PROCESS OF PRODUCING BIGNAY (*Antidesma bunius)* FRUIT CONCENTRATE

TECHNICAL FIELD

The present utility model relates to a fruit processing and preservation more particularly to a process of producing bignay (*Antidesma bunius)* fruit concentrate.

BACKGROUND

The currant tree (Antidesma bunius), locally known in the Philippines as bignay, is a fruit-bearing tree under the Phyllanthaceae family, native to Southeast Asia and northern Australia. The tree produces small, round berries that grow in grape-like clusters and ripen unevenly, resulting in a variety of colors on a single branch—ranging from pale yellowish-green to red and deep black. Bignay berries are tart when unripe, gradually developing a sweet flavor as they mature, with a taste profile comparable to cranberry.

Traditionally, bignay is processed into vinegar, wine, and brandy. It is also made into jams, jellies, and preserves. The fruit is a rich source of calcium and contains moderate amounts of iron. In addition to its fruit, bignay leaves are edible when young and are commonly used in salads. The tree bark can be processed into durable fibers suitable for rope-making, and in some Southeast Asian regions, the leaves are used in folk remedies for snake bites.

Bignay trees can grow up to 50 feet tall, with wide-spreading branches and evergreen leaves. They are dioecious—male and female flowers grow on separate trees, necessitating the planting of one male tree for every 10–12 female trees to ensure pollination. The berries are typically harvested from February to September.

Despite its nutritional and functional potential, bignay remains underutilized, with much of its harvest subject to postharvest losses due to limited processing and preservation technologies. With the growing demand for healthy, organic, and functional food products globally, bignay represents a valuable but largely untapped resource for developing high-value, shelf-stable food products.

SUMMARY OF THE UTILITY MODEL

The present utility model relates to the food processing industry, particularly to the method of producing fruit juice concentrate from ripe bignay fruits, a native and underutilized tropical fruit of the Philippines.

The primary technical problem addressed by this utility model is the postharvest spoilage and limited market availability of bignay fruits due to their high perishability and seasonal harvest window. In many rural communities, a significant portion of bignay harvest is wasted or sold at low value due to lack of proper preservation, leading to economic loss and underutilization of a nutritionally rich resource. Additionally, current traditional processing methods (such as vinegar or wine-making) offer limited product diversity and do not adequately address year-round market demand.

This utility model provides a novel and practical solution by offering a process to convert ripe bignay fruits into a pasteurized fruit juice concentrate. The process not only retains the fruit's high nutritional content but also significantly extends its shelf life, enabling year-round availability and reducing wastage. The resulting product is a stable, high-value concentrate that can be used as a standalone beverage ingredient or as a base for other functional food products.

Unlike existing background technologies that focus primarily on wine, vinegar, or jam production, this utility model introduces a versatile and export-friendly product form. The concentrate can be easily stored, transported, and incorporated into a wider range of commercial food and beverage applications, aligning with modern consumer preferences for healthy, convenient, and natural products.

DETAILED DESCRIPTION

The process of producing the present utility model starts from the selection of ripe bignay (*Antidesma bunius)* fruits. The fruits were washed thrice under clean, running water to remove dirt. The fruits were then crushed using a chopper.

The chopped fruits were then squeezed with the use of cheesecloth to extract 1 liter of juice. The juice was then filtered using a stainless strainer lined with cheesecloth. The filtered juice was transferred to a casserole. One kilogram of sugar is added to the

juice, and combined until the sugar dissolved to form a mixture. The mixture was then pasteurized at 60-65°C for 5 minutes, while stirring continuously.

Next, the mixture was removed from the fire and dispensed in sterilized bottles while hot. The bottled fruit concentrate were then covered with caps. The bottled concentrate was then steamed for 15 minutes, and then left to cool. Finally, the bottled concentrate were sealed and labeled.

The present bignay fruit concentrate made has the following composition:

Ingredients	Amount
ripe bignay fruit juice	1 liter
sugar	1 kilogram.