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Acceptability sensory evaluation of products by using waste portion of vegetables and fruits

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The objective was present investigation was to acceptability sensory evaluation of products by using waste portion of vegetables anf fruits. To develop waste portion of vegetables and fruits based products like paratha and kabab have a sweet flavour, soft texture and are easy digest waste portion of vegetables and fruits are high sources of nutrients like manganese, potassium, carotene and various vitamins and water. They are also a very filling food. Waste portion of vegetables and fruits are considered useful in defending against cancer diseases, diabetes, heart diseases.The developed products were given to the panel of 10 judges products were tasted for flavour and tested for flavour and taste, body and texture, colour appearance, over all acceptability. The organoleptic evaluation of products was done by using score card methods (9-point hedonic scale). The result of developed products *i.e.* paratha and kabab (T_0) and (T_1) were best in all treatments in case of all sensory attributes. The over all acceptability (T_1) paratha, kabab were 8.3,8.3 respectively.

Key Words : Acceptability, Development, Investigation, Evaluation, Organoleptic

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INTRODUCTION

Watermelon rinds also known as *Paricarpium citrulli vulgaris* in pharmaceutical Latin, is something undesirable after the flesh has been consumed. More than that, it has excellent medicinal uses that have to say, it has been commonly used as a Chinese herbal medicine, called Xi Gua Pi in Pinyin, for the treatment of diabetes, nephritis edema, acne, erectile dysfunction (Ed), wounds, and so on. So, it is good for health. It is slightly odorous and almost tasteless. Peels contain sugar and wax. Watermelon rind isn't nature-powered Viagra, but some research shows that it may help men with mild to moderate erectile dysfunction. Its libido-boosting powers come from the amino acid citrulline, which is concentrated in the rind (Koocheki *et al*., 2007).

Cauliflower stalk and stem is also a good source of Protein, Thiamin, Riboflavin, Niacin, Magnesium and Phosphorus and a very good source of Dietary Fibre, Vitamin C, Vitamin K, Vitamin B6, folate, pantothenic acid, potassium and manganese. It is very low in calories. 100 g of the fresh cauliflower stalk provides just 26 calories. It is also good source of minerals in small quantities such as manganese, copper, iron, calcium and potassium Mudgal and Pandey (2007). Beet tops are an excellent source of vitamin A and the roots are a good source of vitamin C (Tilli *et al.,* 2011).

Objectives:

– To develop products using waste portion of

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vegetables and fruits.

– Organoleptic evaluation of developed products.

METHODOLOGY

The present investigation on acceptability sensory evaluation of products by using waste portion of vegetables and fruits was carriedout to utilize and develop the waste material based product. The study was conducted in department of food and nutrition, faculty of Home science KNIPSS Sultanpur.

Justified, judicious and scientific methodological consideration is indispensable for any investigation to deduce meaningful interferences the objective of the study. The study design reflects to the logical manner in which units of the study are assessed and analyzed for the purpose of drawing generalizations. Thus, with the view of available resources, the best procedures for taking correct observation shouls be first sorted out in a logical manner so that unbiased interference can be drawn. This chapter delineates information pertaining to the research design and methodological step used for investigation. The research procedure has been distinctly described as under in fllowing heads:

– Procurement of material
– Development of waste material product
– Sensory evaluation
– Statistical analysis

Procurement of material:

For the present investigation required material was purchased from the local market of Sultanpur city.

Processing of waste material:

This material was subjected to cleaning and washing in the following manner.

Cleaning and washing:

Waste material washed with the tap water and then rinsed with water to remove dirt, dust and other impurites.

Development of waste portion product:

Methods:

Combine all the ingredients in a bowl, mix well and knead into a soft dough, using enough water. Divide the dough into equal portions and roll out each portion into a circle of 6" diameter, using the flour for rolling. Heat tava

Table A : Paratha

Ingredients	Amount	
	Control	Experiment
Beetroot leaves	-	200 g
Spinach	200g	-
Whole wheat flour	2 cup	2 cup
Chili powder	4 to 5	4 to 5
Coriander powder	1\2 tsp	1\2tsp
Clove garlic (finely chopped)	1	1
Ghee	1cup	
Turmeric powder	1\4 tsp	1\4 tsp
Salt	To taste	T taste

Table B: Kabab

Ingredients	Amount	
	Control	Experiment
Carrot leaves	_	3\4 cup
Patato	3\4 cup	
Chopped coriander	1 tbsp	1 tbsp
Chilli powder	1\2 tsp	1\2 tsp
Gram masala	1\4 tsp	1\4 tsp
Besan	250g	250g
Salt	To taste	To taste

and cook each paratha, using little oil, till golden brown spots appear on both the sides.

Methods:

Combine all the ingredients in a bowl and mix well. Divide the mixture into equal portions and roll each portion into 25 mm. (1") flat round tikki. Roll the tikkis in the cornflour till they are evenly coated from all the sides. Heat the oil in a deep kadhai and deep-fry the tikkis, a few at a time, till they turn golden brown in colour from all the sides. Drain on an absorbent paper.

OBSERVATIONS AND ASSESSMENT

The data were collected on different aspect per plan were tabulated and analyzed statistically. The result from the analysis presented and discussed in this chapter in following sequence.

