

## **Microwave-Vacuum Drying and Quality Characteristics of Cherries**

A. Opoku

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Sweet cherry is a fruit that provides a good source of fibre, vitamin C and low in fat. It possesses high amounts of anthocyanins and other phytonutrients with antioxidant capacity. Since there is an increasing trend towards the promotion of fruits and vegetables as a healthy diet for the prevention of heart disease, diabetes, obesity and certain cancers. There is the need to ensure the availability of the produce throughout the year. In order to ensure all year availability of sweet cherry, it is imperative to dry the fruit so as to maintain its quality, nutritional value and longer shelf-life. Drying of cherry fruits has the added advantage of reducing the cost of packaging, storage and transportation. Conventionally, convective air drying has been used to dry fruits and vegetables. However this method of drying is energy inefficient and its associated longer drying times may lead to reduction in product quality. Microwave system rapidly heats dielectric materials and it is used in drying, heating, and food/feed processing operations. Microwave drying is rapid, uniform and energy efficient compared to convection drying. Combining microwave and vacuum drying can produce faster drying process and improve product quality. Microwave-vacuum drying can minimize oxidation, discolouration and chemical change during drying and energy can be used efficiently. To better understand the microwave-vacuum drying of sweet cherries, the drying characteristics should be studied. Knowledge of the drying characteristics would help to improve the product quality and efficient operation of the drying systems. The objective of this study will be to investigate the drying characteristics of sweet cherries using a microwave-vacuum drying system. The experiment would be conducted at different microwave power, vacuum and moisture content levels using a microwave-vacuum dryer. The quality (colour, water activity and sugar content) of the cherries will be measured before and after microwave-vacuum drying and compare to convective drying.