

1. Details of Incubatee:

1.1 Details of the Host Institute (HI)	Amrita Vishwa Vidyapeetham , Amrita Vishwa Vidyapeetham, Amrita Nagar PO, Ettimadai, Coimbatore - 641112, Tamil Nadu , 04222685005 , cir@amrita.edu , 9843946533	1.2 Name of the Business Incubator (BI)	R. Krishnan , Head Entrepreneurship Development , r_krishnan1@cb.amrita.edu , 9841319217
1.3 Category of the Incubatee	Others	1.4 Incubatee Name	Vishnupriya Balasubramaniyam
1.5 State	TAMIL NADU	1.6 District	COIMBATORE
1.7 Email Id	bvishnupriya_bt@kongunaducollege.ac.in	1.8 Mobile Number	9994925042
1.9 Category	OBC	1.10 Gender	Female
1.11 Address	PG and Research Department of Biotechnology, Kongunadu Arts and Science College, Coimbatore.		

2. Details of Idea:

2.1 Title of proposed idea/innovation	Sugar free jelly from the by-product of Beetroot
2.2 Whether the idea involves use of existing intellectual property or not, give brief detail there of	No. The present invention relates to Fiber to sugar free jelly from the by-product of Beetroot. Beetroots and beetroot juice have been associated with numerous health benefits, including improved blood flow and lowers blood pressure. When compare to the beet root flush and crown, peel is having rich phenolic compounds, phytochemicals, antioxidants and betalain. The present invention discloses about beet peel based jelly preparation thereof. This jelly is completely naturally processed and more beneficial to the consumers due to the peel containing a notable amount of dietary fiber, a good source of potassium with the highest betacyanin content providing positive and satisfied insights to the buyers and eaters. This product can be used as a spreader for toast and plain bread as well.
2.3 Briefly explain newness/uniqueness of the innovation	Jelly is the attractive food product and one of the favourite recipes for all ages. In Jelly preparation, peel extract is one of the important components, which is more beneficial to the consumers due to its rich source of biologically active substances. Beet root peel contains rich source of phytochemicals, pigments and antioxidants and higher amount of phenolic compounds. It is a nutraceutical contains natural pigment betacyanin which are the most prominent agents of blood purification, antioxidant, anticancer and anti ageing.
2.4 Concept & Objective	Objectives Development of sugar free natural jelly from Beetroot peel for all ages. To promote it as an additional processing practise among farmers to increase their revenue with scientific background. Concept The proposed concept relates to sugar free jelly from the by-product of Beetroot. When compare to the beet root flesh and crown, peel is having rich phenolic compounds, phytochemicals, antioxidants and betalain. This is an attractive food and one of the favourite recipes for all ages and naturally processed with universal solvent for extraction which facilitates digestion and intestinal transit due to its high-water content. It has been found that conventional beetroot-based jelly products are mixed with the primary ingredient as gelatin and it causes heart burns especially decreasing HDL cholesterol in blood. This issue can be solved through the present idea by providing jelly from the beetroot peel. It will increase the haemoglobin in blood. This jelly is completely naturally processed and more beneficial to the consumers due to the peel containing a notable amount of dietary fiber, a good source of potassium with the highest betacyanin content providing positive and satisfied insights to the buyers and eaters. This product can be used as a spread for toast and plain bread as well.

2.5 Specify the potential areas of application in industry/market in brief	The primary market area for jelly is organic food manufacturing industry where the rising consciousness amongst people for using organic food products. Given the kind of innovation coupled with this rising demand, organic food industry is yet to witness a full-fledged evolution. However, to promote agriculture and hence to increase the revenue of farmers, some other eco friendly co farm practices, like agriculture, vermicomposting, floriculture, the proposed beetroot jelly manufacturing will also be encouraged with scientific background.		
2.6 Briefly provide the market data for the potential idea/ innovation	People have started paying more attention to their health, the nutrient content and quality of the food they eat. According to the report of Market in India - Outlook to 2024 Jams , Jellies Preserves market in India registered a positive compound annual growth rate (CAGR) of 8.24 during the period 2014 to 2019 with a sales value of INR 5,237.85 Million in 2019, an increase of 7.98 over 2018 and proposed many opportunities for new start-ups. The proposed jelly is financially as well as technically feasible. The active compound of Betalains pigment in the peel has antioxidative, anti-inflammation, anticancer, blood pressure and lipid lowering, also anti diabetic and anti-obesity effects. Hence, these products have very good market potential. It's a Healthy choice of eating favourite snack for kids and elders. The rising demand for organic food products and the health benefits has supported the growth of our product in the market.		
2.7 Name and details of Mentors	Dr V Agalya, Professor and Associate Head R D, New Horizon College of Engineering, Bangalore.	2.8 Experience and Qualification of Mentors	ME., Ph.D 19 years
2.9 Contact Details of Mentors	9840986507 , agalya.vetri at the rate gmail.com	2.10 Current Development Status of innovation	Formulation 1 and Formulation 2 of jelly is prepared at different concentration of raw materials. Based on Nutritional and organoleptic evaluation study, F1 formulation is found to be good proportionate. The technology is validated in the lab and the alpha testing was carried out among internal staff and known audience. Diabetic study will be performed under in vitro and in vivo.
2.11 Expected time of completion of idea	In vitro diabetic study of F1 formulation – 0 to 2 Months. In vivo diabetic study of F1 formulation – 2 to 4 Months. Beta testing – 4 to 7 months. Commercialization – 7 to 9 months.	2.12 Idea Theme	Waste to Wealth creation, Circular solutions & waste management
2.13 Idea Sector	Miscellaneous Sector (Environment, Forests, Water & Sanitation; Foods, Beverages, FMCG, Consumer Goods; Infrastructure, Construction, Housing; IT, ITES, Electronics, White Goods, Telecommunication; Metals, Engineering, Machinery, Automation and Transportation, Automotive, E Vehicles, Railways, Aviation, UAV and any other sub-sector)		
3. Financial requirements:			

