QUALITY CHANGE OF HOT AIR AND FREEZE DRIED STRAWBERRIES

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Short shelf life and seasonal nature of strawberries require a preservation method without changing the sensory attributes such as texture, color, geometry and taste of processed fruits. The objective of this research was to assess the strawberry cultivar having appropriate drying performance, comparing quality attributes change from raw material to dried product. Hot air drying (70°C for 10 h) of strawberries (Cvs. Albion, Monterrey, Camarosa, San Andreas, Portola) in a Proctor tray dryer showed a constant drying period followed by a falling rate period. Samples were taken at 0, 1, 3, 5 and 10 h intervals and color (Hunterlab Color Quest), texture (Instron Universal Testing Machine), geometry (Vernier device), rehydration at 5 and 20°C and tissue structure (Zeiss Axiostar Plus) were measured. Highest overall quality retention was achieved by San Andreas cultivar. Color change of hot air dried strawberries was 12.34 compared to 9.09 for freeze dried species. After one hour of drying a strong decay of about 90% was found for the Young modulus of fresh fruit (0.307 MPa). A similar decay of 40% of the rupture force of fresh fruit (1.212 N) was measured for both hot air and freeze dried strawberries. However, freeze dried strawberries showed a better rehydration performance (rehydration coefficient of 7.53%) compared to hot air dried strawberries (rehydration coefficient of 5.24%) due to less structural tissue damage.