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To standardize and develop the product the using Arrowroot

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Abstract

The objective of present investigative was “Arrowroot powder as a Functional food: Product Enrichment Sensory Evaluation was to standardized and develop the product using arrowroot powder and their sensory evaluation. The objective of this study was to determine the effect of Arrowroot carbohydrates on the survival of lactobacilli in bio-yoghurts. It can be concluded that supplementation of arrowroot powder in the diet improved bacterial and chemical properties of digesta. Developed products of arrowroot powder were Pudding, halwa, soup, drink, naan. The developed products were given to the panel of 10 members and products were tested for flavour and taste, body texture, colour and appearance, overall acceptability. Organoleptic evaluation of products was done by using score card method (9-points Hedonic Scale). The highest average score for overall acceptability was found in experimental preserved and mostly accepted by panel members.

Keywords: Packing, tensile strength

Introduction

Arrowroot (*Maranta arundinaceae* L) is a low perennial herb found in rainforest habitats which is often cultivated for starch obtained from its rhizome. It can grow about 2ft. high, has a small white flower and fruits. Arrowroot is a product of West Indies which has a rich history in the culture that its very name arrowroot was derived from the indigenous tribe Arawak's. Arrowroot carbohydrates on the survival of lactobacilli in bio-yoghurts. There were four treatments; probiotic yoghurt (control), probiotic yoghurt with 3% Arrowroot extract, probiotic yoghurt with 1.65% Raftilose and yoghurt without probiotics or prebiotics. It can be concluded that supplementation of arrowroot powder in the diet improved bacterial and chemical properties of digesta. Arrowroot found from a type of starch. It is powder a free from thickness and “PALIO friendly” diet which very important for kitchen. It is also known as “KASAWA”. Arrowroot's dishes are very beneficial for Celsius disease. Arrowroot powder is “Glutain free, grain free and palio free”. Arrowroot powder is used in the form of arrowroot starch. Jayampathi *et al.* (2018) ^[4] Determination of composition of arrowroot extract moisture, ash, crude protein crude fat and crude fiber contents of arrowroot carbohydrate extract were determined. All experiments were done at least in triplicate and analytical results were expressed on a dry matter basis.

Souza *et al.* (2019) ^[5] the price of the arrowroot starch in the national market has reaches values of R\$ 15.00 to 39.00 per kg, because of this, the cultivation of arrowroot has become a potential option in Brazilian agribusiness, especially for family agriculture.

Objectives

- To standardize and develop the products using Arrowroot Acceptability.
- Sensory Evaluation of high fiber products by using Lentil and Arrowroot.

Materials and Methods

The present study was undertaken to carried out to standardized arrowroot based product and evaluate the quality. The experiment conducted during the course of investigation has been portrayed under the following headings.

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Local: The study was conducted in department of food and nutrition, faculty of home science, KNIPSS Sultanpur.

Collection of ingredients: The material was purchased from the local market of sultanpur.

Preparation of products: To required material was used for

the development of standardized arrowroot based product related recipes.

Sensory evaluation: The developed products were evaluate by the random chosen panelists to determine its appearance, color, flavor, taste, texture and over all acceptability.

Arrowroot pudding

Ingredients	Amount			
	Controlled (T ₀)	Experimental (T ₁)	Experimental (T ₂)	Experimental (T ₃)
Milk	250ml	250ml	250ml	250ml
Arrowroot powder	-	5gm	10gm	15gm
Custard powder	5gm	5gm	5gm	5gm
Fruits (Apple, pomegranate)	100gm	100gm	100gm	100gm
Sugar	20gm	20gm	20gm	20gm

Method

- Custard powder mix milk then boiled.
- Gently mix arrowroot powder in one cup of water.
- Cook these mixture in low flame.
- Then add milk and mix it well.
- Cooked arrowroot mixture, sugar, grill fruits.
- If the mixture is too thick then add some more milk.
- Then child surve.

Arrowroot coconut soup

Ingredient	Amount			
	Controlled (T ₀)	Experimental (T ₁)	Experimental (T ₂)	Experimental (T ₃)
Coconuts	10 gm.	10 gm.	10 gm.	10 gm.
Onions	-	5 gm.	5 gm.	5 gm.
Tomatoes	5 gm.	5 gm.	5 gm.	5 gm.
Vegetables	25 gm.	25 gm.	25 gm.	25 gm.
Arrowroot Flour	-	5 gm.	10 gm.	15 gm.
Water	2 cup	2 cup	2 cup	2 cup
Turmeric Powder	1 pinch	1 pinch	1 pinch	1 pinch

Method

- Grate the coconut and keep aside.
- Cut the vegetables.
- In a non-stick vessel put arrowroot flour, mix the grated coconut, chopped vegetables and turmeric powder.
- Add 10 cups of water and boil for 25 to 30 minutes
- Remove, filter through a strainer.
- Again boil the strained soup for 3 minutes
- Remove from the gas stove, add the required salt, sprinkle fresh coriander leaves and serve.