– Calculation of nutritive value of watermelon rind and cauliflower stem :

– Organoleptic evaluation of developed product.

– Calculation of nutritive value of beetroot top.

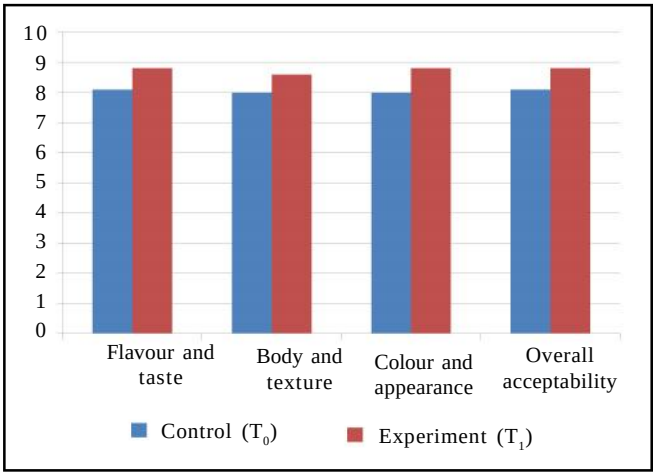
Table 1: Nutritive value of beetroot top per 100 g

Nutrients	Total
Calories	43
Fat	0.17 g
Cho	9.56 g

Calculation of nutritive value of carrot top:

Table 2 : Nutritive value of carrort top per 100 g

Nutrients	Total
Calories	41
Protein	0.9 g
CHO	9.6 g
Sugar	4.7 g
Fat	0.2 g
Fibre	2.8 g



Organoleptic evaluation of developed products:

– Flavour and taste

– Body and texture

– Colour and appearance

– Over all acceptability.

Table 3 shows that the experimental sample (T_1) obtained maximum 8.8 , 8.6 ,8.8 ,8.8 for flavour and taste, body and texture, colour and appearance and over all acceptability, respectively ; while control (T_0) 8.1, 8, 8.1, 8 obtained for flavour and taste, body and texture, colour and appearance and over all acceptability. This indicated that the experimental, respectively sample (T_1) was found

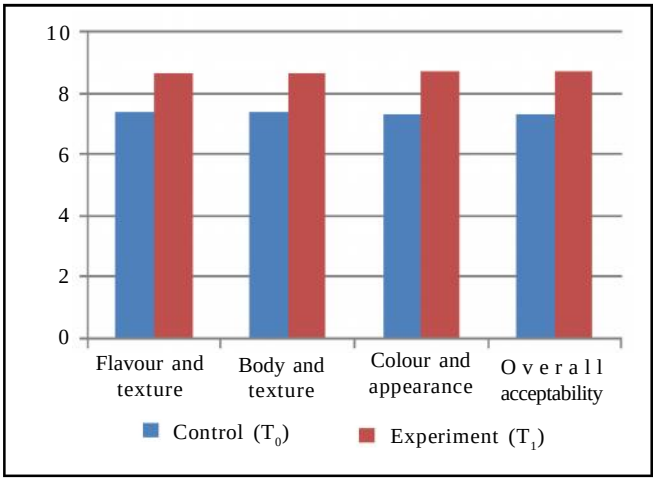


Table 3: Organoleptic evaluation of beet root top paratha

Product	Flavour and taste	Body and texture	Colour and appearance	Overall acceptability
T_0 (Controlled)	8.1	8	8	8.1
T_1 (Experimental)	8.8	8.6	8.8	8.8

Table 4 : Organoleptic evaluation of beetroot top and carrot top kabab

Product	Flavour and taste	Body and texture	Colour and appearance	Overall acceptibility
T_0 (Controlled)	7.4	7.4	7.3	7.3
T_1 (Experimental)	8.6	8.6	8.7	8.3

to be fallen under category of "like very much to liked extremely".

(Volden *et al.*, 2009) studied that flavonoids and glucosinolates (GLS) found in betroot leaves have been the focus of much research, due to their potential as health promoting phytochemicals. Phenolic compounds and GLS exhibit antioxidant and antimicrobial properties and have been investigated extensively regarding their ability to lower the risk of cardio-vascular diseases and cancer.

Table 4 shows that the experimental (T_1) obtained maximum 7.4, 7.4,7.3,7.3 for flavour and taste, body and texture, colour and appearance and over all acceptability respectively ; while control sample (T_0) 8.6, 8.6, 8.7, 8.3 obtained for flavour and taste, body and texture, colour and appearance and over all acceptability, respectively. This indicated that the experimental sample (T_1) was found to be fallen under category of " like very much to liked extremely"

Thamburaj and Singh (2005) carrot top is one of the popular root vegetables grown throughout the world and is the most important source of dietary carotenoids in Western countries including the United States of America. China is the major carrot producing country in the world. The area under carrot in India is 22,538 ha with an annual production of 4.14 lakh tons with Uttar Pradesh, Assam, Karnataka, Andhra Pradesh, Punjab and Haryana being the major producing States. In recent years, the consumption of carrot and its products have increased steadily due to their recognition as an important source of natural antioxidants besides, anticancer activity of β-carotene being a precursor of vitamin A.

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