



ISSN (E): 2320-3862  
ISSN (P): 2394-0530  
NAAS Rating: 3.53  
JMPS 2018; 6(6): 30-32  
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Received: 07-09-2018  
Accepted: 09-10-2018

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## Development of Herbal Jelly (with Hibiscus Rosa sinensis and Rose petals)

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### Abstract

Jelly is a semi solid product. It is prepared by boiling, straining a clear solution of pectin-containing fruit extract, free from pulp is obtained, after the addition of sugar and acid, a jelly is obtained ensure that the TSS (Total soluble of solid) of jelly should be in range of 65-68%. There are different types of jelly already available in market. Apple, lemon, orange and guava jelly are available in market. But, they use synthetic colours. This innovation has been done by using Hibiscus Rosa sinensis petals and rose petals. In this jelly we are not using synthetic colour. This jelly is healthier than conventional jelly. This product has high nutritional value. Hibiscus Rosa sinensis contains high amount of vitamin C and antioxidant. Rose also contain high amount of antioxidant and vitamin E. Many trials were formulated from T<sub>1</sub>-T<sub>8</sub>, among these 8 trials T<sub>5</sub>, T<sub>6</sub>, & T<sub>7</sub> have more acceptability than other. Trials were performed for this innovation. In T<sub>5</sub> trial 50:50(hibiscus: rose), T<sub>6</sub> trial 75:25(hibiscus: rose) & T<sub>7</sub> trial 60:40(hibiscus: rose) juice extracts were used. T<sub>7</sub> trial was the best trial out of all and thus was selected.

**Keywords:** hibiscus rosa sinensis, rose, hypertension

### 1. Introduction

Jelly is made by concentrating the extracted juice from petals. A good jelly should be clear and firm enough to hold its shape when turned out of its container. Jelly should be tender and yet retained the angle of the cut. Jelly should be fresh and fruity in taste. It should not be gummy, sticky, or syrupy. It should not contain crystallized sugar. The product should free from dullness with little or no syneresis and neither tough nor rubbery. Pectin, acid, sugar and water are the four essential ingredients. Pectin test and determination of end-point of jelly formation is very important for the quality of the jelly. Pectic substances are present in flowers. Percent of pectin of good quality in the extract is sufficient to produce good jelly. If the pectin content is higher then a firm and tough jelly is formed and jelly may fails to set. The jelling of extract depends on the amount of acid and pectin present in the flowers. The final jelly should contain at least 0.5% but not more than 1% acid because a large quantity of acid may cause syneresis and here citric acid was used. Sugar is essential constituent of Jelly, imparts to it sweetness as well as body. If the concentration of sugar is high, the jelly retains less water resulting in a stiff jelly because of dehydration. Hibiscus rosa-sinensis is a flowering plant native to tropical Asia, Hibiscus is commonly consumed in teas made from its flowers, leaves and roots, and in addition to casual consumption Hibiscus is also used as an herbal medicine to treat hypertension cholesterol production and cancer progression. Reports indicats the hibiscus extracts can inhibits the growth of cancer cell types including mammary carcinoma, leukemia and melanoma. Hibiscus flowers in phytonutrients which can be attributed for its medicinal properties. Its nutritional content, including antioxidants, flavonoids, organic acids such as malic acid polysaccharides. Hibiscus is rich the source of pectin, antioxidant. Antioxidant properties which increases its storage quality by preventing oxidative decay. Hibiscus is also a very good natural source of vitamin C. Rose petals contain mostly vitamin C, vitamin A, vitamin E and other minerals. However the medicinal benefits of rose can be attributed to presence of phytochemicals present. Rose petals contain terpenes, glycosides, flavonoids and anthocyanins which have beneficial effect on health.

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## 2. Material and Methods

### 2.1 Material Procurement

Hibiscus and rose petals, pectin, citric acid were collected from market. Then petals were subjected to cleaning, sorting & grading operations and then utilized for further processing.

### 2.2 Preparation of juice extract

Firstly pick the rose and hibiscus petals and washed them and after washing boil the petals for 10 to 15 min in water. Then extract the juice from the petals.

### 2.3 Preparation of Herbal jelly

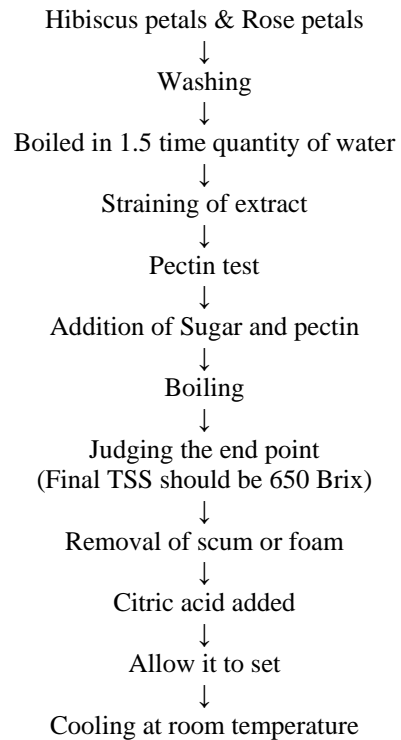
100ml of clear hibiscus petals and rose petals juice extract were heated and 2% pectin, 61 % sugar and 0.5% citric acid were added to the extract while heating. Heating was continued with constant stirring until the TSS reached to 65° Brix and desired consistency was reached. Alcohol test was carried out to determine the pectin content and amount of

sugar to be used as described by R.P. Srivastava.

