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## PREPARATION AND STANDARDIZATION OF VEGETABLE SOUP SUPPLEMENTED WITH APPLE FRUIT

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### ABSTRACT

The present work was aim to prepare vegetable soup supplemented with Apple Fruit. Water, Carrot, Capsicum, onion, garlic, clove, tomato puree, and coriander leaves, corn powder, pepper powder, chilli (served as T<sub>0</sub>). Other trials which were used in combination with apple fruit to formulate T<sub>1</sub>, T<sub>2</sub>, and T<sub>3</sub> in different proportion respectively. Physical, chemical and sensory evaluation was performed. The result indicated that supplementation with fruit (Apple) significantly enhanced the nutritional characteristics, affect taste, acceptability of resultant soup samples. It had significant effect of thickness and appearance. The result clearly demonstrated the usefulness of

supplementing vegetable soup with fruit to enhance nutritional quality of resultant soup and fruit was most valuable addition with highest acceptability.

### KEYWORDS

Vegetable soup, Fruit, nutritional quality, physical and chemical properties, sensory quality attributes.

### INTRODUCTION

The popularity of Soups today may due to increased nutrition consciousness, to desire for simpler or lighter meals. The Frantic rhythm of modern life and increase no. of people who live alone have determined changes in food preparation and in habits of consumption. Less time is available for the cook to make food. In this consequence, the rapid progress of ready-oven food technology and its product mentioned. Vegetable soup play important role in the nutrition of people because they fulfilled present and future social consumer requirements (Farzana et al. 2017).

The development of soup as convenience food product originated in France where the evening meal consisted entirely of soup. Soup was prepared from local ingredients which was readily and cheaply available, this basic concept has been developed to produce soup in its many forms and flavours as consumers convenience products (Abdel-Haleem and Omran, 2014).

In recent years, consumers have become more interested in foods with both health value. In general, ingredients origin, product formulation and process method used could affect consumer food choice.

The advantages of ready to oven fruit mix vegetable soup, particularly protection from enzymatic and oxidative spoilage and flavour stability at room temperature,. Also had quite nutritive value, particularly source of protein, carbohydrate and low fat. In addition they are ready for reconstitution in short time for making in home.

It is well known that good quality and reasonable ration of fruit mix vegetable soup depend on variety and functional properties of supplemented individuals. Balance of nutrients may obtained by including whole vegetable and fruit such this diet supply large proportion of energy need, carbohydrate protein, dietary Fibre, amino acids, minerals. Also functional ingredients can be easily incorporated into soup to provide health benefits (Igwenyi and Azoro, 2014).

The general objective of the study is to assess and determine the nutrient composition of Apple mixed vegetable Soup prepared specifically, the study is aimed to Prepare Apple mixed vegetable soup meals consumed for customers; to assess the Nutrition composition of the soup and to evaluate the organoleptic attributes of the soup meals.

## **MATERIALS AND METHODOLOGY**

### **Raw materials**

Apple, carrots, capsicum, Onion, garlic, clove, corn powder, coriander, tomato puree, pepper powder, salt, oil, chilli were obtained from local market in Murbad, Thane, India.

### **Preparation of raw materials**

Apple, carrot, capsicum, tomato, were sorted, washed and cut into Small cubes, making the tomato puree by using mixer. Preparing the vegetable stock by adding vegetables in boiling water then make the Onion garlic paste after that mix with various spices in pan with oil.

### Formulation of fruit mixed vegetable soup

The prepared samples was seasoned with Onion, garlic, coriander, namely pepper powder, cloves, and salt then mixed to formulate 4 samples T<sub>0</sub> T<sub>1</sub> T<sub>2</sub> T<sub>3</sub> as shown in table 1.

