EXPLORING THE DEVELOPMENT AND ANALYSIS OF MIXED FRUITS JELLY: NUTRITIONAL PROFILE, SENSORY EVALUATION AND STORAGE STABILITY

A PROJECT REPORT
BY
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Submitted to the Department of Nutrition and Food Engineering in the partial fulfillment of B.Sc. in Nutrition and Food Engineering

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APPROVAL

This Project ‘’Exploring the Development and Analysis of Mixed fruits Jelly: Nutritional Profile, Sensory Evaluation and Storage stability’’ submitted by **Aysha Akter** to the Department of Nutrition and Food Engineering, Daffodil International University, has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of B.Sc. in Nutrition and Food Engineering and approved as to its style and contents.

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DECLARATION

We hereby declare that this project has been done by us under the supervision of **Dr. Md. Mahbubur Rahman, Associate Professor** and **Md. Harun-Ar Rashid**, **Assistant Professor,** Department of Nutrition and Food Engineering, Daffodil International University. We also declare that neither this project nor any part of this project has been submitted elsewhere for award of any degree or diploma.

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ABSTRACT

The most important objective of this research work was to develop and analyze the proximate composition of mixed fruits jelly that including dragon (*Selenicereus*), pomegranate (*Punica granatum*) and strawberry (*Fragaria ananassa*). In the market it is available of one fruit based jelly that is traditional, so considering the new concept of food pattern this project work investigate actual physiochemical parameters from mixed fruits jelly. To achieve the higher value of product three samples were made and analysis the nutritional profile, storage stability and sensory evaluation as well. First sample (A) was made from dragon, pomegranate and strawberry juice in 45%, 35% and 20% respectively, for sample (B) dragon, pomegranate and strawberry juice used in 50%, 25% and 25% respectively, on the other hand dragon, pomegranate and strawberry has used 60%, 25% and 15% respectively for sample (C). From proximate analysis sample (A) showed pH 5.9, acidity 0.61, TSS 60, total sugar(%) 64, ash 0.7, moisture 40 and sample (B) showed pH 6.1, acidity 0.2, TSS 72, total sugar(%) 68, % ash 0.6, moisture 43 and sample (C) showed pH 4.65, acidity 0.49, TSS 66, total sugar(%) 63, % ash 0.59, moisture 30. Storage stability was analyzed to keep these three samples at ambient temperature that was 27° C to 34° C. The samples were assessed by ten tasters to see if they were acceptable. The preferences of the consumer were determined through statistical study. Among the three samples jelly containing dragon, pomegranate and strawberry juice used in 60%, 25% and 15% that's mean sample (C) assured highest score from every aspect and overall acceptability.

Keyword: Mixed fruit jelly, pectin, storage stability, sensory evaluation

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CHAPTER 1

INTRODUCTION

1.1 Introduction

Jelly naturally semi-solid liquid made by boiling condensed, filtered fruit extracts (pulp-free) with the necessary amounts of pectin, sugar and citric acid. At least 65% of the total soluble solids and 45% of the fruit should be present (Islam et. al., 2012).

Dragon fruit can be found in numerous nations notably Cambodia, Australia, China, Thailand, Sri Lanka, as well as Bangladesh. It is a fruit which is susceptible to cactus varieties. It is commonly available in red color that is most popular around the world and considered it's high nutrition value (Cunhaet. al., 2020). Sweet dragon are remarkable due to their vibrant form and hue, delightfully delicate sweet taste, creamy pulp and exquisite fragrance. The high value of vitamin C and other antioxidants such as flavonoids, phenolic acid and betacyanin in dragon fruit been beneficial to the immune system also iron is found in dragon fruit that helps to boost iron level in our body influence to making oxygen and make energy. Their dietary value is as as follows 82.5-83.4% moisture, 0.17-0.29% protein, 0.21-0.61% fat, 30.19-36.11 mg phosphorous, 0.51-063 mg iron and 8–9 mg vitamin C. Moreover its tasty, refreshing, lot of water and crucial nutrients along with various minerals make it unique from other cactus species (Panchal et. al., 2018).

Acute pomegranate extract supplementation of 800 mg comprising 330 mg of punicalagins that is active in anti-inflammatory traits. Its nutrition profile consists moisture 77-81%, protein 0.012-0.018%, fat 0.012-0.018%, calcium 0.08-0.14%, iron 0.1- 0.3 mg. Recently revealed the important role that it significantly reduce in the atherosclerotic lesion thats high amount of total dietary fiber almost 30.2% from others fruits part and it help to reduce serum glucose and decline cholesterol (Yuan et. al., 2018).

