



Low cost value added products by using groundnut for human being

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Abstract

Groundnut, also known as peanuts, is considered a very healthy snack. However, it is successfully grown in other parts of the world as well. The name of the plant combines the morpheme 'pea' and 'nut'. In the culinary sense, it is regarded as a nut, but in the botanical sense, the fruit of the plant is a woody legume. Thus, the groundnut is actually a kind of pea. The groundnut is also known by different names like earthnuts, goobers, goober peas, pindas, jack nuts, pinders, manila nuts and monkey nuts. Throughout the world, they are known for their nutrition and health benefits.

Keywords: cost, value, product

Introduction

There are several important roles for peanuts in many areas of the world. A large percentage of the annual peanut harvest is pressed to yield peanut oil, a pale yellow, neutrally flavored oil with a very high smoking point. Peanut oil is ideal for frying, and is widely used in many countries for this purpose. The nuts are also ground into peanut butter, a creamy spread which is popular with people of all ages. Peanuts can be found for sale whole as well, to be eaten plain, sprinkled onto food, or included in various dishes.

Peanuts are rich in nutrients, providing over 30 essential nutrients and phytonutrients. Peanuts are a good source of niacin, folate, fiber, magnesium, vitamin E, manganese and phosphorus. They also are naturally free of trans-fats and sodium, and contain about 25 per cent protein (a higher proportion than in any true nut). While peanuts are considered high in fat, they primarily contain "good" fats also known as unsaturated fats. One serving of peanuts contains 11.5 g unsaturated fat and 2 g of saturated fat. In fact, peanuts have been linked well enough to their heart-healthy benefits. In 2003, the Food and Drug Administration released a health claim recognizing peanuts in helping maintain one's cholesterol. Scientific evidence suggests, but does not prove, that eating 1.5 ounces per day of most nuts, including peanuts as part of a diet low in saturated fat and cholesterol, may reduce the risk of heart disease. Some brands of peanut butter are fortified with omega-3 fatty acid in the form of flaxseed oil to balance the ratio of omega-3 to omega-6 fatty acids.

Objectives

1. To study the socio-economic status of respondents and assess the nutrition parameter of selected respondents and assess the nutritive parameters of selected respondents.
2. To develop the economical recipes for nutritional benefits of human beings.
3. To identify the benefits of consumption of recipes.

Methodology

The study was conducted in Kanpur district of Uttar Pradesh. Six localities such as Vishnupuri, Govind Nagar, Ratanlal Nagar, Swaroop Nagar and Sarvodaya Nagar were selected in this study. 50 women were selected from each locality in the age group 20-25 years. Thus, total 300 respondents were selected in this study. Dependent and independent variables such as age, education, caste, nutrition parameters and acceptability etc. were used.

Results

Table 1: Distribution of women according to family monthly income

| Family monthly income | Frequency | Per cent |
|--------------------------|-----------|----------|
| Up to Rs. 20000 | 14 | 4.7 |
| Rs. 20,000 to Rs. 40,000 | 196 | 65.3 |
| Rs. 40,000 to Rs. 60,000 | 66 | 22.0 |
| Rs. 60,000 & above | 24 | 8.0 |
| Total | 300 | 100.0 |

As the income increases the social and economic status of the family standard also rises, where food plays major role. As the income increases the food status also increases with different variety of food. This results in availability of rich, nutritious diet to the family members. But, this diet may prove too many diseases due to lack of physical activities, out of which heart disease is very common.

Table 2: Consumption pattern of women

| Consumption | Frequency | Per cent |
|-------------|-----------|----------|
| Daily | 3 | 1.0 |
| Weekly | 15 | 5.0 |
| Monthly | 67 | 22.3 |
| Seasonal | 215 | 71.7 |
| Total | 300 | 100.0 |

Food frequency of rural women, season wise, about the selected crops was found higher than women. Women, who are aware about these crops, have knowledge about these crops and also understand importance of these crops, consume

it accordingly. But rural and women eat groundnut whole of the year like in festivals and in fasts (Navratri, Janmashtmi, weekly fasts).

Table 3: Knowledge of nutrients content of groundnut

| Nutrient content of groundnut | Respondents | Nutritive value of groundnut per 100 g |
|-------------------------------|-------------|--|
| Calcium (mg) | 82 (41.0) | 93 |
| Carbohydrate (g) | 73 (36.5) | 16.13 |
| Copper (mg) | 20 (10.0) | 11.44 |
| Fat (g) | 90 (45.0) | 49.24 |
| Fiber (g) | 70 (35.0) | 8.5 |
| Iron (mg) | 50 (25.0) | 4.58 |
| Magnesium (mg) | 55 (27.5) | 168 |
| Manganese (mg) | 20 (10.0) | 1.934 |
| Phosphorus (mg) | 45 (22.5) | 376 |
| Potassium (mg) | 30 (15.0) | 705 |
| Zinc (mg) | 20 (10.0) | 3.27 |
| Protein (g) | 65 (32.5) | 25.80 |
| Sodium (mg) | 12 (6.0) | 18 |

(Figures in parenthesis indicate percentage of respective values)

Five main nutrients required by the body to maintain and repair the tissues namely food energy, protein, phosphorus,

thiamin and niacin. These five nutrients are found in good quantity in groundnuts.