3.1 Activity-wise break

Particular/Item	Total idea project cost (Rs. In lakh)	Amount GOI assistance (Rs. In lakh)	Incubatee share (Rs. In lakh)
Technology related Expenditure towards machine usage charges etc., Electricity charges, Procurement of raw material , testing/Calibration charges, other charges essential for development of idea Max (10.00) lakh.	10.000	8.500	1.500
Charges for mentor/handholding supporting team Max (3.00) lakh.	3.000	2.550	0.450
Travelling Expenses or any other item not covered as above may be allowed as per need for development of the idea Max (2.00) lakh.	2.000	1.700	0.300
Total	15.000	12.750	2.250

Approved Activity-wise break

Approved By	Approved Date
PMAC	13/07/2023

Particular/Item	Total idea project cost (Rs. In lakh)	Amount GOI assistance (Rs. In lakh)	Incubatee share (Rs. In lakh)
Technology related Expenditure towards machine usage charges etc., Electricity charges, Procurement of raw material , testing/Calibration charges, other charges essential for development of idea Max (10.00) lakh.	10.000	8.500	1.500
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Total	15.000	12.750	2.250

Ref. No.	INC22BTN008899	5. Summary of the idea. This is the section reviewers read to understand the technical solution. Please state the solution clearly. Reviewers may ask: What is the actual technical advancement or improvement provided by this solution?	The present invention relates Fiber to sugar free jelly from the by-product of Beetroot. When compare to the beet root flush and crown, peel is having rich phenolic compounds, phytochemicals, antioxidants and betalain. It has been found that conventional jelly products are mixed with the primary ingredient gelatin, that can cause skin cancer and heart burns especially decreasing HDL cholesterol in blood. This issue can be solved through the present idea by providing jelly from the beetroot peel. This jelly is naturally processed and is beneficial to the consumers, having a good source of potassium with the highest betacyanin content.
6 (a) Is it a new concept?		YES	
(b) Prior art on the concept, if any	Gelatin is a protein made from animal collagen, usually from cows and pigs. Most of the artificial colorants used in food production are carcinogenic in nature. The present invention is making of jelly from beetroot peel. It is a nutraceutical, fully vegan and no added preservatives and colorants.	7. Main Problem Being Addressed in the Project (Every solution targets a certain problem. Please use this section to highlight the specific problem the solution addresses. This section can be as short or as long as needed to describe the precise problem the solution addresses)	commercial jellies contain high amounts of synthetic colorants sugar or high fructose corn syrup that can be detrimental to one's health. Our proposed product is highly health concern, completely naturally processed and more beneficial to the consumers as it contains notable amount of dietary fiber, good source of potassium with the highest betalain content. Provide positive and satisfied insights to the buyers and eaters.
8. Background for getting the idea?			
a. Who is it for?	People of all ages are the customers of our product. Especially, health conscious parents, persons with environmental conscious, patients - Anemic and Obese, hotels, restaurants, schools, café, dessert shop or any other eating point.	b. What will it do?	The proposed Beet jelly is low in fat, sodium and have absolutely no cholesterol and are an important source of many vital nutrients, including dietary fiber, betalain and potassium. It will be the best choice to the children and best confectionery for patients suffering from Anemic and Obese.

c. Any unique features? Explain?	It is a nutraceutical containing natural pigment betacyanin which are the most prominent agents of blood purification, antioxidant, anticancer and anti-ageing. The packaging material will be the biodegradable corn spathe. Natural, healthy, harmless and prominent healthcare benefits.	9. How simple or complex will the idea's execution or implementation be? What are the risk factors involved in executing the idea?	This innovation is financially as well as technically feasible. It requires very little capital to start in small scale. Unlike other food-based businesses, there's minimal infrastructure required even its perfect for women entrepreneurs. It will have good market potential due to the healthy choice of eating favourite snack, even no gelatin. So making Jellies with high nutritive values and maintaining the shelf life are the important risk factors of the product.
10. How soon could the idea be put into operation? (TRL of prototype)	TRL 4 (Technology Validated in Lab) – Assessed by AMRITA - TEC	11. How much investment would you need for prototyping of the Idea?	Rs.33,633/-