The strawberry also known as (*Fragaria ananassa)* is excellent source of bioactive compound that consist higher level of vitamin C, folate and phenolic constituents. Strawberry demonstrates high nutrition profile so it represents healthy food choice. First off, by delaying digestion, its fructose and dietary fiber concentrations may help regulate blood sugar as well as fiber's satiating qualities might help with calorie control. Because it contains high in unsaturated and polyunsaturated fatty acids, strawberries provide a source of necessary and advantageous fatty acids, albeit in lesser levels (Curi et. al., 2016)

1.2 Objectives

1.2.1 General objectives

Food diversification is crucial for compete with existent food market because different kind of food and beverage company continuously develop their product and spread to the market. The customer behavior in terms of taste are changing so in this competitive market its need to diversify foodstuff with new variation. Considering these things I have made three samples to bring some change and tried to add some value of my mixed fruits jelly. In this occasion I have use dragon, pomegranate and strawberry in different concentration as per my formulation onward the investigation of nutritional profile, sensory evaluation and storage stability. It is fundamental to keep existence the computational food market bring the variation on food product and always consider the quality, physicochemical, storage as well as microbial parameter, I believe that my research work on mixed fruit jelly will help to the individual who want to research on it and create a new horizon to developing the fruit based product.

1.2.2 Specific objectives

- To develop and formulate mixed fruits jelly.
- To analyze the nutritional profile of mixed fruits jelly.
- To conduct sensory evaluation of mixed fruits jelly.
- To assess the storage stability of mixed fruits jelly.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction of mixed fruit jelly

Mixed fruit jellies are becoming more and more popular because of their unique flavor combinations and possible health benefits from using a range of fruits. Because of their bright colors, unique flavors and high nutritional value, dragon fruit, pomegranate and strawberry can

However, there are additional difficulties and factors unique to making and consuming mixed fruit jelly like which ingredients to use how much to balance and the precise cooking method. Another reason for interest is its nutritional worth, which is influenced by the fruit and sugar content. Significant advances in food science and technology have led to changes in the production of jelly boosting the product's shelf life and nutritional content (Blinikova et. al., 2020).

2.2 Nutritional composition of dragon fruit, pomegranate and strawberry

Studies show that dragon fruit (*Hylocereus spp*.) is rich in dietary fiber, vitamins (especially C), and antioxidants. (*Punicagr anatum),* the fruit from pomegranates is well known for having a high concentration of polyphenols, especially punicalagins that are strong antioxidants. Strawberries (*Fragaria ananassa*) are known for their high levels of vitamin C, anthocyanins, and ellagicacid, which are biochemicals that have anti-inflammatory and antioxidant properties (Vieira et. al., 2017).

The nutritional structure of fruits like dragon, pomegranate and strawberry are quite varied reflecting their unique profiles of vitamins, minerals and other beneficial compounds. Here's a detailed look at the nutritional content of each of these fruits emphasizing their distinct contributions to a healthy diet. Note that the values provided are approximate and can vary based on factors such as fruit size, ripeness and specific variety. The values are generally per 100 grams of fresh fruit.

Dragon fruit (*Pitaya*)

Table 1. Dragon fruit nutritional profile

Nutritional component	**Amount/100 gm**	**Nutritional component**	**Amount/100 gm**
Calories	About 32 calories	Sugars	9.75 grams
Water	80-90 %	Vitamin C	3% of the RDI
Protein	1.2 grams	Dietary fiber	5.6% of the RDI
Fat	0.4 grams	Folate	4% of the RDI
Carbohydrates	13 grams	Manganese	10% of the RDI

Pomegranate

Table 2. Pomegranate nutritional profile

Nutritional component	**Amount/100 gm**	**Nutritional component**	**Amount/100 gm**
Calories	About 83 calories	Sugars	14 grams
Water	78 %	Vitamin C	17% of the RDI
Protein	1.7 grams	Dietary fiber	4 % of the RDI
Fat	1.2 grams	Folate	10% of the RDI
Carbohydrates	19 grams	Potassium	07% of the RDI

Strawberry

Table 3. Strawberry nutritional profile

Nutritional component	Amount/100 gm	Nutritional component	Amount/100 gm
Calories	About 32 calories	Sugars	4.9 grams
Water	91%	Vitamin C	97% of the RDI
Protein	0.7 grams	Dietary Fiber	2% of the RDI
Fat	1.2 grams	Folate	6% of the RDI
Carbohydrates	19 grams	Manganese	24% of the RDI

A number of phenolic chemicals with potential health benefits can be found in abundance in strawberries. Strawberries are additionally an excellent resource of minerals, vitamins and antioxidants which includes manganese and C.

Pomegranate, strawberry and dragon fruit are all great contributions to a well-balanced diet because of their distinct vitamin combinations. When added to meals and snacks these fruits can dramatically improve dietary diversity and health because of their distinctive nutrient profiles vitamin C-rich strawberries potent antioxidant levels in pomegranates and distinctive antioxidant levels in dragon fruit (Abdullah & Cheng, 2001).

2.3 Processing techniques for mixed fruit jellies

In order to guarantee the best flavor and nutritional content retention in mixed fruit jellies a variety of processing procedures are employed. Important processes in the preparation process include pulp separation, juice extraction and pectin extraction. To give the jelly the right texture and consistency gelling agent pectin, agar-agar or other natural sweeteners are needed.

2.4 Physicochemical properties of mixed fruit jellies

Research has looked at the physicochemical characteristics of dragon fruit, pomegranate and strawberry mixed fruit jellies. It's common to consider the jellies' pH, titratable acidity, color, texture and sensory qualities when evaluating their overall quality. Formulations that strike a balance between shelf stability and consumer acceptability are the most successful (Souzaet. al., 2019).

