date:** 2019

**Appears in** Thesis (/handle/1/93550)

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