

Product Development: Black Berry Fruit Jam

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Abstract— The creation of blackberry jam was accomplished with the use of dates, oats, and apples, all of which have a wealth of health benefits. People are searching for a method that makes jams without any additional preservatives. Here, the jam was made entirely without the need for additional preservatives. Here, the jam was made entirely without the need for additional preservatives. In addition to preventing cancer and other cardio metabolic concerns, this may benefit many diabetics. Additionally, each of the remaining products has unique qualities of its own, such as pectin, fibre, minerals, vitamins, etc. Because there are no preservatives to extend the jam's shelf life, its short shelf life is due to external factors. Additionally, dates are one of the ingredients in the jam that give it its sweet flavour. Additionally, it keeps the jams appropriate sweet. Blackberries constituted the key component in the jam, a few additional nutrients can be found in each one hundred grams of the blackberry fruits such as carbohydrates, lipids and protein. Additionally, apple and blackberries, which are high in vitamin C, may assist cancer. Dates are high in micronutrients that support bone wellness, such as the metal copper, manganese, magnesium, and selenium. Oats are high in fibre, and this could help the jam have the right consistency.

Index Terms: Black berry, anthocyanin, Ellagitannins, selenium.

I. INTRODUCTION

Jam produced from blackberry fruits is known as blackberry jam. Since blackberries have high pectin content by nature, making a basic jam without additional pectin is simple. The genus *Randia L.* was initially recognised in 1830 (Gustafsson, 1998), but little is known about the fruit of Blackberry Jam, including its nutritional value, botanical compounds makeup, and functional qualities. All things considered, our findings provide insight into the nutritional worth and potential uses of blackberry jam. [1] Jam is a highly favoured commodity among these offerings. [2] However, little study time has been paid to wild variations that are widely grown within tropical highlands; instead, most research has concentrated on commercial types grown in temperate climates. This amounts to over 25% of the global production of blackberries. These variations are distinguished by stronger acidity and a unique flavour, which are typically utilised for mixes by the juice industry [3]

Berries are a crucial part of a balanced diet because they include a variety of nutrients, including fibre from the diet, vitamins, minerals, and phytochemicals, which particularly polyphenols. A variety of phenolic chemicals have been detected and measured in two highland tropical blackberries recently. The two primary classes were anthocyanins and ellagitannins. A diet high in polyphenols has been linked to several health advantages, such as reduced inflammation, enhanced vascular and endothelial health, improved overnight serum glucose, favourable effects on the bacteria in the gut, and altered energy metabolism. As a result, polyphenols are useful for promoting cardio metabolic health, lowering diabetes type 2 and other metabolic syndrome associated risks, and maybe preventing Alzheimer and Alzheimer's disease [4, 5, 6].

Due to their limited shelf life, blackberries are mostly utilised as raw materials in the food sector. Despite the widespread usage of blackberries in processed foods, little is understood regarding how the process and storage affect the chemical composition of these goods. Multiple research studies have demonstrated that eating blackberries on a daily basis is an incredibly important source of nutrients that are beneficial to health. Over 30% of deaths could be avoided with dietary changes, including consuming more whole foods. Because of the significant number of antioxidants of blackberry fruit, which can normalise anxiety antioxidant and inflammatory levels, diminish the likelihood of developing cancer and cardiovascular complications, and show beneficial effects towards oesophageal, colon, and cancers of the mouth, a great deal of study has been conducted on this fruit. [7]

II. MATERIALS & METHODOLOGY

The Raw ingredients like Apple, Blackberry, oats, Dates and water. Soak 50gm of oats, 5 to 6 dates and 100gm of dried blackberry in water for 60 mins, Boil 1 apple till it gets softer and crush it, Grind the soaked oats, blackberry, and dates in to a fine mixture, In a Pan add the blackberry mixture stir it on low flame gently, Now add oats milk gently stir it continuously. Add dates mixture for sweet taste, stir it continuously till the consistency appears, if there is any need add 1 teaspoon of honey for sweetness. By mixing all the ingredients Jam was prepared with good consistency, Cool the jam at room temperature, fill the jam into the Glass jars for preservation or next serve.