2.5 Health benefits and functional properties

Mixed fruit jellies contain strawberries, dragon fruit and pomegranates these ingredients may be beneficial and healthful. These fruits' antioxidants may lessen inflammation and oxidative stress, Improve general health and wellness. Moreover, these fruits high dietary fiber content may promote satiety and a healthy digestive system (Ruzainah et. al., 2009).

CHAPTER 3

METHODS AND MATERIALS

3.1 Collection of raw materials

The raw materials is prerequisite of finished product and when we collect the raw material need to keep in mind the quality of raw materials, because impact the further processing thoroughly. It required to check physical appearance considering the mechanical damage it deteriorate the raw materials quality and decrease the acceptability. To making the mixed fruit Jelly from dragon fruit, pomegranate and strawberry I have collected these raw stuff from Savar and Ashulia regional market of Dhaka. Additionally, Sugar, Pectin and Citric acid has collected from analytical lab of Nutrition and Food Engineering (NFE) Department of Daffodil International University and supermarket.

3.2 Formulation of mixed fruit jelly

To develop and investigate the mixed fruit jelly I have prepared three samples based on their concentration. The investigated percentage of concentration from dragon, pomegranate and strawberry mentioned below table.

Table 4. Formulation of mixed fruit jelly

	Fruit juice concentration		
Sample	**%Dragon fruit**	**% Pomegranate**	**% Strawberry**
A	45	35	20
B	50	25	25
C	60	25	15

3.3 Processing of mixed fruit jelly

First of all, wash raw material to eliminate the undesirable particle from dragon fruit, pomegranate and strawberry. Then extract the juice and filtered juice need to keep properly as per formulation as indicated 300 ml. Predetermined concentration mixed exactly with sugar 280g, Citric acid 1.8g, Pectin 2.8 g and KMS 90 PPM. Under a low flame gas stove this mixture need heated and continuously stirred. Once the pH and °brix (measured at 4.65 and the TSS 67, respectively) have reached the correct level, occasionally stir and add suitable amount of citric acid if need to maintain the pH. Finally stop the flame and transfer the finished product into a glass bottle that has been sterilized.

3.4 Processing flow chart of making jelly

The following flow chart is clearly mentioned the processing step of mixed fruit jelly.

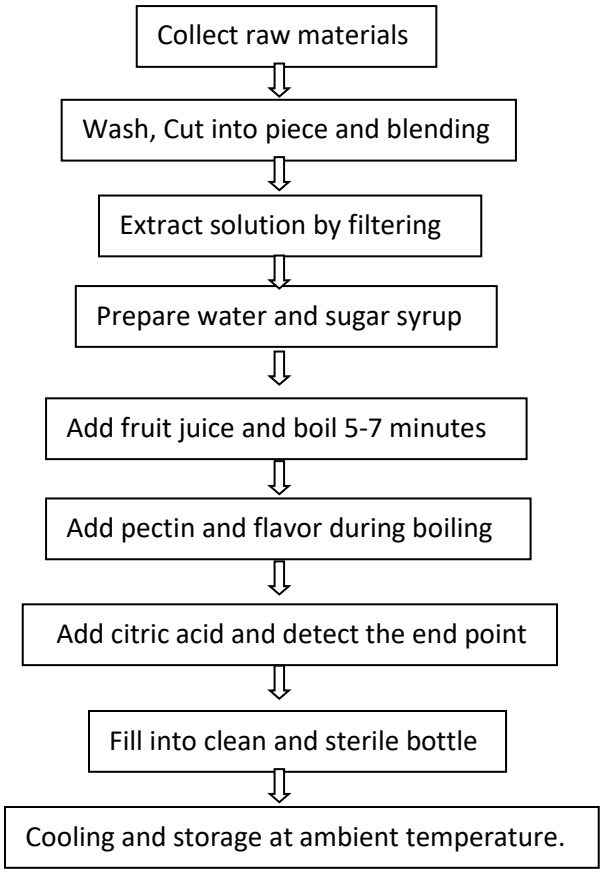

Figure 1: Flow chart jelly preparation

3.5 Moisture content

Moisture is the main element of the product that extremely influences to decrease the product quality. When a food product contain more moisture then specially microorganism grow fast and deteriorate the acceptability on the other hand when a food product contain less moisture then product shelf life decrease slowly and keep the quality of product for long time. Higher moisture content arise the growth of bacteria raising the possibility of food deterioration and foodborne diseases. When moisture level is controlled and maintained to prevent microbial growth food products remain fresher for longer on the shelf. Throughout the production and distribution chain food moisture content monitoring is crucial for preserving microbiological safety, sensory integrity, nutritional value preservation, chemical and physical stability control and quality standard compliance.

Figure 2: Moisture analysis

We need to consider high importance with high moisture content food stuff there will need more precious processing when make a finished food from raw materials as well as its after processing when we preserve it. In this study among the three sample find with drying oven method sample (C) show 30.21that is usually present in jelly and compared to the other sample it become more acceptable within them.

3.6 Ash content

Ash determines the total minerals from food products, lot of minerals are present in dragon such as zinc, sodium, potassium and phosphorus. Pomegranate contains significant amount of potassium, magnesium, copper and strawberry contains high percentage of calcium, iron, potassium, folate and magnesium.

