

# Effect of dried herbal powder in preparation of pineapple jelly

NIDHI DUBEY AND RANU PRASAD

Value added pineapple jelly was made from the pineapple fruit and mixture of dried herbal powder (mint, ginger, cardamom, clove and tulsi). It is typically made by fresh pineapple fruits and using the resulting pineapple pulp to create a rich, sweet jelly which has a good taste, consistency, flavour and colour. It is a good source of ascorbic acid and minerals. It can be used medicinally as an potential anti-inflammatory and digestive benefits, antioxidant protection and immune support Manganese and thiamin (vitamin B<sub>1</sub>) for energy production and antioxidant defenses. The experiment work of value added pineapple jelly was conducted in the research laboratory of Foods and Nutrition, Halina school of Home Science, SHIATS, Allahabad. The studies were based on the various treatment of dried herbal powder ( mint, ginger, tulsi, cardamom, clove) also find out the best treatment. Data analyzed for Randomized Block Design (RBD). From the experiment it is evident that among all the treatment T<sub>1</sub> mint dried powder added pineapple jelly ratio 100 g pineapple jelly + 1 g mint dried powder was the best with regards to physio chemical properties of value added pineapple jelly. For a good quality jelly, a sugar concentration of at least 60 per cent with the addition of 1 per cent mint dried powder, 0.5 per cent pectin with pH between 3.2 and 3.5 would produce a good jelly.

**Key Words :** Value addition, Antioxidant, Herbal powder, Jelly

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## INTRODUCTION

A jelly is a semi-solid product prepared by boiling a clear, strained solution of pectin-containing fruit from pulp, after the addition of sugar and acid. A perfect jelly should be transparent, well-set, but not to stiff, and should have the original flavour of the fruit. It should be attractive colour and keep its shape when removed from the mould. It should be firm enough to retain a sharp edge but tender enough to quiver when pressed. It should not be gummy, sticky or syrupy or have crystallization sugar. The product should be free dullness, with little or no syneresis (weeping), and neither tough nor rubbery (Sethi, 2006).

The pineapple is the leading edible member of the family, Bromeliaceae which embraces about 2000 species. Mostly

epiphytic and many strikingly ornamental now known botanical as *Ananas cosmos* Merr. The origin of the pineapple is the American continent, probably Brazil and Paraguay. It has spread throughout tropical and subtropical region as a commercial fruit crop. The major pineapple producing states in India are Assam, West Bengal, Karnataka, Meghalaya, Manipur, Arunachal Pradesh, Kerala and Bihar During 2001-2002. India produced 1.26 million tonnes of pineapple from about 80000 ha. Slightly acidic soil with pH range of 5.5 to 6.0 is considered optimum for pineapple cultivation. Areas with a heavy rainfall popular commercial pineapple variety in India is giant Few other important varieties are queen, Kew, Mauritius, Charlotte, Rothchild, Jaldhup, Desi, Lakhat etc. (Wikipedia, 2009).

Guava, Sour apple, Plum, Caronda, Wood apple, Loquat, Papaya and Gooseberry are generally used for preparation of jelly. Apricot, Pineapple, Strawberry, Raspberry etc. Can be used but only after addition of pectin powder, because these fruits have low pectin content. Fruits can be divided into four groups according to their pectin and acid contents (Srivastava and Kumar, 2006).

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Treatments	Product and product amount	Extract and extract amount	Citric acid	Sugar	Pectin	Replications
T <sub>0</sub>	Pineapple 1 kg	-	5 g	600 g	5 g	4
T <sub>1</sub>	Pineapple jelly	Mint 1 %	-	600 g	-	4
T <sub>2</sub>	Pineapple jelly	Tulsi 1%	-	600 g	-	4
T <sub>3</sub>	Pineapple jelly	Ginger 1%	-	600 g	-	4
T <sub>4</sub>	Pineapple jelly	Clove 1%	-	600 g	-	4
T <sub>5</sub>	Pineapple jelly	Cardamom 1%	-	600 g	-	4

The study was conducted to analyze the chemical properties of the prepared value added product

difference test (Panse and Sukhatme, 1967). Details of the treatments are given Table A.

## METHODOLOGY

### Selection site:

All the experimental work required in this project was carried out in the research laboratory of Foods and Nutrition, Halina school of Home Science, SHIATS, Allahabad, 2011.

### Collection of ingredient:

Fresh ripe pineapples were used for making jelly. Herbal powder of clove, mint, cardamom, ginger and tulsi were used, purchased from local market of Allahabad.

### Method:

Chemical analysis of fresh pineapple jelly was done for the determination of pH, TSS, acidity and vitamin C. The data ascertained from the experiment were subjected to statistical analysis using analysis of variance technique two way classification, Randomized Block Design (RBD) and critical

## OBSERVATIONS AND ASSESSMENT

Findings of the present study entitled effect of dried herbal powder in preparation of pineapple jelly are presented and discussed in this research paper.

It is called vitamin C. The data on effect of herbal extract and their interaction on ascorbic acid of pineapple jelly at ambient temperature is shown in Table 1. The data were found statistically significant at four replications. It is pertinent from that the herbal extract added pineapple jam showed significantly increased ascorbic acid. Ascorbic acid treatment T<sub>1</sub> (8.85) extract added pineapple jelly gave higher ascorbic acid followed by T<sub>2</sub> (8.65), T<sub>3</sub> (8.09), and lower ascorbic acid was seen in T<sub>4</sub> (8.07), T<sub>0</sub> (8.065) and T<sub>5</sub> (8.05).

