

# Standardisation and development of antioxidant rich food: Product using broccoli and mushroom

Mamta Jaiswal and Neelam Yadav

The objective of present investigation on standardisation and development of antioxidant rich food: Product using broccoli and mushroom was to standardize and develop the products using broccoli and mushroom and their organoleptic evaluation. Antioxidant are naturally occurring substances that combat oxidative damage in biological entities. An antioxidant achieves this by slowing or preventing the oxidation process that can damage cells in the body. This it does by getting oxidized itself in place of the cells. Thus, an antioxidant can also be termed as a reducing agent. Antioxidant are considered as important in the fight against the damage that can be done by free radicals produced due to oxidative stress. Although the human body has its own defense against oxidative stress, these become weak with age or in the case of an illness. Developed products of broccoli and mushroom were broccoli mushroom soup and broccoli and mushroom curry. The organoleptic evaluation of products was done by using (9-Point Hedonic Scale). The result of broccoli and mushroom based products for broccoli mushroom soup, broccoli and mushroom curry ( $T_1$ ) were best in all treatments in case of all sensory attributes. The overall acceptability of experimental ( $T_1$ ) broccoli mushroom soup and broccoli and mushroom curry were 8 and 8.2, respectively. Developed products were accepted by panel members.

**Key Words :** Antioxidant, Organoleptic evaluations, Developed, Treatments

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## INTRODUCTION

Although, antioxidants are sold in various forms as dietary supplements there is no clinching clinical evidence in favour of antioxidants as beneficial in maintaining health and preventing disease. However, there is a lot of anecdotal evidence that those who partake of antioxidant-rich food are better protected against problems such as

heart disease, macular degeneration, diabetes and cancer. Antioxidants are either hydrophilic or hydrophobic. Water soluble or hydrophilic antioxidants are active in the blood plasma while the water insoluble antioxidants protect the cell membranes. Antioxidants work by bringing under control the rogue and unstable oxygen molecules that have an odd number of electrons. These oxygen molecules known as free radicals are highly reactive; they attack cells, DNA and protein thereby accelerating the aging process. The antioxidants work in harmony and the efficacy of one antioxidant depends upon the availability and concentration of another. Essentially, antioxidants work by donating an electron. This stabilizes the free radical and converts it into a harmless compound that may safely be removed from the body.

### MEMBERS OF RESEARCH FORUM

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**Objective:**

- To develop the products using different antioxidant rich fruits and vegetables.
- Organoleptic evaluation of the developed products.

**METHODOLOGY**

The present investigation on standardisation and development of antioxidant rich food: Product using broccoli and mushroom was carried out to standardize broccoli and mushroom and its products. The study was conducted in Department of Food and Nutrition, Faculty of Home Science, KNIPSS Sultanpur.

Justified, judicious and scientific methodological consideration is indispensable for any investigation to deduce meaningful interferences concerning the objectives of the study. The study design reflects to the logical manner in which units of the study are assessed and analyzed for the purpose of drawing generalizations. Thus, with the view of available resources, the best procedures for taking correct observation should be first sorted out in a logical manner so that unbiased interference can be drawn. This chapter delineates information pertaining to the research design and methodological steps used for investigation. The research procedure has been distinctly described as under in the following heads:

- Procurement of material.
- Processing of raw material.
- Development of broccoli and mushroom based products.
- Sensory evaluation.
- Statistical analysis.

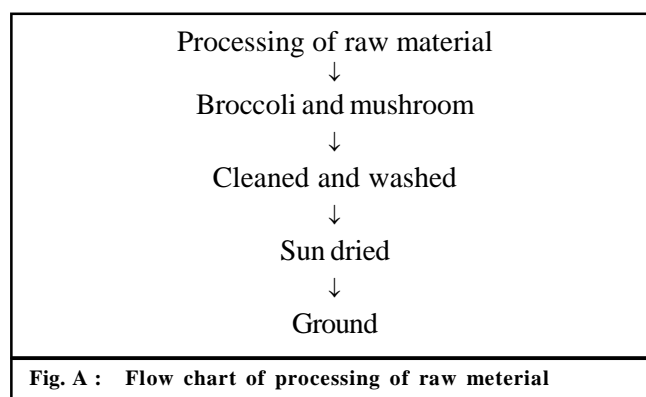
**Procurement of material:**

For the present investigation material *i.e.* broccoli and mushroom was produced from the local market of

sultanpur city. The procuring was done in single a lot to avoid variation compositional differences so that the quality differences should be ruled out.

**Processing of raw material:****Method:**

Place a wide non-stick cooking pan over medium heat, Add the butter. add onion and let it turn translucent. Add the broccoli, mushroom and let it cook for few minutes. Pour the chicken stock over the veggies and cook for 10 minutes. After the veggies have cooked well, puree the mixture in a blender. Transfer the pureed veggies back to the pan and place it over low heat. Add the dried basil leaves and ground pepper to it, give it a stir. Heat a defferent pan over medium heat. Add the butter, when it melts add the all purpose flour and keep stirring it, avoid burning the flour. Add milk to it, combine it and break any lumps present using a wooden spoon. Pour the milk combined with all purpose flour and butter over the pureed veggies, combine well. Let the soup come to a slight boil and remove from the stovee. Pour the soup into a soup bowl and have it along with pita bread or sprinkle with croutons.