Figure 3: Ash analysis

Many different foods such as dairy products, seafood, nuts, seeds, fruits, vegetables and whole grains contain ash. You can guarantee that you obtain enough of the vital minerals required for optimum health if you eat a balanced diet that consists of a range of nutrient-rich meals. During

my project work I have determined the amount the ash as a percent that achieve from final peak in crucibles has transferred from muffle furnace and it cool inside the desiccator and finally the weight loss is used to determine the percentage of ash. From the three samples obtain 0.59 from sample (C).

3.7 Total soluble solid content

The entire amount of soluble components in a food sample is known as total soluble solids (TSS), and it is commonly stated as a percentage of the sample's weight. These constituents comprise soluble materials that dissolve in the liquid phase of food for instance sugars and organic acids, vitamins and minerals. Total soluble solid represent the amount of soluble solid that is present in the unit volume of the solution. TSS content in solution usually measured by the index of refraction that measure via refractometer.TSS is an essential food analysis criterion that offers useful details regarding the makeup, caliber and appropriateness of food items.

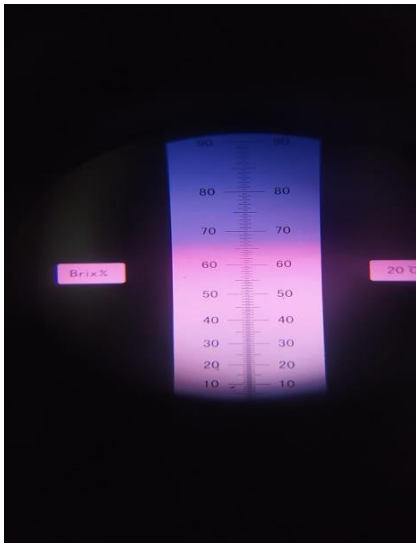

Figure 4: TSS analysis

Generally high pulp or high sugar content product contain the high amount of soluble solid whether it natural or artificially added. In my research work I found the amount of Total soluble solid in my sample 60 to 71 in various sample but TSS 67 was the best sample from every aspect of observation.

3.8 pH content

pH is the crucial factor for getting the desired jelly texture when I making the mixed fruit jelly in my study I have found that when pH being high that's mean the texture of mixed fruits jelly have been unacceptable the structure showed fragile on the other hand when pH found during processing 3 to 4.80 it provide a better texture among the other sample, pH is an important consideration when creating and manufacturing recipes. By better understanding how the pH of food affects its qualities producers can develop new goods that have the stability and sensory elements that consumers require.

Figure 5: pH analysis

Food pH needs to be regulated in order to ensure food safety, maintain quality, expedite manufacturing, follow laws and develop novel products. It provides food producers with essential knowledge about the chemical and microbiological properties of food allowing them to deliver safe high-quality products to consumers. My final result from the sample C showed 4.65 that provide exact texture and also showed the excellent quality attribute after assessing the physicochemical properties of mixed fruit jelly.

3.9 Acidity content

Acidity is necessary for many natural and commercial processes including as chemical reactions, food preservation and biological systems. It is significant to know the acidity content in food because acidic conditions prevent the growth of pathogenic microorganisms and decaying matter. Acidification is a common technique used in numerous traditional food preservation procedures such as pickling and fermenting to prolong food shelf life by creating an environment unfavorable to hazardous microbes.

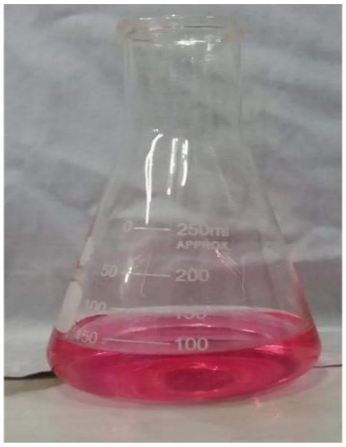

Figure 6: Acidity analysis

It might have an impact on the efficacy of specific chemical reactions as well as the taste, texture, and safety of food products and play as role for natural preservative in my developed product I found 0.23 to 0.61 acidity in percentage.

3.10 Sensory Evaluation

A popular technique in sensory evaluation to ascertain and comprehend consumer judgments about the acceptability or preference of a product is the nine-point hedonic scale. It's a straightforward but efficient method of assessing a product's appearance, flavor, texture, taste and aroma. This nine point hedonic scale work in some way including dislike extremely that represent lowest level of liking**,** consumers will strongly dislike and not accept the product. Dislike very much represent, it's better than extreme dislike but consumers can find serious faults. Dislike moderately represent, it's better than previous but has some negative feelings. Dislike slightly represent some aspects of products are dislike but consider as it improve the quality. Like very much represent that high level of liking and consumers have a excellent feeling of the product and finally Like extremely represent that it is highest level of liking and the product is desired to the consumers.