The data on effect of herbal extract and their interaction on pH of pineapple jelly at ambient temperature is shown in Table 2. The data were found statistically significant at four replications. It is pertinent from that the herbal extract added

**Table 1.** Effect of different treatments and their interaction on ascorbic acid of pineapple jelly

Treatments →	T <sub>0</sub>	T <sub>1</sub>	T <sub>2</sub>	T <sub>3</sub>	T <sub>4</sub>	T <sub>5</sub>
Replications ↓						
R <sub>1</sub>	8	8.9	8.7	8.1	8	8
R <sub>2</sub>	8.14	8.9	8.6	8.15	8.2	8.1
R <sub>3</sub>	8.12	8.8	8.6	8	8	8
R <sub>4</sub>	8	8.8	8.7	8.1	8.1	8.1
Total	32.26	35.4	34.6	32.4	32.3	32.2
Mean	8.065	8.85	8.65	8.09	8.07	8.05
Range	8.14	8.9	8.7	8.15	8.2	8.1
	8	8.8	8.6	8	8	8

**Table 2.** Effect of different treatments and their interaction on pH pineapple jelly

Treatments →	T <sub>0</sub>	T <sub>1</sub>	T <sub>2</sub>	T <sub>3</sub>	T <sub>4</sub>	T <sub>5</sub>
Replications ↓						
R <sub>1</sub>	3.2	3.2	3.3	3.5	3.3	3.4
R <sub>2</sub>	3.1	3.3	3.3	3.4	3.4	3.3
R <sub>3</sub>	3.2	3.2	3.3	3.41	3.4	3.36
R <sub>4</sub>	3.1	3.3	3.2	3.5	3.4	3.4
Total	12.6	13	13.1	13.8	14	13.5
Mean	3.15	3.25	3.28	3.45	3.38	3.37
Range	3.2	3.3	3.3	3.5	3.4	3.4
	3.1	3.2	3.2	3.4	3.3	3.3

**Table 3.** Effect of different treatments and their interaction on TSS of pineapple jelly

Treatments →	T <sub>0</sub>	T <sub>1</sub>	T <sub>2</sub>	T <sub>3</sub>	T <sub>4</sub>	T <sub>5</sub>
Replications ↓						
R <sub>1</sub>	64	66.0	65.2	65.5	65	66.5
R <sub>2</sub>	64.5	66.1	65	65.7	65	66
R <sub>3</sub>	64.5	66.0	65	65.6	65.5	66
R <sub>4</sub>	64	66.3	65	65.6	65.4	66.4
Total	257	264	260	262	261	265
Mean	64.25	66.1	65.1	65.6	65.2	66.2
Range	64.5	66.3	65.2	65.7	65.5	66.5
	64	66.0	65	65.5	65	66

**Table 4.** Effect of different treatments and their interaction on acidity of pineapple jelly

Treatments →	T <sub>0</sub>	T <sub>1</sub>	T <sub>2</sub>	T <sub>3</sub>	T <sub>4</sub>	T <sub>5</sub>
Replications ↓						
R <sub>1</sub>	0.62	0.63	0.64	0.65	0.68	0.67
R <sub>2</sub>	0.61	0.63	0.64	0.65	0.68	0.67
R <sub>3</sub>	0.61	0.63	0.63	0.66	0.69	0.66
R <sub>4</sub>	0.62	0.64	0.63	0.66	0.69	0.66
Total	2.46	2.53	2.54	2.62	2.7	2.66
Mean	0.615	0.63	0.64	0.66	0.69	0.67
Range	0.62	0.64	0.64	0.66	0.69	0.67
	0.61	0.63	0.63	0.65	0.68	0.66

pineapple jelly showed significantly increased pH. pH treatment T<sub>4</sub>(3.38) extract added pineapple jelly gave higher pH followed by T<sub>5</sub> (3.37), T<sub>3</sub> (3.45), T<sub>2</sub>(3.28) and pH was seen in T<sub>1</sub> (3.25) and T<sub>0</sub> (3.15).

The data on effect of herbal extract and their interaction on TSS of pineapple jelly at ambient temperature is shown in Table 3. The data were found statistically significant at four replications. It is pertinent from that the herbal extract added pineapple jelly showed significantly increased TSS. TSS treatment T<sub>5</sub> (66.2) extract added pineapple jelly give higher TSS followed by T<sub>1</sub> (66.1), T<sub>3</sub> (65.6), T<sub>4</sub> (65.2) and T<sub>2</sub> (65.1). Least TSS was with T<sub>0</sub> (64.25).

The data on effect of herbal extract and their interaction on acidity of pineapple jelly at ambient temperature is shown in Table (4). The data were found statistically significant at four replications. It is pertinent from that the herbal extract added pineapple jelly showed significantly increased acidity. Acidity treatment T<sub>4</sub> (0.69) extract added pineapple jelly gave higher acidity followed by T<sub>5</sub> (0.67), T<sub>3</sub> (0.66), T<sub>2</sub> (0.64) and lower acidity was seen in T<sub>1</sub> (0.63) and T<sub>0</sub> (0.615).

### Conclusion:

Among the experimental treatments, T<sub>1</sub> (Addition of 1 per cent mint powder) was most acceptable for pineapple jelly. For a good quality jelly, a sugar concentration of at least 65 per

cent with the addition of 1 per cent mint powder and 0.5 per cent pectin with pH between 3.2 and 3.5 would produce a good jelly of acceptable colour, spreadability, gel set and good taste as well. It can be used medicinally as an potential anti-inflammatory and digestive benefits, antioxidant protection and immune support.

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