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Standardization and development of preserved food products

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Abstract

Preservation method prevents food from being spoiled by the action of enzymes and microorganisms. Food preservation increases the safe storage period of foodstuffs. It increases the availability of out of season foodstuffs. It increases the availability of various foodstuffs even at distant and not easily approachable places. It makes the transportation of the food materials easier. Food preservation makes up for the deficiencies in the diet. The objective of present investigation was to standardize and development of preserve food products like jam, jelly, biscuit, laddoo, pickle, it's a time-tested way to save money, reduce waste, and eat healthy. The developed products were given to the panel of 10 members and products were tested for flavour and taste, body and texture, colour and appearance, overall acceptability. The Organoleptic evaluation of products was done by using score card (9-point hedonic scale). The highest average score for overall acceptability was found in experimental preserved and mostly accepted by panel member.

Keywords: Preservation, safe storage, save money

1. Introduction

Food preservation involves preventing the growth of bacteria, fungi or other micro-organisms (although some methods work by introducing being bacteria or fungi to the food), as well as slowing the oxidation of fats that cause rancidity. Food preservation may also include processes that inhibit visual deterioration, such as the enzymatic browning reaction in apples after they are cut and exposed to air. Many processes designed to preserve food will involve a number of food preservation methods. Preserving fruit by turning it into jam, for example, involves boiling (to reduce the fruit's moisture content and to kill bacteria, etc.), sugaring (to prevent their re-growth) and sealing within an airtight jar (to prevent recontamination). Some traditional methods of preserving food have been shown to have a lower energy input and carbon footprint, when compared to modern methods. However, some methods of food preservation are known to create carcinogens, and in 2015, the International Agency for Research on Cancer of the World Health Organization classified processed meat, i.e. meat that has undergone salting, curing, fermenting, and smoking, as "carcinogenic to humans". Maintaining or creating nutritional value, texture and flavour is an important aspect of food preservation, although, historically, some methods drastically altered the character of the food being preserved. In many cases these changes have come to be seen as desirable qualities – cheese, yogurt and pickled onions being common examples.

Objectives

- To develop different type of preservative food products.
- Organoleptic evaluation of developed products.

Materials and Method

The present study was undertaken to preserved food products to evaluate its quality. The experiment conducted during the course of investigation has been portrayed under the following headings.

Local: The study was conducted in KNIPSS Sultanpur, Department of Food and Nutrition, College of Home Science.

Collection of ingredient: The material was purchased from the local market of Sultanpur.

Preparation of product: The required material was used for the development of preserved food products related recipes.

Sensory evaluations: The developed products were evaluated by the random chosen panellists to determine its appearance, colour, flavour, taste, texture and over all acceptability.

Jam

Ingredients	Amount	
	Controlled	Experimental
Apple	500g.	250g.
Guava	-----	250g.
sugar	350g.	350g.
Lemon juice	10g.	10g.

Method

- Wash the apples & guavas
- Dry them or wipe with a cloth and peel them.
- Remove the peel of the apples and cut the flesh into small pieces.
- Put the apple pieces in a utensil with a thick base, pour water then cover and boil.
- Once it comes to boil, boil for another 10 minutes till the apple pieces turn soft.
- After apples turn soft, mash them properly with a spoon (used to mash).
- Put sugar in the mashed apples and stir well to let the sugar blend in.
- Allow jam to cook, if require you can still mash the apples.
- Keep stirring to prevent jam from sticking to the pan's base
- To check if the jam is cooked, pour a little bit of jam on a plate, it has to fall together, water should not fall separately.
- Turn off the gas.

Jelly

Ingredients	Amount	
	Controlled	Experimental
Apple	500g.	250g.
Guava	---	250g.
sugar	350g.	350g.
Lemon juice	10g.	10g.
Water	1000g.	1000g.

Method

- Wash Guavas & apple and cut into one inch cubes.
- Place in a large sauce pan and cover with just enough water to cover the fruit well.
- Cover and cook for 30 minutes until guavas & apples become very tender. Let the mixture tend to be Cooling. Then Cover a large bowl with a muslin cloth and invert fruit onto the cloth taking care to catch the liquid that drips through the muslin, into the bowl.
- Gather the four ends of the cloth and tie a knot and hang this 'bag' for about four hours and collect all the drippings into the bowl.
- Squeeze out any juice left in the cloth and discard pulp then measure the liquid.
- For every cup of liquid add one cup of sugar and one

tablespoon of lemon juice.