3.11 Storage stability

After complete the process product subjected storage to investigate the quality parameter including color, flavor, texture, pH, TSS and turbidity. In this research work product was kept at 27° C to 34° C temperature that is ambient, for 07 days, 15 days and 30 days and aforementioned parameter analysis accordingly. On the other hand ten participants who were semi-trained used a hedonic 9-point scale to score the sensory quality attributes. We monitored the mixed fruit jelly's color, flavor, a turbidity and overall acceptability.

3.12 Proximate analysis

3.12.1 Test of moisture

Required materials

- Analyzer
- Sample
- Spoon
- Electric balance
- Crucible

Working procedure

- Firstly, take the cover and put a vacant moisture dish over top of the moisture analyzer prior proceeding.
- And then need to turning on the switch is the next step. The temperature, time and other variables will all be displayed by the analyzer as 0.000.
- Next needed to adjust the temperature, press the choose button.
- Accurately 2.00 g of the sample should be added on the dish then spread out as evenly as possible.
- After that step shut the analyzer lid and hit the START button.
- The analyzer now takes some time to automatically analyze the moisture content and displays the result show as a percentage.
- After completed this work the analyzer will automatically stop and emit three beeps.
- Record the result.

Calculation

Percentage moisture have calculated employing the following formula

$$\% \text{ Moisture} = \frac{w-d}{w} \times 100$$

Where value ,

w = wet weight

d = weight after drying

3.12.2 Ash test

Required materials

- Weighing balance
- Collect metal tong
- Heat resistant glove
- Clean spatula
- Useful desiccator
- Crucible
- Running muffle furnace

Step-1: In the beginning need preparation of crucible

- The crucible needs to be washed then put into the oven.
- And then required dry the crucible 105 °C
- About twenty minutes, removing the crucible from the heated oven and enable it to cool in a desiccator.
- The crucible will ultimately get ready to be employed in the ash analysis.

Srep-2: Sample preparation

- Throughout this time, estimate the total weight of the unfilled crucible and tire the crucible.
- And another time insert 3–4 grams of the specimen into the crucible.
- Keep an ongoing track on the sample weight.

Step-3: Combustion step

- In this section it is essential to switch the furnace's power ON.
- Following this step, carefully set the sample involving the crucible into the furnace.
- Now needed to off the furnace door tightly
- Assign a 6-hour period and an average temperature of 600 °C.

- In the last time run the Furnace
- After six hours, migrate off the power and quietly open the door.
- After withdrawing the crucible from the furnace, placed it into the desiccator to cool.

Srep-4: Need to measure final weight

- Now take the last of the crucible's weight, which revealing the ash.

Calculation

$$\textbf{\% Ash} = \frac{w2-w1}{w3} \times 100$$

Where,

W_1 = Crucible weight

W_2 = Weight for ash with crucible

W_3 = sample weight

3.6.3 °Brix test

Required material

- Hand Refractometer
- Sample

Procedure

- Firstly need measurable sample
- Clean the refractometer's daylight plate properly
- Then place the sample at daylight plate and cover by main prism assembly
- Find the result from eyepiece.

3.12.3 pH test

Required materials

- pH meter
- Beaker
- Sample

Procedure

- At first take 100 ml sample
- Then immerse the pH meter electrode into sample
- Wait for stable value
- Read the result from meter.

3.12.4 Acidity test

Required materials

- Beaker
- Dropper
- Phenolphthalein indicator
- Sodium Hydroxide Solution

Procedure

- At First take 10 ml sample in a beaker.
- And then add ½ drops phenolphthalein indicator.
- Then titrate with 0.1 N Sodium Hydroxide solution until the color changes to pink
- Finding burette reading

Calculation

Acidity = (Burette reading× Normality of alkali × Equivalent weight of Acid ×100) ÷ (Weight of sample×1000)

CHAPTER 4

RESULTS AND DISCUSSION

4.1 Proximate composition

After analysis the prepared sample moisture content showed for sample (A) 40, sample (B) showed 43 and third sample (C) showed 30, ash content for sample (A),(B) and (C) showed 0.7, 0.6, 0.59 respectively. TSS found 60, 72 and 67 for sample (A), (B) and (C) in a raw. Total sugar peak for sample (A) showed 64, for sample (B) showed 68 and sample (C) showed 63 in term of pH has showed 5.9, 6.1, and 4.65 for sample (A), (B) and (C) respectively, finally acidity showed for sample (A) 0.61, sample (B) showed 0.23 and third sample (C) showed 0.49

Table 5. Proximate analysis of mixed-fruit jelly

Parameters	Sample A	Sample B	Sample C
Moisture content	40	43	30
Ash content	0.7	0.6	0.59
TSS	60	72	67
Total sugar (%)	64	68	63
pH	5.9	6.1	4.65
Acidity	0.61	0.23	0.49

4.2 Sensory evaluation

Applying the nine point hedonic scale the sensory characteristics from mixed fruits jelly sample were examined. Sensory attributes consisting appearance, texture, color, flavor and taste has assessed by five panel of faculty member and 10 students from the Department of (NFE) Nutrition and Food Engineering in Daffodil International University.

Sample (A) **Sample (B)** **Sample (C)**

Figure 7: Product sample

The sample was to be rated by each taster in a range from "very like" to "extremely dislike." Nine-point hedonic scale is used. Comments about the flavor, aroma, appearance and other aspects of the product. Additionally, the tester may offer texture. To evaluate the outcome, the product that gathered most of the votes is used. Eventually the lowest possible score on the other hand highest possible score.