12. (a) How do you intend to protect your idea (i.e. your intellectual property or IP)? Status of IPR (If any)	Indian Patent Applied Patent Application Number: 202141025316 Published Date: 11/06/2021 Patent Publication Number: 24/2021	(b) Related Background This section is used to highlight information that can be used by the reviewers or patent attorney to help put the solution in proper context. You can think of this section as something similar to the introduction section of an academic publication. This section is specifically reserved for other people's work (please include competitive work) as well as your past work that you believe will aid the reviewers in understanding the technical landscape. Data related to or supporting your solution should NOT be in this section, it should be in Section III: "How is this Solution Made and Used."	Jellies are becoming very well-liked in the neighbourhood. According to a qualitative review of the markets low-quality jellies dont provide enough nutrients and seem to be quite dangerous for peoples health. In supermarkets, a new product is available for preparing jelly and jam with less sugar. Vegetable gums are used as thickeners, along with preservatives to stop yeast and mould growth and organic acids to moderate acidity.
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13.How is This Project Made and Used: Please describe in as much detail as possible how the innovation is implemented. This includes details on how you actually make, assemble, synthesize, or build the solution and details on how the solution is used once it is made. Reviewers will ask: How does the technical innovation actually work – or – what is the detailed process to achieve the technical innovation? Please help convince the reviewers with supporting statements using as much of the following that is available: your thoughts, logic, supporting literature, and/or experiments.	The powdered beetroot peel and water in ratio 1:5. 10 grams of powder was added to 50ml of distilled water in a conical flask and extraction was carried out with filtration process. Phytochemical analysis of the aqueous extract of the beetroot peel extract is carried out. The ingredients are Honey, beetroot peel extract, palmJaggery, Lemon, castor oil, and turmeric. Finally, beetroot jelly is prepared by mixing beetroot peel extract with various concentrations of honey and natural gelling agent.
Upload Block diagram/ flow chart/ Circuit Diagram/Pictures	View/Download
Uploaded Minutes of the Selection Committee	View/Download

Application Remarks

Action	Date	Status	Remark
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PMAC	13/Jul/2023 04:14:2 PM	Approved By PMAC	The financial sanction is as approved by the committee in the 4th PMAC meeting. Check your mail and do the needful as instructed on priority basis. This may be treated as most urgent. View/Download
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☒ **I declare that:**

- 1. I have read the entire scheme guidelines and shall abide by all the requirements stipulated therein for seeking financial assistance.**
- 2. I hereby declare that information given above is true to the best of my Knowledge and that I have not withheld/distorted any material fact.**
- 3. Any information/ documents that may be required to be verified shall be provided immediately before the concerned authority.**
- 4. I hereby declare that I have not availed any financial assistance for this purpose from any other scheme from any Central/ State govt. agency.**
- 5. In case the Idea is approved, Host Institute would undertake to make facilities available to carry out the development arrange for the submission of periodic progress reports and other information that may be required by the Ministry.**
- 6. I certify that the accounts of the funds received and spent will be kept and made available on demand, as per scheme guidelines**
- 7. I certify that the funds will be used only for Idea development as per activities defined in Scheme Guidelines & no funds out of this grant will be utilized for any other activity/production purposes.**

MSME Idea Hackathon 2.0 Incubatee
Incubatee Name: Dr. Vishnupriya
Idea No: IDEATN007412

**Idea Name: Sugar free jelly from the by-product
of Beetroot**

Gol Grant	1275000.00
Incubatee share	225000.00
Total Project value	1500000.00
Sanctioned Amount of 70% GOI grant (1st instalment)	892500.00

Sl.No	Particular	Credit	Debit	Balance
I	GOI grant 70%	892500.00		
II.	Category - 1 : Technology Development Charges (70% Grant)	595000.00		
	1. Purchasing raw material (5500+510+1275)		7285.00	
	2. Rental charges for equipment usage		118944.00	
	3. Lab Experimental charges		148500.00	
	Sub Total		274729.00	320271.00
III.	Category - 2 : Mentoring and supporting team Charges (70% Gol grant)	178500.00		
	1. Mentor charges Dr. Agalaya		36000.00	
	2. Supporting team charges - Ms. Preethi (Dec 23 & Jan 24)		31750.00	
	3. Supporting team charges - Mr. Ram Prasad (Dec 23 & Jan 24)		23500.00	
	Sub Total		91250.00	87250.00
IV.	Category - 3 : Travel and other expenses (70% Gol grant)	119000.00		
	Travel expenses		47282.00	
	Contingency - Printing, Stationery (350+1870+250+160)		2630.00	
	Sub Total		49912.00	69088.00
	Utilisation as on 21st Mar, 2024		413261.00	
	Project summary as on 21/03/2024		Balance	476609.00