

AN ALTERNATIVE METHOD FOR THE SUN DRYING OF TRADITIONAL DRIED EGGPLANT

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ABSTRACT: Eggplant (*Solanum melongena* L.) is an important market vegetable of Asian and Mediterranean countries. According to Food and Agriculture Organization of the United Nations, world production of eggplants was around 50.19 million tons in 2014. China as main producer (29.5 million tons) followed by India (13.5 million tons), Egypt (1.2 million tons), Iran (0.85 million tons) and Turkey (0.82 million tons) (FAO, 2014). Turkey is one of the worlds largest growers, whose annual production has been around 827380 tons in 2014 (FAO, 2014). Eggplant is a good source of vitamins and minerals, especially in potassium and phosphorus. It contains a variety of phytochemicals such as phenolics and flavonoids (Akanitapichat et al., 2010). It is ranked amongst the top ten vegetables in terms of antioxidant capacity due to the phenolic constituents (Cao et al., 1996). Sun drying method is widely used to dry grains, vegetables, fruits and other agricultural products (İ. T. Togrul et al., 2004). In Turkey, sun drying is commonly used for drying of vegetables. In open sun drying, solar radiation directly affects the foods. The heat results in vapor formation with increasing temperature and evaporation of water from the surface of food (I. T. Togrul, 2003). During the early stages of drying, convective hot air drying is certainly the most efficient method. However, as the process continues, drying hardly progresses and slows down so it requires more energy (Argyropoulos et al., 2011). During drying process, the rate of evaporation is faster than the rate of water movement to the surface.

INTRODUCTION

Oğuzeli is center of production and sun drying of eggplant, in Gaziantep. It is one of the most famous areas that contribute in the process of drying eggplant. The eggplant is collected from the fields are cleaned by the local people. After cleaning, next step, one of the most important process, is digging Figure (1). They are left to dry on the terraces of the houses or in empty fields over the mountains under the hot sunlight and wind. It has the disadvantages of lack of control of the drying process, loss of product quality, lack of uniformity in drying, the risk of contamination by molds, bacteria, rodents, birds and insects, long drying times are dependent on climate (St George et al., 2008). Temperature and wind play an

important role in the drying process. When the temperature is high, it is being worked intensively in recent days to dry the eggplants. The duration of drying process its take 3-4 days when the temperature 30-32 C° and wind speed 18 kph (MGM) while approximately 1 and half day when temperature 40-41 C°.

They are using long rope with 2.5 meters lengths with 50 pieces of fresh eggplant Figure 2. The drying process take place in shadow region as shown as in Figure 3 and 4. Because of is exposed to heat for longer time that causes problems related to quality parameters such as unacceptable color, flavor, texture, sensory characteristics, loss of nutrients, shrinkage, reduction in bulk density and rehydration capacity Figure 5. The length of the fresh eggplant is about 7-8.3 cm while the length of dried is about 5-5.3 cm Figure 6. The thickness of digging fresh eggplant about 0.3-0.5 cm. The drying season starts at the beginning of June and ends in mid-October.



Figure 1. Sun drying process of eggplant.



Figure 2. Dried eggplant under the shadow.



Figure 3. Fresh eggplant under shadow.



Figure 4. The excess exposure to the sunlight.



Figure 5. The difference between fresh and dry eggplant in terms of length and color.



Figure 6. Thickness of digging fresh eggplant.

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