Table 6. Sensory evaluation score

Particular	Sample A	Sample B	Sample C
Appearance	7.8	7.6	9.5
Taste/Flavor	6.4	9.1	8.5
Texture/Consistency	6.5	7.5	8.5
Aroma/Smell	8.0	8.4	10
Overall Acceptability	6.5	7.5	9.7

Appearance

The primary determinant of a product's acceptability is its appearance. It stands for the merchandise's look and degree of transparency. Consumer firstly consider to buy a product that is it look good or bad basis on this first sight it's really important to keep the good quality The product's research panelists declared it to be totally acceptable and recommended that it be developed further.

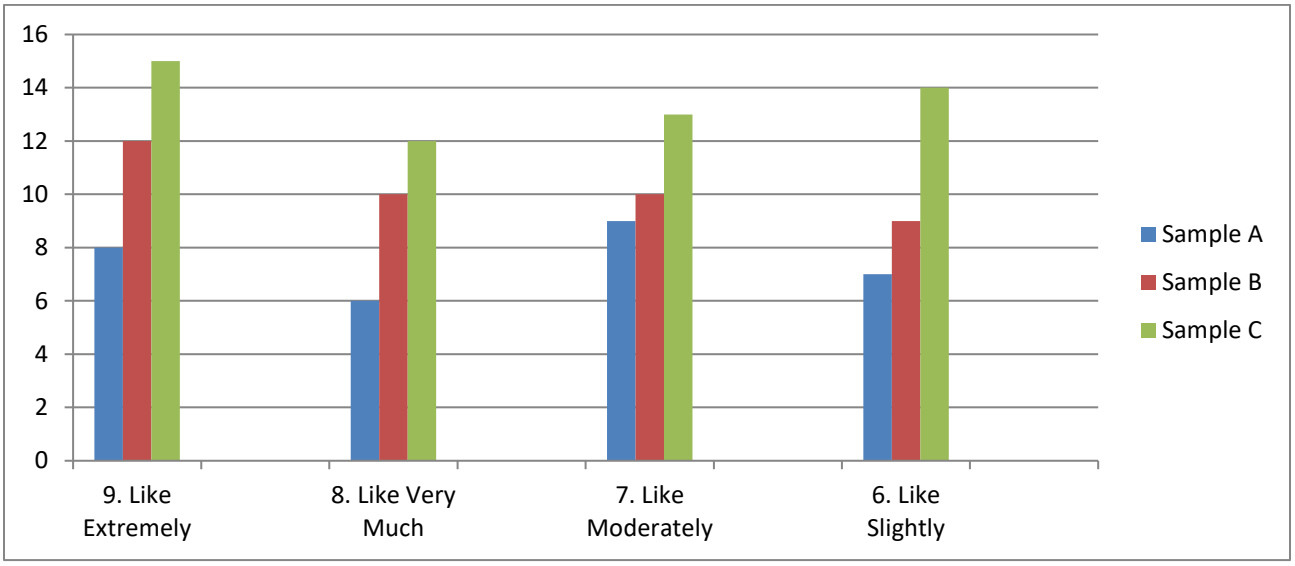

Figure 8: Bar chat of appearance

Taste

Taste preferences are usually influenced by a multitude of circumstances. It is upheld when the customer uses the merchandise in a tasteful manner. Participants who consume this jelly report amazing results. When a product is tasty then consumer willingly try to purchase compared to other products.