The data were collected on different aspects per plan were tabulated and analyzed statistically. The result from the analysis presented and discussed chapter in the following sequence organoleptic evaluation of arrowroot powder based product calculation of nutritive value of Arrowroot powder. Organoleptic evaluation of arrowroot powder based product.

- Flavor and taste.
- Body and texture.
- Color and appearance.
- Overall acceptability.

Result and Discussion

Table 1: Organoleptic evaluation of arrowroot pudding

Product	Flavor & taste	Body & Texture	Color & Appearance	Overall acceptability
T ₀ (Controlled)	7.1	7	7.3	7.8
T ₁ (Experimental)	7.7	7.6	7.3	7
T ₂ (Experimental)	8.7	8.8	8.9	8.8
T ₃ (Experimental)	8	8	8	8

Table 2: Nutritive value of arrowroot pudding

Calories	65 kcal
Carbohydrate	13 g
Protein	4.2 g
Fat	4 g

Show that the experimental (T₂) obtained maximum 8.7, 8.8, 8.9, 8.8, for flavor & taste, body and texture, color and appearance and over all acceptability, and experimental (T₃)

obtained maximum 8, 8, 8, 8 for flavor & taste, body and texture, color and appearance and over all acceptability, and (T₁) obtained maximum 7.7, 7.6, 7.3, 7 for flavor & taste, body and texture, color and appearance and over all acceptability, while control (T₀) obtained minimum 7.1, 7, 7.3, 7.8 for flavor & taste, body and texture, color and appearance and over all acceptability respectively. This indicated that the experimental (T₂) pudding was found to be fallen under category of "Liked Extremely".

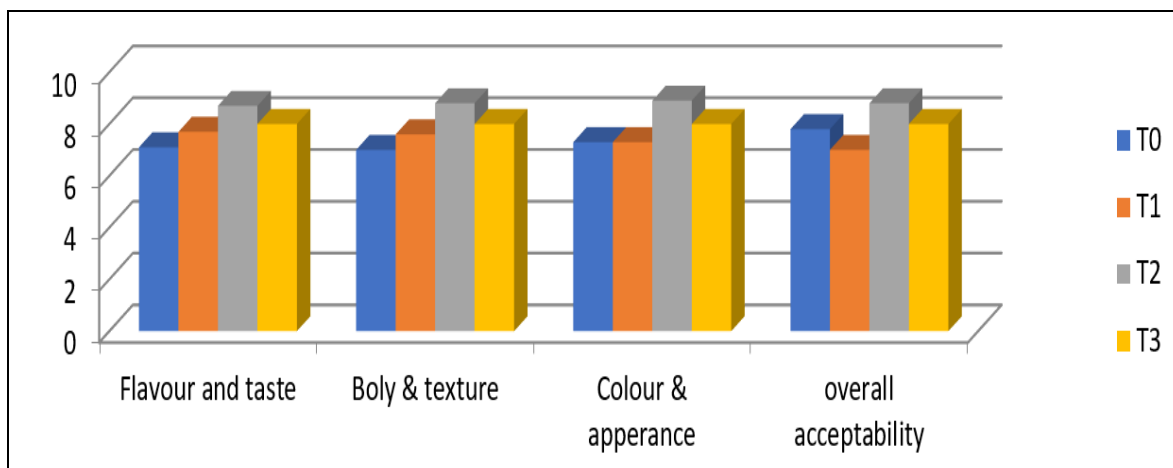


Fig 1: Mean overall acceptability of Arrowroot pudding

Table 3: Organoleptic evaluation of Arrowroot coconut soup

Product	Flavor & taste	Body & texture	Color & appearance	Overall acceptability
T0(controlled)	7.5	7.5	7	7.5
T1(experimental)	7.6	7.6	7.1	7.6
T2(experimental)	8.1	8.3	8.1	8.4
T3(experimental)	8.6	8.8	8.6	8.9

Table 4: Nutritive value of arrowroot coconut soup

Calories	240 kcal
Fat	9%
Sodium	26 mg
Potassium	454 mg

This table show that the experimental (T₃) obtained maximum 8.6, 8.8, 8.6, 8.9, for flavor & taste, body and texture, color and appearance and over all acceptability, and experimental

(T₂) obtained maximum 8.1, 8.3, 8.1, 8.4 for flavor & taste, body and texture, color and appearance and over all acceptability, and (T₁) obtained maximum 7.6, 7.6, 7.1, 7.6 for flavor & taste, body and texture, color and appearance and over all acceptability, while control (T₀) obtained minimum 7.5, 7.5, 7, 7.5 for flavor & taste, body and texture, color and appearance and over all acceptability respectively. This indicated that the experimental (T₃) pudding was found to be fallen under category of “Liked Extremely”.