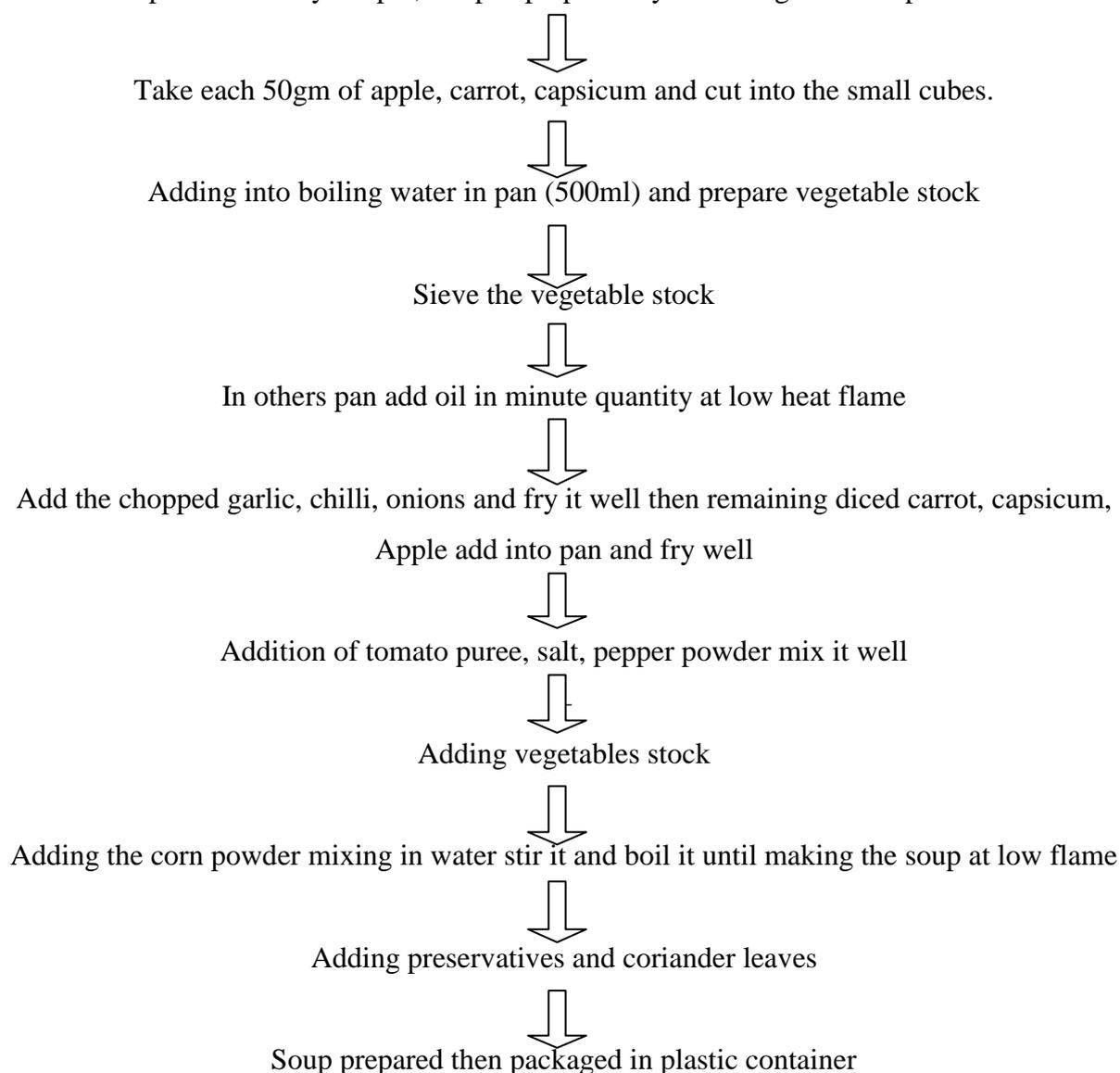
**Table 1: Formula for preparation of fruit mixed vegetable soup.**

Samples/ingredients (g)	Apple	Carrot	Capsicum	Corn powder
T <sub>0</sub> (Control)	50	50	50	10
T <sub>1</sub>	40	50	50	4
T <sub>2</sub>	50	40	50	8
T <sub>3</sub>	50	50	40	12

### Preparation of fruit mixed vegetable soup

#### Flowchart 1: Preparation of T<sub>0</sub> (Control) soup

The process is very simple; Soup is prepared by following standard procedure.



### Sensory evaluation

The organoleptic evaluation with respect of colour, flavour, texture, were evaluated by Ten trained/semi trained judges using 9 point hedonic scale.

### Proximate Analysis

The analysis carried out were Protein content through Kjeldhal method, Fat was estimated by soxhlet method, Carbohydrates difference method, Moisture, Ash and Crude fiber was determined by AOAC, 2002 method.

### Statistical Analysis

Means and standard deviation were subjected to analysis of Variance (ANOVA) to see if there are significant difference among the four samples of soup in their proximate composition and vitamin composition.

## RESULTS AND DISCUSSION

### Proximate Analysis of prepared Soup

The moisture content of apple mixed vegetable soup varied. The values ranged from (90.2 to 91.1%). The mean value of moisture content of prepared soup (91.1%) is significantly higher than other market Soups. The ash content of the soups ranged from 3 to 4.2%. The mean of ash content of prepared soup is (3.6%) is lower than other Soups. The protein content of Soup determined is (2.5%). The fat content of Soup is calculated and that is (12%). The fat content of prepared soup was significantly lower than other soups ( $P < 0.05$ ). The fibre content of the finished soup is significantly is (5%). Among all the soups studied, the carbohydrate content of apple mixed vegetable soup (94.2%) is significantly higher than the other soups. However there is high calorific energy of prepared soup is approximately (574.8 kcal).