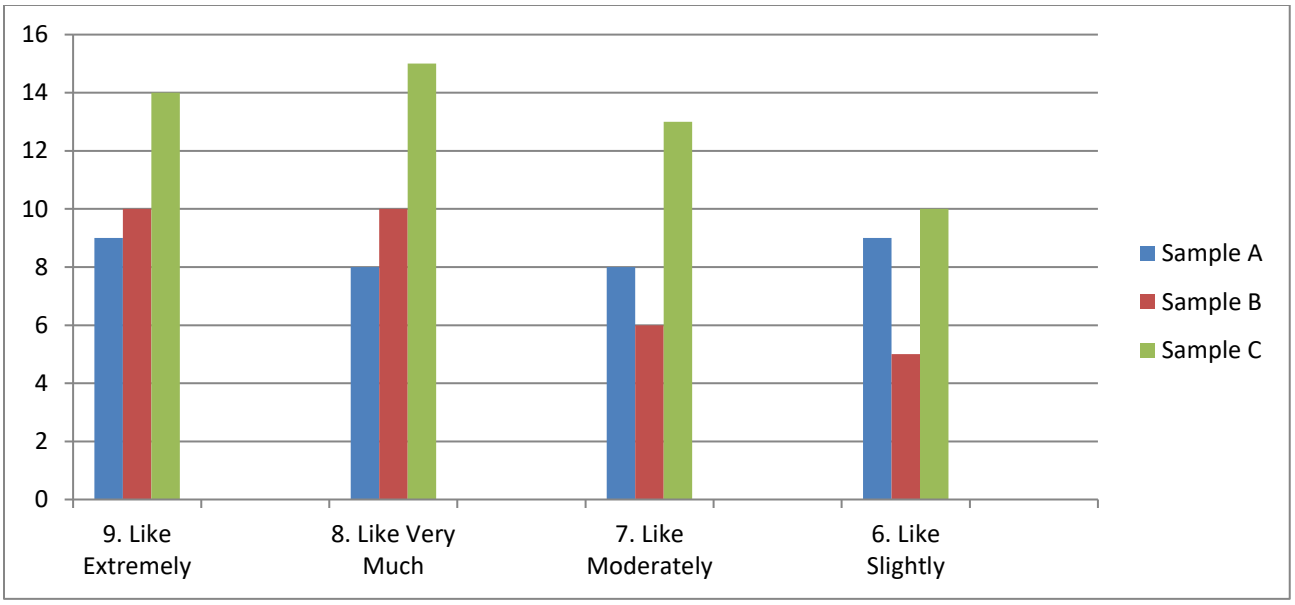

Figure 9: Bar chat of taste

Texture

Texture is the feeling that anything has on the lips, teeth and fingertips. In actuality, physical tools or sense organs like the palate, lips, tongue and fingers are typically used to assess the mechanical properties of food. The amount of water in food changes its texture. Consumers believe the panelists' evaluations of this product are very good.

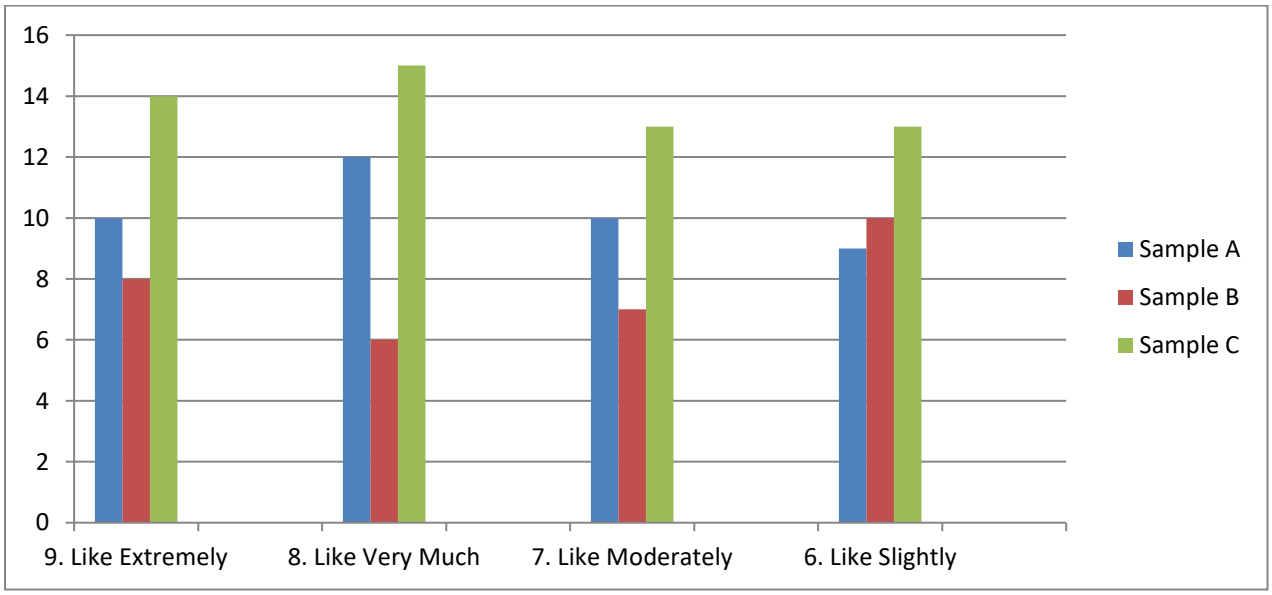

Figure 10: Bar chat of texture

Aroma

The nose is often the primary organ used to detect significant volatile substances like aroma, however taste receptors are found in the mouth and are affected by chewing food. Because it is volatile, it only lasts for a short while during and after eating. Aroma often influence the consumer to recall the product durability.

