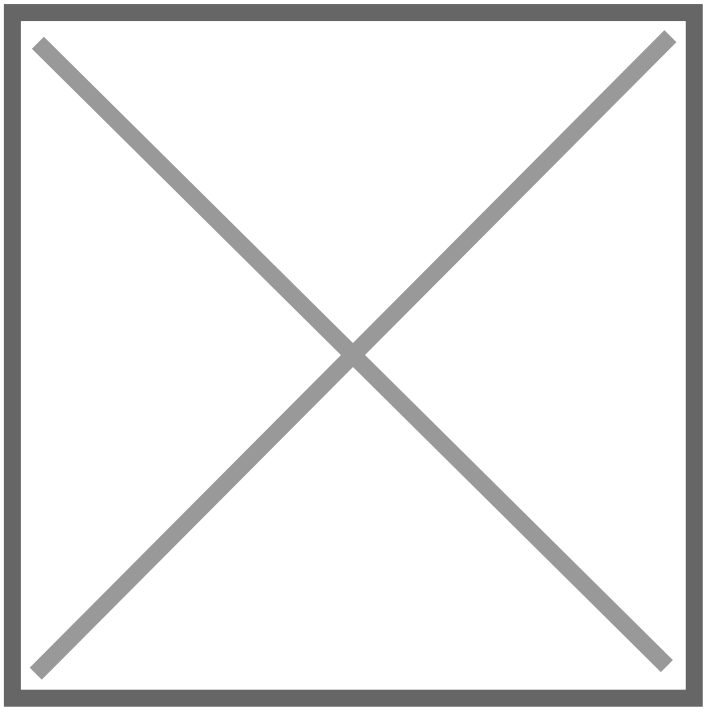
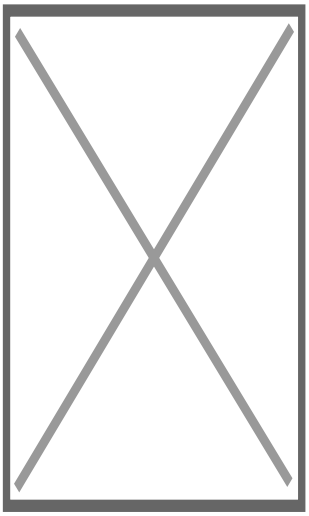
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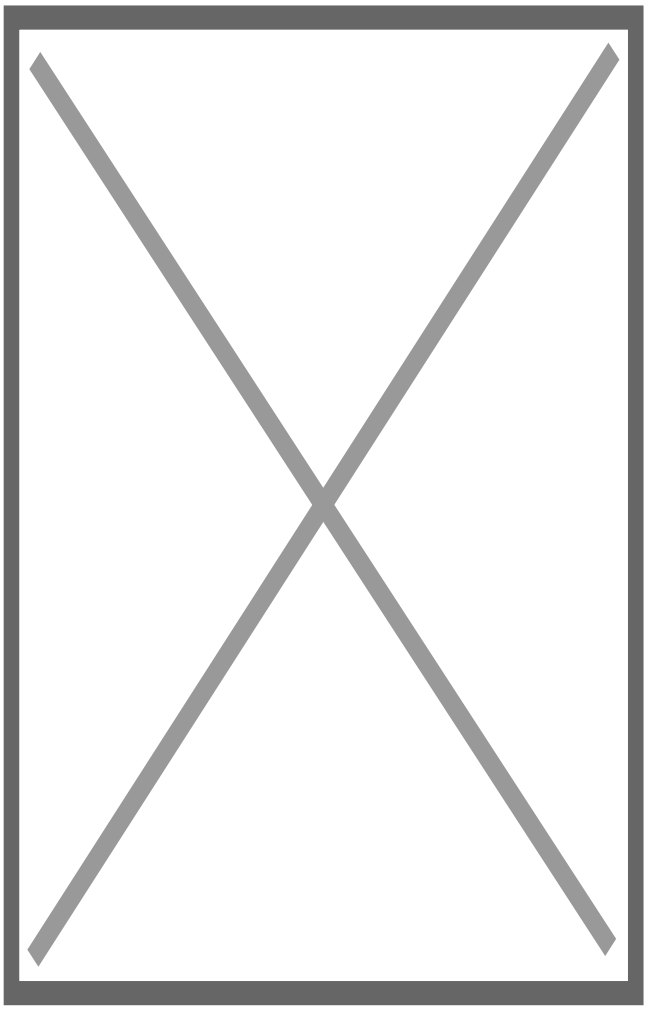
Low-calorie biscuits from banana peels are soon to hit your local supermarket and be a part of the new generation of health foods, if the invention of Rucha, a 20 year-old college student from Kolhapur is anything to go by

It might have been the idea of extracting the best from waste that set Rucha Joshi on a quest to make biscuits from banana peels, something that most of us regard as waste. Rucha, who represented India in the US and Japan, has a patent filed for the CSIR.

Rucha's light-bulb moment came in the middle of a banana market (Itawara) in Nanded where she was struck by the sight of wastage of edible banana peels and a few days later a recipe for cooking vegetable out of ripened banana peels further fuelled the idea. This set her off on a project to use banana peel in biscuits, explore the effect of peel addition on nutritive values of these biscuits, and find acceptance of these biscuits by the society.

The project

She prepared normal biscuits without peel and biscuits containing 10 percent and 20 percent peel pulp. The dough was made by grinding edible vegetable oil, icing sugar, milk powder, custard powder, butter and weight of wheat flour in a mixer to which known weight of banana peel pulp was added and mixed again. It was then molded into desired shape of biscuits and baked in an oven for 30 minutes at 150Â°C.



The advantages

It was found that with increasing peel in biscuits, there is a drop in calories/100 g and fat percentage but increase in carbohydrate percentage respectively. Also the fiber content increased with increasing peel pulp in biscuit, which is beneficial for bowel movement and reduction in cholesterol.

It was also noticed that there was no change in proteins, moisture and ash content.

Thus, with the increase in peel content of biscuits, calories are reduced in the form of fats, which may prove a boon to the calorie conscious people, especially to the diabetic and obese patients. The increase in fiber percentage with increasing peel content in the biscuits indicates its usefulness in preventing constipation and atherosclerosis.

The biscuits prepared before 110 days were tested for fungi and none of them showed the presence of fungi during the incubation period of 72 hours indicating that addition of peel pulp does not make the biscuits prone to fungi growth. It was also found out that the aroma of biscuits containing 10 percent peel pulp has been accepted equally by people along with that of normal biscuits without peel.

Rucha has found out that the use of banana peels in biscuits is also cost-effective. The peels available from the various industries using banana pulp are required to be processed to convert them into pulp, which is a suitable form for addition in dough. This cost of conversion in the form of labor charges, power consumption, plant cost, etc., may require about 2.5 percent of the cost of dough. Hence, due to 10 percent and 20 percent peel addition, cost will reduce by 7.5 percent and 17.5

percent respectively.

Rucha's invention has way to go, if the new generation of health foods hitting supermarkets in India is anything to go by. A case in point is Avestha Good Earth that is developing nutritious alternatives for breakfast, daily snacks, and functional food. She thinks it would be wonderful to come up with a novel product useful to the society, by taking help from companies who are interested to market the product.

Meanwhile, she aspires to work in R&D field of biotechnology, particularly genetic engineering.

Shalini Gupta