



उन्नत भारत अभियान Unnat Bharat Abhiyan



PROPOSAL(TECHNOLOGY DEVELOPMENT)

Proposal by:

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Subject expert group: Rural Energy Systems, Indian Institute of Technology Delhi

Title of the product / technology: Development of integrated Multi size and multi item semiautomatic papad and chapatti making machine

Village where it is to be implemented: Bhilawadi

Why is this required: Papad is a thin wafer-like snack food particularly popular in South and South-East Asian countries. It is made from dough containing legume flour along with salt, khar and spices. Either it is toasted or deep fat fried to an attractive crispy wafer like product that is commonly used as an adjunct to a full meal. Chapatti is a popular traditional food in the Indian diet. Its preparation method is cumbersome and unhygienic. The dough prepared by kneading the whole-wheat flour is cut into balls and hand-rolled using pin and plate. The dough sheet thus obtained is baked and allowed to puff. Traditionally these activities were confined to household papad/chapatti making but in view of increasing demand and availability of machinery (mechanization) it has now been developed in cottage and small-scale sector. Manufacturing of Papad is one of the traditional activities in the rural area in the Country. The major drawback of these manual process is the rolling capacity which can produce only about 100 items/hour. Simultaneous serving to a large number of people is a limiting factor. Conventional manually making of these items are causing serious health

issues such as back pain etc. Also conventional machine available in market are made specifically for one item only. Hence, for multiple items there is need to have separate machine. Considering these issues and to overcome various problems, it is necessary to design and develop semiautomatic different item such like papad, chapatti etc making machine which can cater to the large requirement of items in a short span of time with electronic interface system.

Total cost of the product/technology: 100000

Funds raised from gram panchayat or CSR or district/local administration?: No

Details of the funds raised from other agencies: Not applicable

Your role during the execution: To design a machine for multiple size (Roll dia) and different item. To manufacture the designed machine and test the machine. Apply for Patent Planning for mass production (Entrepreneurship)

Your role after installation: Arrange training to the household of the village Tackle the problems during operation of the machine Give wide publicity and market the product Prepare business plan

Brief description: Currently papad production and sale are carried out at home level or as a tiny scale industry, which is mostly in the unorganized sector. Even large producers of popular brands of papads such as "Lijjat" or "Amani" are also home industries. As practiced currently machines are mostly manually operated units, which have minimal capital investment. The working capital needs are met by daily sales of late papad manufacturers, aiming at export markets, are in need of the semi or fully automatic plants and hence are on the lookout for such developments. Demand for papad is seasonal in nature. It peaks during Diwali and in the marriage season and at that time large number of players spring up. The total market is about four tons per day. Automatic chapatti and papad making machine can make 540 to 700 chapattis in one hour, saving a lot of time and labor. The chapattis made by this machine will be totally home like and 100% hygienic. One can use normal wheat flour with this Roti Making Machine for making soft and high in quality chapattis in mass numbers. The chapattis made will surely remain fresh and soft even after few hours. This chapatti and papad making machine is specially designed to give out the best performance in places where these items are needed to be cooked in bulks like religious langars, Industrial canteens, schools, college and Army mess, Tiffin Services and MNC canteens etc. Presently available machines are making single size papad, but for commercial (hotels) purpose larger size papad are required. The integrated system which will have multiple size making items is not available in market. This attempt is to provide a single machine which can make variable size of papad and chapatti items with regular thickness using electronic interface. This machine will have buttons to produce required item in standard size. The required force for different items production will be configured with electronic inputs as per item selected. Features : Portable machine in commercial segment. Adjustable thickness and size functionality Variable speed management for desire output Speed Can maintain seamless universal chapatti size. Simple rugged and very compact Can produce up to 700 Chapattis /hour Size diameter between 4 to 7 inch Requires no special skills to operate. Robust Construction. High Capacity. Versatile and Portable. Eco friendly, no pollution problems. Hygienic production. Energy efficient (Less running cost). Semi-automatic. Aesthetically Attractive. Saves time! Save labour ! Easy Operation! Easy Maintenance! Project PI - Dr. Sharad D.

Patil, Mechanical Engineering Dept. RIT

Impact of this work on learning of students/teachers: Able to design machine linkage and mechanism under given constraints Able to get exposure on hands on experience Able to assemble the machine and test under different conditions Able to apply for patent

Duration of the work: 6 months

Final impact: A single machine for different items A new integrated product will help to increase productivity. This machine will be used for different applications like papad, chapatti, puri, karanji. At the same item making time one person will do another work. Rate of production of papad, puries per hour will increase. Increase rural employability and the healthy business

SEG Coordinator: Dr. Ram Chandra

Comments from SEG/NCI:

Action:

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