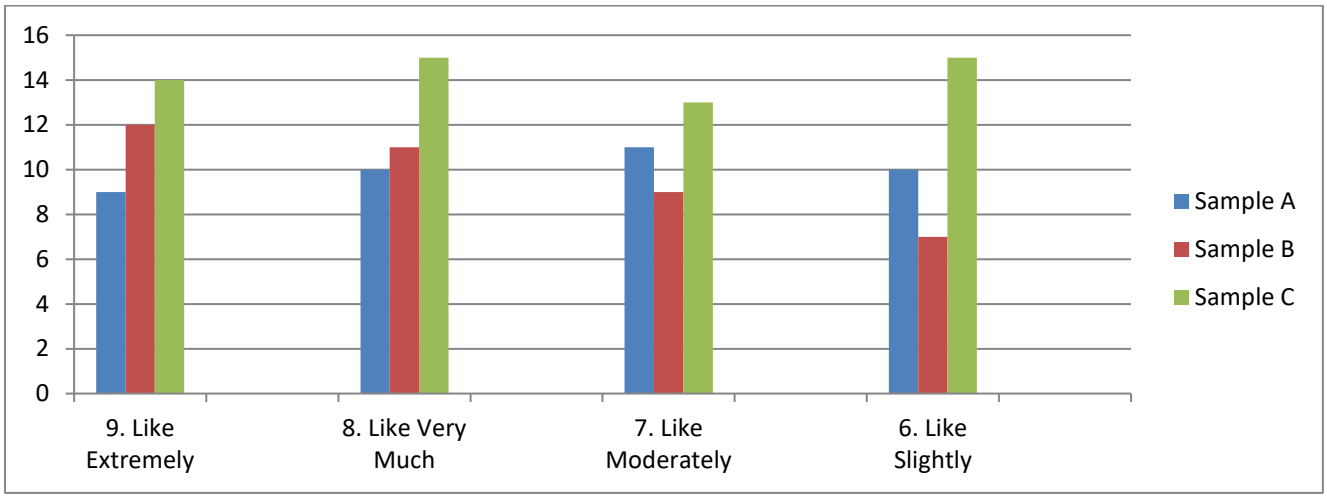

Figure 11: Bar chat of aroma

Overall acceptability

Both panelists and buyers found this mixed fruit jelly to be satisfactory when all quality parameters were taken into account. For this product to be produced in large quantities and distributed as widely as is practicable in the future in both home and foreign markets.

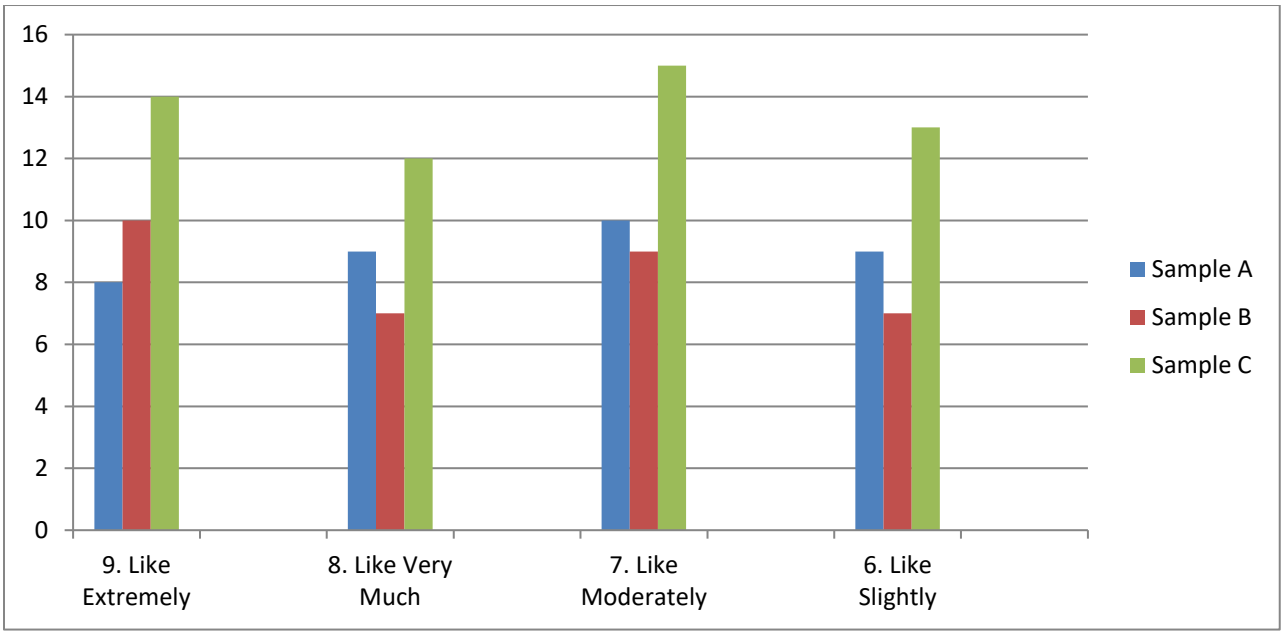

Figure 12: Bar chat of overall acceptability

CHAPTER 5

CONCLUSION

5. CONCLUSION

Fruits based products such as jam, jelly are keeping their acceptability due to the numerous nutritional, medicinal and health benefit. Analyzing the predetermined attributes especially chemical composition I have obtained moisture (%) 30, acidity 0.49, TSS 66, pH 4.65, total sugar (%) 63, % ash 0.59. From my research work it can be concluded that the better quality of mixed fruits jelly from dragon, pomegranate and strawberry can be prepared from 60% dragon extract, 25% pomegranate extract and 15% strawberry extract with sugar 280 g, Citric acid 1.8 g, Pectin 2.8 g and KMS 90 PPM in 300 ml solution and it will be accepted from sensory attributes, chemical composition and well storage stability at each that optimal and refrigerated conditions up to 3 months. This study assured that a value added product is possible to produce by fruit and could be take an account for mass production. The results of the investigation suggest that it would be feasible to manufacture goods made from mixed fruits. Before recommending that the products be produced commercially a thorough analysis of their economic viability is necessary.

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