- Ex. if there are four cups of liquid you would need to add four cups of sugar and four tablespoons of lemon juice.

Put this mixture back on flame and bring to a boil. Lower heat and cook, stirring constantly (as the liquid tends to boil over), till the liquid starts coating the spoon thickly and the juice/jelly drips from the spoon in jointed drops. Let stand for half an hour and pour into jars while still warm. Cover and seal the bottle.

Result and Discussion

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

Organoleptic evaluation of preserved food based products.

Calculation of nutritive value of preserved food products.

Organoleptic evaluation of preserved food based products.

- Flavor and taste.
- Body and texture.
- Color and appearance.
- Over all acceptability.

Table 1: Organoleptic evaluation of Apple jam

Product	Flavor & taste	Body \ texture	Color & appearance	Overall acceptability
T0(controlled)	7.9	8	8.1	7.8
T1(experimental)	9	8.9	8.8	8.9

Table 2: Nutritive value of Jam

Nutrient	Guava	Apple	Sugar
Energy(kcal)	127.5	145	1393
Protein(g)	2.25	1.25	0.25
Fat(g)	0.75	0.25	0
CHO(g)	28	34.25	248.5

Table 1 shows that the experimental product (T1) obtained maximum 9, 8.9, 8.8, and 8.9 for flavour & taste, body & texture, colour& appearance and overall acceptability; while control sample (T0) obtained 7.9, 8, 8.1, and 7.8for flavour & taste, body & texture, colour& appearance and overall acceptability respectively. This indicated that the control (T0) jam was found to be fallen under category of "Like Very Much to Like Extremely".

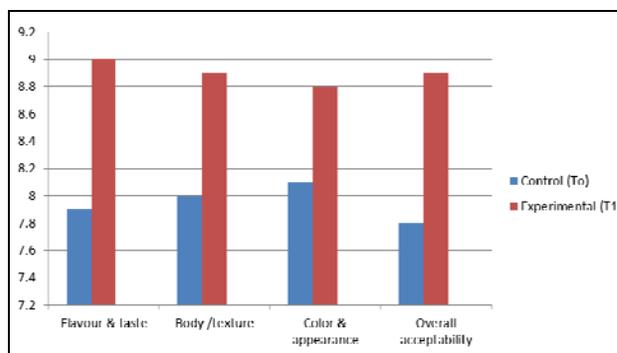


Fig 1: Mean overall acceptability of Jam

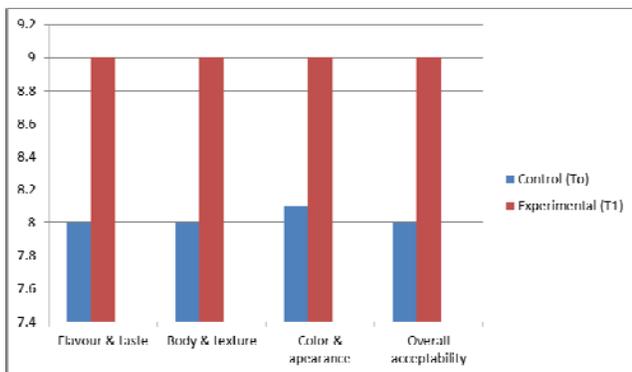
Table 3: Organoleptic evaluation of Jelly

Product	Flavor & taste	Body \ texture	Color & appearance	Overall acceptability
T0(controlled)	8	8	8.1	8
T1(experimental)	9	9	9	9

Table 4: Nutritive value of Jelly

Nutrient	Guava	Apple	Sugar
Energy(kcal)	127.5	145	1393
Protein(g)	2.25	1.25	0.25
Fat(g)	0.75	0.25	0
CHO(g)	28	34.25	248.5

Table 2 shows that the experimental product (T1) obtained maximum 9, 9, 9 and 9 for flavour & taste, body & texture, colour & appearance and overall acceptability; while control sample (T0) obtained 8, 8, 8.1, and 8, for flavour & taste, body & texture, colour & appearance and overall acceptability respectively. This indicated that the control (T0) jelly was found to be fallen under category of “Like Very Much to Like Extremely”.