### 2.4 Alcohol test

One teaspoon of strained juice extract was taken in a glass beaker and cooled and to that 3 teaspoon of methylated spirit are poured gently down on the side of beaker, which is rotated for mixing and allowed to stand for few minutes. As the extract contains a moderate amount of pectin, the clot is formed and it was found to be less firm and fragmented.

### 2.5 Basic Procedure



### 3. Variation in Herbal jelly formulations

Three variations in formulations percentage of juice will be same only changes with citric acid, pectin & sugar concentration.

**Table 1:** Variation in jelly formulation

Sample	Juice	Sugar	Pectin	Citric acid
Trial 5	250ml	100g	3g	1g
Trial 6	250ml	120g	4g	2g
Trial 7	250ml	150g	7g	1.5g

### 4. Sensory Analysis Protocol

9-point hedonic scale was used for analyzing different sensory attributes like appearance, color, flavor, texture and overall acceptability by a panel member. Average scores were calculated accordingly.

**Table 2:** sensory analysis summary

Sample	Appearance	Colour	Flavor	Texture	Overall Acceptability
Trial 5	5	7	7	7	6
Trial 6	7	8	7	7	7
Trial 7	8	9	9	8	8

After sensory analysis by prescribed number of panelist using hedonic scale rating it was decided that "Trial 7" was satisfactorily accepted.

### 5. Problems Observed during Jelly Preparation

Formulation with less than 1% pectin showed failure to set. It is necessary to observe T.S.S. minimum 65o brix, for proper setting of jelly. Excess sugar (T.S.S.) can formed crystals or over concentration of jelly. Avoid prolonged cooking since it destroyed coagulation property of pectin. During boiling of mixture scum forms over the surface, if not removed it results in the formation of cloudy jelly. Care should be taken during pouring.

### 6. Conclusion

Hibiscus petals and Rose petals are good for human. It's more nutritional value. In present study Herbal jelly was developed successfully. Many trials were formulated. Which were concluded best in sensory evaluation the trial no. 7 was finalize. These hibiscus and rose petals jelly has more space to be popular among all age grope. Standardization of Herbal jelly was done. Formulation of Herbal jelly scored highest in sensory evaluation with 8 overall acceptability.

### 7. References

1. Srivastava R, Kumar S. Fruits and Vegetables preservation- principles and practices, 3rd edition, International book distribution co. Army printing press Luck now, India, 2007.
2. Nayak D, Ashe S, Rauta PR, Nayak B. Biosynthesis, characterization and antimicrobial activity of silver nanoparticles using *Hibiscus rosa-sinensis* petals extracts. IET Nanobiotechnol. 2015; 9:288-293.
3. Shewale PB, Patil RA, Hiray YA. Antidepressant-like activity of anthocyanidins from *Hibiscus rosa-sinensis* flowers in tail suspension test and forced swim test. Indian J Pharmacol. 2012; 44:454-457.
4. Kashani AD, Rasooli I, Rezaee MB, Owlia P. Antioxidative properties and toxicity of white rose extract; Iranian Journal of Toxicology. 2011; 5(1&2):415-425.
5. Da-costa-Rocha I, Bonnlaender B, Sievers H, pischel I, Heinrich M, Hibiscus. Sabdariffa I, a-photochemical and pharmacological review. Food chem. 2014; 165:424-443.
6. Hsu RJ, Hsu Yc, Chen Sp. *et al.* the triterpenoids of *Hibiscus syriacus* induce apoptosis and inhibit cell migration in breast cancer cell. BMS complement altem med. 2015; pp. 15:65.
7. Tsai TC, Huang HP, Chang TC, Wang CJ. An anthocyanin-rich extract from *Hibiscus sabdariffa* Linnaeus inhibits H-nitrosomethylurea induced leukemia in rats. J Agric food chem. 2014; 62:1572-1580.
8. Chiu CT, Hsuan SW, Lin HH, Hsu CC, Chen JH. *Hibiscus sabdariffa* leaf polyphenolic extract. Induces human melanoma cell death, apoptosis, and auto phagy. food sci; 2015; 62:1572-1580.
9. Jadhav VM, Thorat RM, Kadam VJ, Sathe NS. Traditional medicinal uses of *Hibiscus rosa-sinensis*. J pharm Rcs. 2009; 20:1220-1222.