



Development And Standardization Of Probiotic By Using Jamun Seed And Pulp

1. Aarohi Sharma 2. Dr. Neelima Garg
3. Dr. Neetu Singh 4. Shashikant Tripathi

Student Of Babasahebhimrao Ambedkar University, Iii Semester Of Masters, Head Of Department,
Faculty Of Food Science And Technology.
Food science and technology, babasaheb Bhimrao Ambedkar university (central university) vidya vihar,
Raibareli road, Lucknow, India.

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Abstract: *Aim for making the jamun probiotic is to make people aware that India is a land full of natural products and from which we can able to make natural products that are healthy and less risky for human consumption. Human body is the most complex material on the earth therefore it is very much accurate if the body consume the products that are made naturally and are obtained by nature. The progress of jamun probiotic in food industry can change the perception of people and there are more chances that people will try to move from artificial to natural. Jamun are popular among alternative medicine system to control different diseases such as diabetes, cardio-vascular diseases and gastro-intestinal disorders. The most important aspect is to develop probiotic using jamun seeds and its pulp with the help of lactobacillus which is kept under the room temperature while the processing of it and once it was made it has to kept under the refrigerator temperature. The jamun probiotic has been compared with the other probiotics which are seen in the industrial market.*

The physical and textural properties of jamun probiotic is very determined as it has to very specific while blending with lactobacillus. The quality of product is determined with the help of sensory evaluation. In sensory evaluation (60% jamun%,30% water,10% lactobacillus) secured maximum score for colour, taste, flavour, and acceptability.

Key Words: jamun probiotic, natural products, healthy, human consumption, human body, material.

JAMUN (*Syzygium cumini*) are generally known as Malabar plum ,java plum, black plum or jambolana. Jamun as a probiotic is something very new for our research food industries for all over the world. Raw fruit of jamun is 83% water, 16% carbohydrates, 1% protein, and contains negligible fat. In a 100 gram reference amount, the raw fruit provides 60 calories, a moderate content of vitamin C, and no other micronutrients in appreciable amounts

This could be something very new in food industries as we know that jamun itself is highly productive and beneficial product and if it is taken as a probiotic by a human body then the intake will be highly beneficial as the jamun will work as a probiotic in our body.

Probiotics are live microorganisms that have health benefits when consume. These are generally beneficial bacteria provide all sorts of benefits to the brain and immune system. They may

improve digestive health, reduce depression and promote heart health. Some evidence suggests they may even give you better-looking skin. Probiotics are made of good live bacteria and/or yeasts that naturally live in your body. You constantly have both good and bad bacteria in your body. When you get an infection, there's more bad bacteria, knocking your system out of balance. Good bacteria help eliminate extra bad bacteria, returning the balance. Probiotic-supplements are a way to add good bacteria to your body. This 2020 year is a pandemic for our world where health has become an important asset for every individual around us where natural products like jamun with probiotic factors with much high effectiveness can really help to build up the immunity so strong that no harmful microorganism can cause serious effect on body. It is detoxifying and help in maintaining natural urination and sweating. It also acts as liver stimulant, digestive, coolant and purifier. Jamun probiotic help in maintenance of



glucose level .it has been found effective in reducing the postprandial rise in the blood glucose level and in improving glycaemic control.

MATERIAL AND METHODOLOGY:

For a sample product of jamun probiotic take 50 gms of fresh jamuns and wash them with KMS. After washing mix, them with clean water and put them mixed in air tight container. After few days add the cultured lactobacillus bacteria and mix it and again close with no air passing through it. After few days' liquid formation can be seen with air bubbles which can be further collected safely via filtration process. Rest pulp can be further used in making candies or toffies.

TREATMENT DETAILS:

Carbs	14 g
Dietary Fibre	1 g
Sugar	5 g
Fat	0 g
Saturated	-- g
Polyunsaturated	-- g
Monounsaturated	-- g
Trans	-- g
Protein	1 g
Sodium	40 mg
Potassium	79 mg
Cholesterol	-- mg
Vitamin A	-- %
Vitamin C	45 %
Calcium	2 %
Iron	4 %

Percentages are based on a diet of 2000 calories a day.

PROCESSING OF RAW MATERIAL:

Jamun seeds were not separated by the pulp. They are simply washed by water and later by KMS and are wisely picked so that greater amount of nutrient can be extracted. Then the seed washed in water and dried in tray dryer at 60 C for 48 hours still complete drying and ground the seed in pulveriser to fine powder of average particle size 0.58 mm after the total process. The proposed research was carried out in the food microbiology, Indian institute of subtropical horticulture, Lucknow.

RESULT AND DISCUSSION: The jamun

probiotic were prepared by making different proportion of jamun and lactobacillus of average particles size 0.58 mm. Then the physical properties, calorific value, and textural properties are measured.