Table 4: Preference with quality of groundnut recipe

| Sl. No. | Selected recipe | Colour | Taste | Texture | Flavour | Appearance |
|---------|--------------------------------------|------------|------------|------------|------------|------------|
| 1. | Rice roti | 55 (18.3) | 60 (20.0) | 48 (16.0) | 60 (20.0) | 45 (15.0) |
| 2. | Ridge curd curry | 66 (22.0) | 76 (25.3) | 67 (22.3) | 75 (25.0) | 60 (20.0) |
| 3. | Potato curry | 89 (29.7) | 92 (30.7) | 70 (23.3) | 90 (30.0) | 70 (23.3) |
| 4. | Whole brinjal curry | 38 (12.7) | 46 (15.3) | 36 (12.0) | 45 (15.0) | 40 (13.3) |
| 5. | Groundnut omelate | 118 (39.3) | 90 (30.0) | 65 (21.7) | 80 (26.7) | 64 (21.3) |
| 6. | Tamarind rice gravy | 156 (52.0) | 120 (40.0) | 75 (25.0) | 110 (36.7) | 74 (24.7) |
| 7. | Groundnut vada | 168 (56.0) | 122 (40.7) | 80 (26.7) | 120 (40.0) | 110 (36.7) |
| 8. | Hot cornels | 90 (30.0) | 102 (34.0) | 72 (24.0) | 100 (33.3) | 95 (31.7) |
| 9. | Groundnut pakodi | 198 (66.0) | 200 (66.7) | 156 (52.0) | 184 (61.3) | 160 (53.3) |
| 10. | Groundnut holige | 68 (22.7) | 60 (20.0) | 52 (17.3) | 60 (20.0) | 55 (18.3) |
| 11. | Radish chutney | 92 (30.7) | 72 (24.0) | 63 (21.0) | 70 (23.3) | 75 (25.0) |
| 12. | Carrot chutney | 68 (22.7) | 50 (16.7) | 48 (16.0) | 50 (16.7) | 50 (16.7) |
| 13. | Groundnut halwa | 102 (34.0) | 72 (24.0) | 56 (18.7) | 70 (23.3) | 70 (23.3) |
| 14. | Groundnut namkeen | 98 (32.7) | 62 (20.7) | 60 (20.0) | 60 (20.0) | 65 (21.7) |
| 15. | Peanut chikki recipe | 105 (35.0) | 56 (18.7) | 48 (16.0) | 55 (18.3) | 56 (18.7) |
| 16. | Coriander mint peanut aronet chutney | 60 (20.0) | 76 (25.3) | 56 (18.7) | 75 (25.0) | 74 (24.7) |
| 17. | Peanut sundal | 75 (25.0) | 62 (20.7) | 55 (18.3) | 60 (20.0) | 60 (20.0) |
| 18. | Groundnut burfi | 108 (36.0) | 90 (30.0) | 82 (27.3) | 90 (30.0) | 80 (26.7) |
| 19. | Peanut curd chutney recipe | 145 (48.3) | 82 (27.3) | 74 (24.7) | 80 (26.7) | 72 (24.0) |
| 20. | Tomato peanut pachadi | 201 (67.0) | 205 (68.3) | 198 (66.0) | 200 (66.7) | 180 (60.0) |

(Figures in parenthesis indicate percentage of respective values)

The current healthy life style pushed to develop and implement a novel efficient defatting process of high quality called "Mechanical Expression Preserving Shape Integrity" that conserved the sensory, colour, textural, morphological and acceptability of partially defatted roasted peanuts.

Conclusion

Most of the women consume these crops seasonally, while, women who know nutritive value, health benefits of it and are also aware about these crops, consume these whole of the year, women in U.P. consume these coarse cereals (groundnut, maize, groundnut etc.) only in winters.

Recommendations

Peanuts can be chopped by hand using a chef's knife and a cutting board or in a wooden bowl with a mezzaluna, the curved knife that has a handle sitting atop the blade. They may also be chopped in a food processor, yet care needs to be taken to not grind them too much since the result may be more like chunky peanut butter than chopped peanuts. The best way to chop peanuts in a food processor is to place a small amount in at a time and carefully use the pulse button until you have achieved the desired consistency. To make your own peanut butter, place the peanuts in the food processor and grind until you have achieved the desired consistency.

References

1. Ali Engy, Zachariah Rony, Shams Zubair, Manzi Marcel, Akter Tajmary, Alders Petra, *et al.* Peanut-based ready-to-use therapeutic food: how acceptable and tolerated is it among malnourished pregnant and lactating women in Bangladesh. *Maternal and Child Nutrition*. 2015; 11(4):1028-1035. <http://ovidsp.uk.ovid.com/sp-3.27.1a/ovidweb.cgi?&S=hlhfpdomabhflacdfngklhdghdahaa00&Ccomplete+Reference=S.sh.87|12|1>
2. Schocker Frauke, Baumert Joseph, Kull Skadi, Petersen Arnd, Becker Wolf-Meinhard, Jappe Uta. Prospective investigation on the transfer of Ara h 2, the most potent peanut allergen, in human breast milk. *Pediatric Allergy and Immunology*. 2016; 27(4):348-355. <http://ovidsp.uk.ovid.com/sp3.27.1a/ovidweb.cgi?&S=hlhfpdomabhflacdfngklhdghdahaa00&&Current+Search+Results=1>
3. Wang Yichao, Allen Katrina J, Koplin, Jennifer J. Dietary intervention for preventing food allergy in children. *Publish Ahead of Print, Post Author Corrections*, 2017.
4. Togias Alkis, Spergel Jonathan, Stukus David R. Venter, Carina; and Boyce, Joshua, A. Addendum guidelines for the prevention of peanut allergy in the United States: Report of the National Institute of Allergy and Infectious Diseases-sponsored expert panel. *Journal of Allergy & Clinical Immunology*. 2017; 139(1):29-44. <http://ovidsp.uk.ovid.com>