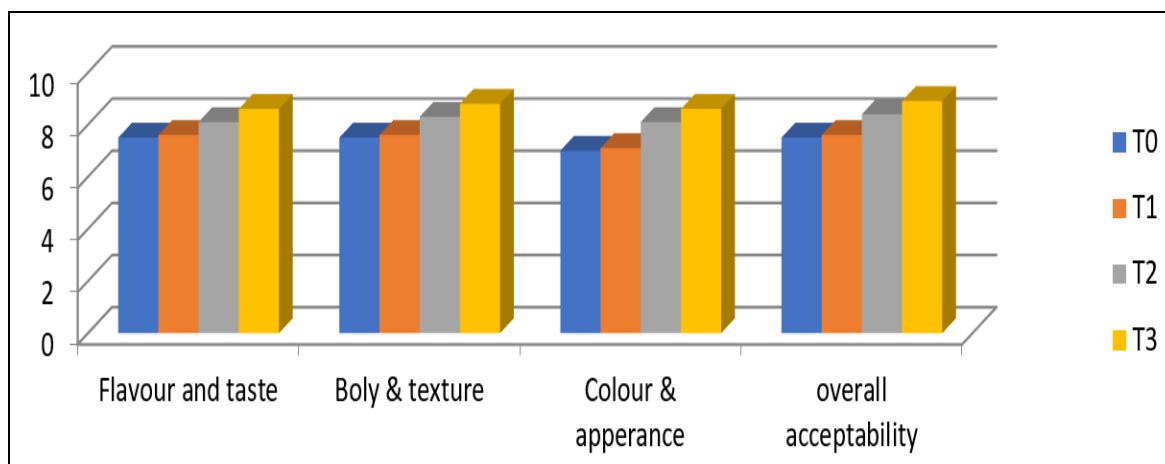


Fig 2: Mean overall acceptability of Arrowroot coconut soup

Summery & conclusion

Arrowroot is not technically a plant in itself but rather a type of powdery starch. The most impressive health benefits of arrowroot include its ability to promote growth and development enhance digestion, boost the metabolism, ease stomach issues, promote weight loss, prevent birth defects and treat urinary tract infection. Additionally, it also boosts oral, skin and hair health, improve heart health, safe for infants. The present investigation entitled “Arrowroot Powder as a Functional Food: Product Enrichment & Sensory Evaluation” was carried out to standardize arrowroot powder and its product with two objectives.

To develop arrowroot powder products.

- Arrowroot pudding
- Halwa
- Coconut soup
- Arrowroot drink
- Palio naan

Organoleptic evaluation of arrowroot powder based product

- Flavor and taste.
- Body and texture.
- Color and appearance.
- Overall acceptability.

The experimental work was carried out in the development of Food & Nutrition, Faculty of Home Science, KNIPSS Sultanpur. To standardize and develop the arrowroot powder based product required different materials like arrowroot powder, maida, milk, baking powder etc. were used in the experimental would be purchased from the local market of Sultanpur.

Conclusion

Experimental (T₂) Pudding obtained maximum 8.7, 8.8, 8.9, 8.8, for flavor & taste, body and texture, color and appearance and over all acceptability, and experimental (T₃) obtained maximum 8, 8, 8, 8 for flavor & taste, body and texture, color and appearance and over all acceptability, and (T₁) obtained maximum 7.7, 7.6, 7.3, 7 for flavor & taste, body and texture, color and appearance and over all acceptability, while control (T₀) obtained minimum 7.1, 7, 7.3, 7.8 for flavor & taste, body and texture, color and appearance and over all acceptability respectively. This indicated that the experimental (T₂) pudding was found to be fallen under category of “Liked Extremely”.

Experimental (T₃) Soup obtained maximum 8.6, 8.8, 8.6, 8.9, for flavor & taste, body and texture, color and appearance and over all acceptability, and experimental (T₂) obtained maximum 8.1, 8.3, 8.1, 8.4 for flavor & taste, body and texture, color and appearance and over all acceptability, and (T₁) obtained maximum 7.6, 7.6, 7.1, 7.6 for flavor & taste, body and texture, color and appearance and over all acceptability, while control (T₀) obtained minimum 7.5, 7.5, 7, 7.5 for flavor & taste, body and texture, color and appearance and over all acceptability respectively. This indicated that the experimental (T₃) pudding was found to be fallen under category of “Liked Extremely”.

This indicated that the experimental (T₁) pudding was found to be fallen under category of “Liked Extremely”. The developed products were given to the panel of 09 judges; products were tested for flavor and taste, body and texture, colour and appearance, and overall acceptability. The organoleptic evaluation of product was done by using score card method (9-points Hedonic Scale). The result of arrowroot powder based products, for Pudding, Halwa, Soup, drink, Naan (T₁), (T₂), (T₃) were best in all treatment in case of sensory attributes.

The highest average score for all acceptability were found in experimental products made by developed betel were mostly accepted by panel number.

Recommendation

- Development of bakery product using arrowroot powder.
- Nutrients analysis of arrowroot powder and its products.
- Interventions of arrowroot powder based products.

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