CALORIFIC VALUE: The calorific value of the developed probiotics is used by bomb calorimeter. The calorific value of probiotic is between 402.23 to 482.68 kcal/100g.

SENSORY ANALYSIS: Sensory analysis has been carried out in bbau laboratory of department. Product of different treatments was analysed by different subjects in our college's faculty and students.

JAMUN, NUTRITIONAL VALUE PER

100 g.m.s

ENERGY	- 251 KJ
CARBOHYDRATE	-15.56 g
FAT	-0.23 g
PROTEIN	-0.72 g
WATER	-83.13 g
VITAMIN A	- 3 IU
THIAMINE (VIT B1)	-0.006 mg
RIBOFLAVIN (VIT B2)	-0.012 mg
NIACIN (VIT B3)	-0.260 mg
PANTOTHENIC ACID (VIT B5)	-0.160 mg
VITAMIN B6	-0.038 mg
VITAMIN C	-14.3 mg
IRON	-0.19 mg
MAGNESIUM	-15 mg
PHOSPHORUS	-17 mg
POTASSIUM	-79 mg
SODIUM	-14 mg
CALCIUM	-19 mg

BENEFITS OF JAMUN FRUIT: jamun

is highly nutritious, refreshing, and succulent fruit flooding the summer market has innumerable health benefits. commonly known as java plum of Indian blackberry in English. The outer layer of the fruit appears to be blackish or dark purplish in colour and has a distinct sweet taste with sour and astringent undertones. Black plums are also low on calorie count with only 3 or 4 calories compared to other berries and is an excellent source of vitamin C, carbohydrates, protein, iron, magnesium, potassium, and few phytochemicals. The fruit id diuretic, anti-



scorbutic, and carminative, in properties and is a rich source of polyphenolic compounds. Ayurvedic strongly recommend this berry for treating various conditions related to heart, arthritis, asthma, stomachpain, bowel spasm, flatulence and dysentery. The diuretic effects of jamun flushes toxins out of the kidneys, while the high fibre content aids in digestion and prevent nausea and vomiting. Several studies show that the high alkaloids content present in the jamun is effective in controlling hyperglycaemic or high blood sugar. Apart from the fruit, theseed, leaves and bark are useful in reducing the high levels of blood sugar in body.The seed can be consumed in the form of powder or churna. These days, the goodness of jamun tree, bark, leaves, fruits are also being integrated into health supplements that are available in the form of tablets and capsules.

BENEFITS OF JAMUN PROBIOTIC:

1. **LOW ON CALORIES:** jamun id the first choice for the low-caloriediet as it has a very minimal amount of glucose and fructose. With sucrose completely absent, it makes an ideal snack or fruit for those suffering from diabetes and is highly recommended for those on weight loss diet plan.
2. **FIBRE RICH:** jamun is loaded with the fibre that prevents chronic diseases, aids in digestion and cures several gastrointestinal problems like constipation, bowel disorders, nausea, diarrhoea and dysentery.
3. **LOADED WITH VITAMIN C:** jamun has been the excellent source of vitamin C has numerous benefits. The antioxidants properties of vitamin C is healing wounds, strengthen teeth, bone and cartilage. It is widely referred as an immune booster as it prevents several respiratory infections like common cough, asthma etc.
4. **HIGH ON IRON:** jamun being loaded with iron is highly beneficial and is recommended for people suffering from anaemia. The abundance of iron in jamun make it one of the purifying blood fruit, increases red blood cells and haemoglobin count for blood. Jamun is must fruit for the women and girls during menstruation to balance the huge amount of blood loss. It helps in recovery the body from weakness and fatigue.

5.GOOD FOR DIGESTION AND

IMMUNITY: Jamun probiotic are safe for digestive ecosystems differ. People with constipation have different ecosystems Trusted Source of microorganisms in their intestines than people without constipation. What we don't know is if constipation is the cause or effect of these different ecosystems.

6.THEY LOWER THE PH LEVEL: Probiotics lower the pH level Trusted Source in the colon, which might help stool move faster through it.

7.THEY MAY RELEIVE ANTIBIOTIC - RELATED DIARRHEOA: Probiotics may be especially helpful Trusted Source in relieving diarrhoea associated withantibiotics and Clostridium difficile. The idea is that probiotics replenish the good bacteria that antibiotics might have killed.

8.THEY CANHELP ABSORB PROTEIN: Probiotics can help Trusted Source you better absorb the protein in your diet, as well as other vitamins and nutrients .

BENEFITS OF PROBIOTIC: Probiotics are a combination of live beneficial bacteria and/or yeasts that naturally live in your body. Bacteria is usually viewed in a negative light as something that makes you sick. However, you have two kinds of bacteria constantly in and on your body - good bacteria and bad bacteria. Probiotics are made up of good bacteria that helps keep your body healthy and working well. This good bacterium helps you in many ways, including fighting off bad bacteria when you have too much of it, helping you feel better.