**Fig 2:** Mean overall acceptability of Jelly

Summary & Conclusion

Food preservation involves preventing the growth of bacteria, fungi or other micro-organisms (although some methods work by introducing bacteria or fungi to the food). Food Preservation may also include processes that inhibit visual deterioration, such as the enzymatic browning reaction in apples after they are cut and exposed to air. Many processes designed to preserve food will involve a number of food preservation methods. Preserving fruit by turning it into jam, for example, involves boiling (to reduce the fruit's moisture content and to kill bacteria, etc.), sugaring (to prevent their re-growth) and sealing within an airtight jar (to prevent recontamination). Preparing and preserving food is not only a celebration of mother's traditions; it's a time-tested way to save money. It increases the availability of off seasonal foodstuffs.

The present investigation entitled “Standardization and Development of preserved food products” with two objectives:

❖ To develop preserved food products.

- Jam
- Jelly
- Biscuit
- Ladoo
- Pickle

❖ Organoleptic evaluation of developed products.

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

The experimental work was carried out in the department of Food and Nutrition, Faculty of Home Science, K.N.I.P.S.S.

Sultanpur. To standardize and development of preserve food products, required different materials like, Apple, Guava, Maida, Papaya, Cauliflower, etc were used in the experimental work was purchased from local market of Sultanpur.

Conclusion

(a) The experimental product (T1) Jam obtained maximum 9, 8.9, 8.8, and 8.9 for flavour & taste, body & texture, colour & appearance and overall acceptability; while control sample (T0) obtained 7.9, 8, 8.1, and 7.8 for flavour & taste, body & texture, colour & appearance and overall acceptability respectively. This indicated that the control (T0) jam was found to be fallen under category of “Like Very Much to Like Extremely”. (b) The experimental product (T1) jelly obtained maximum 9, 9, 9 and 9 for flavour & taste, body & texture, colour & appearance and overall acceptability; while control sample (T0) obtained 8, 8, 8.1, and 8, for flavour & taste, body & texture, colour & appearance and overall acceptability respectively. This indicated that the control (T0) jelly was found to be fallen under category of “Like Very Much to Like Extremely”. (c) The experimental product (T1) biscuit obtained maximum 9, 8.8, 8.9, and 8.8 for flavour & taste, body & texture, colour & appearance and overall acceptability; while control sample (T0) obtained 8.7, 7.9, 8, 7.8, and 8.8 for flavour & taste, body & texture, colour & appearance and overall acceptability respectively. This indicated that the control (T0) Biscuit was found to be fallen under category of “Like Very Much to Like Extremely”. (d) The experimental product (T1) obtained maximum 8.9, 9, 8.8, and 8.9 for flavour & taste, body & texture, Colour & appearance and overall acceptability; while control sample (T0) obtained 8, 7.9, 7.9, and 8 for flavour & taste, body & texture, colour & appearance and overall acceptability respectively. This indicated that the control (T0) Ladoo was found to be fallen under category of “Like Very Much to Like Extremely”. (e) the experimental product (T1) pickle obtained maximum 8.9, 8.8, 8.9, and 8.9 for flavour & taste, body & texture, colour & appearance and overall acceptability; while control sample (T0) obtained 8.2, 7.9, 8.1, and 8 for flavour & taste, body & texture, colour & appearance and overall acceptability respectively. This indicated that the control (T0) Pickle was found to be fallen under category of “Like Very Much to Like Extremely”. The developed products were given to the panel of 10 members. Products were tested for flavour and taste, body and texture, colour and appearance, overall acceptability. The Organoleptic evaluation of products was done by using score card method (9-point hedonic scale. The highest average score for overall acceptability was found in experimental products developed in nutrition lab. Developed preserved food products were mostly accepted by panel member.

Recommendation

- Development of more preserves.
- Nutrient analysis of developed food products.

Limitation of Study

- Since the study is carried out for short period so that and other resources are limited to an extent.

Materials required for this study was purchased from local market of Sultanpur

Acknowledgement

All glory to the almighty, whose blessing in the success behind this project praise pride and perfection belong to almighty. So

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