**Table 2: Proximate analysis of prepared soup.**

Proximate analysis							
Parameter	Moisture (%)	Protein (%)	Carbohydrate (%)	Fat (%)	Ash (%)	Crude fibre (%)	Energy (Kcal)
%	91.1±0.70	2.5±0.70	94.2±0.28	12±1.41	3.6±0.84	5±1.41	574.8

### Organoleptic Evaluation of prepared Soup

**Table 3: Organoleptic evaluation of Apple mixed vegetable soup.**

Parameters/samples	T <sub>0</sub>	T <sub>1</sub>	T <sub>2</sub>	T <sub>3</sub>
Colour	68±1.03	70±0.81	72±0.78	78±0.42
Taste	90±0.31	69±0.56	73±0.82	82±0.63
Flavour	70±0.81	67±0.67	69±0.56	79±0.56
Consistency	76±0.84	64±0.51	69±0.56	82±0.63
Overall acceptability	78±0.91	67±0.67	70±0.66	81±0.31

This mean value is calculated of each parameter are presented in sample. This table shows that score for samples T<sub>3</sub> recorded highest score. This score for parameters like colour (78±0.42) taste (82±0.63) flavour (79±0.56) consistency (82±0.63) and overall acceptability (81±0.31) was found. The sample T<sub>3</sub> was organoleptically better than other soup samples

### Effect of storage on Organoleptic properties of prepared soup at temperature 4°C During Storage Period

**Table 4: Sensory evaluation at different days storage period.**

SAMPLE	APPLE MIXED VEGETABLE SOUP				
	STORAGE DAYS	Colour	Taste	Flavour	Consistency
0	78±0.42	82±0.63	79±0.28	82±0.63	80±0.31
4	76±0.84	82±0.63	78±0.91	80±0.31	74±0.82
8	74±0.82	80±0.31	76±0.66	78±0.91	71±0.78
12	71±0.78	79±0.67	73±0.82	78±0.91	70±0.81
16	70±0.81	75±0.51	70±0.81	72±0.78	69±0.56

During storage of Soup from 0 to 16 days there was decrease in sensory score for overall acceptability was found on day of storage. There was significant decrease in sensory score for flavour; taste and overall acceptability were reported by the panel members. There was no significant evidence of microbial spoilage. It could be concluded from the table that prepared soup based can be stored for 16 days at refrigerated temperature (4°C) without affecting sensorial parameters. However its acceptability score was slightly decreased and liked moderately. The Soup are the food that can be Served by all the age groups. Since the health concern among the people has increased, manufacturers are looking cereals based food which balance the health with diet.

### DISCUSSION

The Apple mixed Vegetable soup is the food that can be consumed by all the age groups. Since the health concern among the people has increased, manufacturers are looking

combined fruit and vegetable based food which balance the health with diet. In the Soup preparation we use Apple and vegetables Like Carrot, capsicum which has higher nutritive value and because of their properties. The Soup is prepared with the combination of Apple, carrot, Capsicum in same ratio. The ratio is taken on the basis of some digestible and nutritive properties and also beneficial for the soup's taste and Flavour. For the preparation of Soup four trials taken in which first trial the product is form oily and less sweet and on the basis of sensory evaluation we rejected it and in the second trial we reduce the corn quantity and increase some quantity of apple and result but Flavour lost. And in third trials result in bitter taste which is not acceptable. Then we take fourth trial and take the same as first trial but increasing corn powder quantity and changing spicy contents quantity which result in good texture, taste, flavour, colour, etc. And all attribute accepted by the sensory evaluation panel members. Therefore it was finalized that fourth trial as a standardized product with good taste and nutritional property. Apple mixed vegetable soup are type and similar to other highly nutritive and spicy vegetable soups which is mostly like to the peoples. Hence the Soup sample prepared by supplementation with malted apple fruit will be beneficial to growing children's, teenagers, women and health conscious peoples.

## CONCLUSION

The formulation and standardization of recipe of Apple Mixed Vegetable Soup was carried out successfully. In this study, it was observed that the Prepared Soup are high in protein, vitamin A, Crude fibre, iron, Sodium and carbohydrate but low in fat, Vitamin C. These prepared soups may enhance the nutritional status of individuals. Prepared soups supplemented to growing children's, teenagers, pregnant women, patients and adult persons. storage study done at ambient temperature and refrigeration condition the product stored up to 4 days without any variation at ambient temperature with adding preservative and in refrigeration condition 16 days remains without any variation.

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