

## Abstract

### Project 4.1.3 Processing for a Purpose

Food preservation extends shelf life and protects food products from spoilage. Strawberries are a fruit in high demand however the fruit has a very short shelf life and is seasonal in nature. Therefore, due to these limitations the food industry often needs to rely upon preserved strawberries in lieu of fresh strawberries. Are all strawberry preservation methods suitable to replace fresh strawberries? The purpose of the, "Processing for a Purpose" experiment was to evaluate strawberries preserved by different preservation methods as potential replacements for fresh strawberries. Dried, frozen, freeze dried, and canned preserved strawberries were evaluated for sensory qualities in a strawberry topping recipe. Chemical and physical changes as well as sensory qualities in the preserved strawberries versus fresh strawberries were documented.

Evaluators tested canned, dried, frozen and freeze dried strawberries for physical and chemical change as well as sensory qualities of appearance, texture, smell, taste and percentage Brix using a Brix refractometer. The frozen strawberries were chosen as the best replacement for fresh strawberries due to their appearance, aesthetics, and their Brix content (7.0 Bx) being closest to the fresh berries (6.5Bx). The canned strawberries were chosen as the 2<sup>nd</sup> best replacement with an excellent color and taste however the Brix reading,( 21-23Bx) was much higher than the fresh strawberries(6.5Bx). The freeze dried and fried strawberries were unacceptable replacements for fresh strawberries due to inferior sensory characteristics.

Preservation can assist consumers and food manufacturing companies in replacing fresh products. However, preserved products must be fully evaluated to determine if they are suitable from a sensory and aesthetic standpoint. The frozen strawberry as the best replacement for fresh strawberries hypothesis was supported. Therefore, based upon this research frozen strawberries will be used in the Strawberry Shortcake recipe when fresh strawberries are not available.