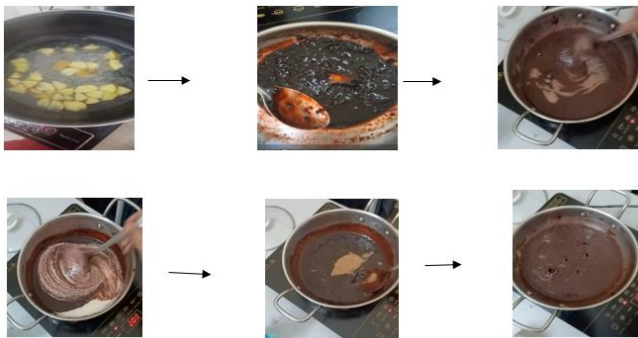


Fig 1. Preparation of Black berry Jam

III. NUTRITIONAL PROFILE

SI No	Ingredients	Protein (g)	Fats (g)	Carbohydrates (g)	Energy (K.cal)
1	Blackberry (100g)	0.92	0.63	10.64	227
2	Dates (25g)	1.18	0.41	16.98	299.25
3	Apple (80g)	0.31	2.06	13.95	267
4	Oats (50g)	6.8	3.8	31.4	187

IV. NUTRITIONAL AND HEALTH BENEFITS

Indian blackberries have anti-carcinogenic qualities because they are strong in flavonoids like anthocyanins and phenolic components like Ellagic acids. Because of their antioxidant properties, they help to eliminate the free radicals that are present in the human body, which stops the growth of the main cause of cancer. There have been reports that blackberries can help prevent lung, oesophageal, skin, and colon cancer, among other cancers. Indian blackberries are a great source of vitamins and minerals that inhibit the growth of tumours and the production of cancerous cells. The ability to fend off oxidative damage is essential to the management of a number of ailments. [8] Indian blackberry has great heart benefits as well. Regular use of Indian blackberries has been shown to promote heart health. They reduce the risk of cardiovascular diseases because of their high anthocyanin content. It also contains large levels of dietary fibre and magnesium, which both lessen the risk of cardiac arrhythmia and heart attack by preventing blood vessel obstruction and promoting continuous blood flow. [9] In the areas where the dates are farmed, dates are a staple food for the local populace. Residents of the nations where this fruit is imported also include it in their regular diets. [10] Among the dried fruits, dates contain the highest concentration of polyphenols, according to a significant result. [11] The redox characteristics of phenolic compounds, which might be crucial in absorbing and neutralising free radicals, give rise to their antioxidant action. [12] Apple eating has been positively associated with overall pulmonary health and inversely linked with asthma. A recent Australian study with 1600 adults found that eating apples and pears was linked to a lower risk of developing asthma and a reduction in bronchial

hypersensitivity, but eating fruits and vegetables in general was not linked to the development or severity of asthma. [13] Consuming apples has been directly associated in several studies with a lower risk of cancer, particularly lung cancer. Fruit and vegetable intake was linked to a 21% lower risk of lung cancer in women, but not in men, in the Nurses' Health Study and the Health Professionals' Follow-up Study, which included approximately 77,000 women and 47,000 men. [14] In addition to chronic illnesses, apples can be used to fight other global health problems. Crude extracts from immature apples have been demonstrated to actually block the cholera toxin's enzymatic activity in a dose-dependent way. Furthermore, in a dose-dependent manner, apple extract decreased the fluid build-up caused by cholera toxin. [15] Oats hold a special place among whole grains due to their many health benefits, which are obtained through advantageous physiological responses to fight NCDs that are spreading like wildfire. Oats are rich in macro and micronutrients, soluble fibre (β -glucans), and the recently identified oat polyphenolics, which make them a desirable addition to a diet. This chapter describes the health advantages of oats in relation to diabetes, coeliac disease, and CVDs. [16]

V. CONCLUSION

As many studies have shown that the daily consumption of blackberries is an exceptionally essential source of health-promoting substances. Dietary improvements, particularly increased consumption of plant-based foods, may prevent more than 30% of all fatalities. Blackberry fruit has been the subject of extensive research due to its high antioxidant content, which can normalize stress oxidative and inflammatory levels, as well as reduce cancer risk and

cardiovascular complications. And remaining ingredients are oats, apples and dates, studies indicate that oat bran was shown to decrease gastrointestinal symptoms and aid digestion in people living with ulcerative colitis (UC). Dates offer an impressive array of nutrients and potential health benefits, their fibre, antioxidants, minerals and plant compounds may boost digestion, brain function, heart health, fertility and more. Adding apples to the diet can reduce the risk of heart disease or cancer, the top two leading causes of death in the United States.

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