Probiotics are part of a larger picture concerning bacteria and your body - your microbiome. Think of a microbiome as a diverse community of organisms, such as a forest, that work together to keep your body healthy. This community is made up of things called microbes. You have trillions of microbes on and in your body. These microbes are a combination of:

- Bacteria.
- Fungi (including yeasts).
- Viruses.
- Protozoa.

Everyone's microbiome is unique. No two people



have the same microbial cells - even twins are different. For a microbe to be called a probiotic, it must have several characteristics. These include being able to:

- Be isolated from a human.
- Survive in your intestine after ingestion (being eaten).
- Have a proven benefit to you.
- Be safely consumed.

HOW DO PROBIOTIC WORKS: The main job of probiotics, or good bacteria, is to maintain a healthy balance in your body. Think of it as keeping your body in neutral. When you are sick, bad bacteria enters your body and increases in number. This knocks your body out of balance. Good bacteria work to fight off the bad bacteria and restore the balance within your body, making you feel better.

Good bacteria keep you healthy by supporting your immune function and controlling inflammation. Certain types of good bacteria can also:

- Help your body digest food.
- Keep bad bacteria from getting out of control and making you sick.
- Create vitamins.
- Help support the cells that line your gut to prevent bad bacteria that you may have consumed (through food or drinks) from entering your blood.
- Breakdown and absorb medications.

This balancing act is naturally happening in your body all of the time. You don't actually need to take probiotic supplements to make it happen. Good bacteria is just a natural part of your body. Eating a well-balanced diet rich in fibre every day helps to keep the number of good bacteria at proper levels.

WHAT ARE MAIN TYPES OF PROBIOTICS USED FOR HUMAN CONSUMPTION: Though there are many types of bacteria that can be considered probiotics, there are two specific types of bacteria that are common probiotics found in stores. These include:

- Lactobacillus.
- Bifidobacterium.

Probiotics are also made up of good yeast. The most

common type of yeast found in probiotics is:

- Saccharomyces boulardii.

FUTURE ASPECTS OF JAMUN

PROBIOTIC: Probiotics are live microorganisms that benefit human health when administered in sufficient dosages, and are widely used as therapy to re-establish unbalanced human microbiota. They are composed of various microorganism strains, most commonly lactic acid bacteria such as Lactobacillus, Bifidobacterium, and Streptococcus, or yeast Saccharomyces boulardii, which are beneficial for human health. These microorganisms have the ability to resist bile salts, gastric acids, and pancreatic enzymes, as well as to colonize the intestinal tract. Thus, they are the optimal choice for probiotics. The approach of treatment of lactose intolerance and certain types of cancer by probiotics is currently being researched. Probiotics are also used to prevent pathogenic bacteria from colonizing the intestine. The proof of the connection between diseases or certain medical conditions and probiotics as therapeutic agents is interpreted by mechanisms of action. Currently, probiotics are a very popular field among researchers. The main aim of this research is to establish and review potential microorganisms that have probiotic bacterial properties and in research environment probiotics made from high valuable fruits can be very much effective for the human health because as it is scientifically proven that fruits are the richest source of nutrients and are very good for the flora of gut and body immunity when these nutrients are taken with the good bacteria for good digestion.

CONCLUSION: What are the benefits of taking probiotics? Bacteria have a reputation for causing disease, so the idea of tossing down a few billion a day for your health might seem - literally and figuratively - hard to swallow. But a growing body of scientific evidence suggests that you can treat and even prevent some illnesses with foods and supplements containing certain kinds of live bacteria. Northern Europeans consume a lot of these beneficial microorganisms, called probiotics (from pro and biota, meaning "for life"), because of their tradition of eating foods fermented with bacteria, such as



yogurt. Probiotic-laced beverages are also big business in Japan.

Some digestive disease specialists are recommending probiotic supplements for disorders that frustrate conventional medicine, such as irritable bowel syndrome. Since the mid-1990s, clinical studies suggest that probiotic therapy can help treat several gastrointestinal ills, delay the development of allergies in children, and treat and prevent vaginal and urinary infections in women.

Not all probiotics are the same. Different strains of the bacteria have different effects. For example, one strain may fight against cavity-causing organisms in our mouths and don't need to survive a trip through our guts.

Research has been promising for these friendly critters. Potential benefits of probiotics have been seen in the treatment or prevention of

- diarrhoea
- irritable bowel syndrome
- ulcerative colitis
- Crohn's disease
- H. pylori (the cause of ulcers)
- vaginal infections
- urinary tract infections
- recurrence of bladder cancer
- infection of the digestive tract caused by Clostridium difficile
- paucities (a possible side effect of surgery that removes the colon)
- eczema in children.

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