Ingredients	Amount	
	Controlled (T <sub>0</sub> )	Experimental (T <sub>1</sub> )
Butter	1 tbsp	1 tbsp
Onion chopped	Chopped-1	Chopped-1
Broccoli florets	1/2 of the broccoli	1/2 of the broccoli
Button mushroom, chopped	Chopped-1 box	Chopped-1 box
Chicken stock	2 cups	2 cups
Basil, dried leaves	1 tsp	1 tsp
Ground pepper	1/2 tsp	1/2 tsp

For thickening the soup : Butter-1 tbsp, All purpose flour-3 tbsp, Milk or heavy cream-1/2 cup

Ingredients	Amount	
	Controlled (T <sub>0</sub> )	Experimental (T <sub>1</sub> )
Broccoli	2 1/2 cups	
Onions	3/4 cup	
Oil	2 tbsp	
Curry leaves	1 tbsp	1 tbsp
Chili slit	1 green	1 green
Cumin/jeera	1/4 tsp	1/4 tsp
Mustard	1 pinch	1 pinch
Ginger garlic paste	1 tsp	1 tsp
Red chili powder	1/3 tsp	1/3 tsp
Garam masala or kitchen king masala	1 3/4 tsp	1 3/4 tsp
Almonds	10	10
Salt to taste	salt to taste	salt to taste

### Method:

Heat oil in a pan, add cumin and mustard, when they begin to crackle add, curry leaves and saute for a min. Add onions and fry till they turn translucent. Add ginger garlic paste and fry for a min or two. Add broccoli, sprinkle salt and fry till for 2 mins. Add red chili powder, garam masala. mix well and cover and cook for 2 to 3 mins. Mean while make a paste of the almonds or coconut with very little water. Pour almond paste or coconut paste to the broccoli. stir fry for another 2 to 3 mins or till it becomes fragrant. make sure it is cooked by then. serve broccoli sabzi roti or rice.

## OBSERVATIONS AND ASSESSMENT

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

### Organoleptic evaluation of broccoli and mushroom based product:

- Flavour and taste
- Body and texture
- Colour and appearance
- Over all acceptability.

Table 1 and Fig. 1a and b shows that the experimental (T<sub>1</sub>) obtained maximum 7.7, 7.8, 8, and 8 for flavour and taste, body and texture, colour and appearance and overall acceptability; while control (T<sub>0</sub>) 7.7, 8.2, 7.3 and 8.3 for flavour and taste, body and texture, colour and appearance and overall acceptability, respectively. This indicated that the experiment (T<sub>1</sub>) broccoli and mushroom soup was found to be fallen under category of “Liked very much to liked extremely”.

Table 2 and Fig. 1a and b shows that the experimental (T<sub>1</sub>) obtained maximum 8, 8.3, 8.4 and 8.2 for flavour and taste, body and texture, colour and appearance and overall acceptability; while control (T<sub>0</sub>) 7.1, 7.3, 7.6 and 7.4 for flavour and taste, body and texture,

Product	Flavour and taste	Body and texture	Colour and appearance	Overall acceptability
T <sub>0</sub> (Controlled)	7.7	8.2	7.3	8.3
T <sub>1</sub> (Experimental)	7.7	7.8	8	8

Product	Flavour and taste	Body and texture	Colour and appearance	Overall acceptability
T <sub>0</sub> (Controlled)	7.1	7.3	7.6	7.4
T <sub>1</sub> (Experimental)	8	8.3	8.4	8.2

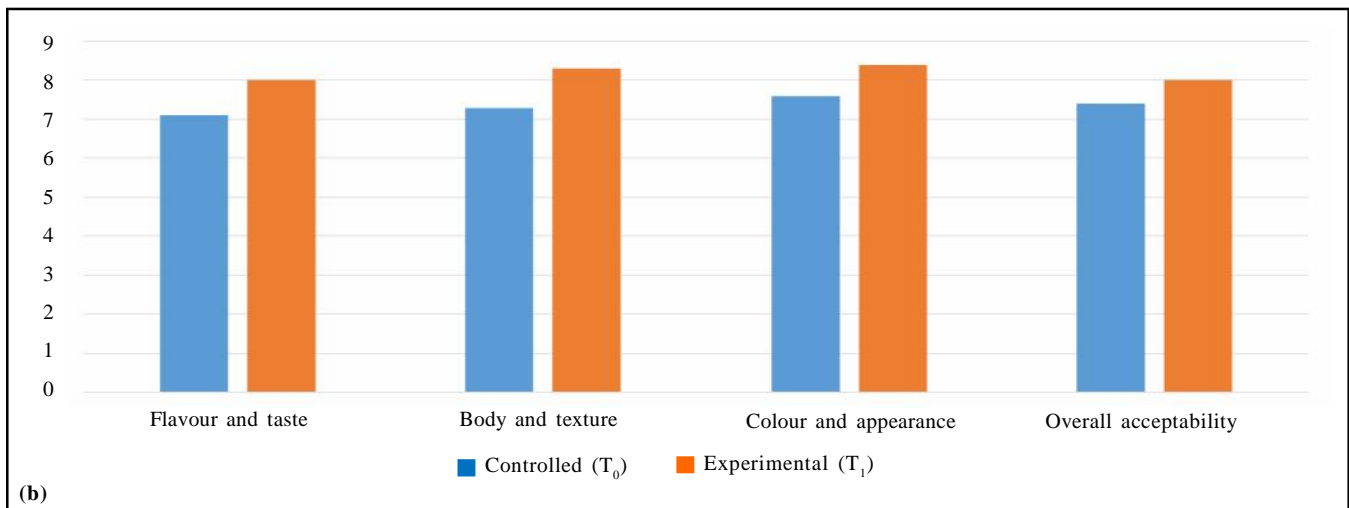
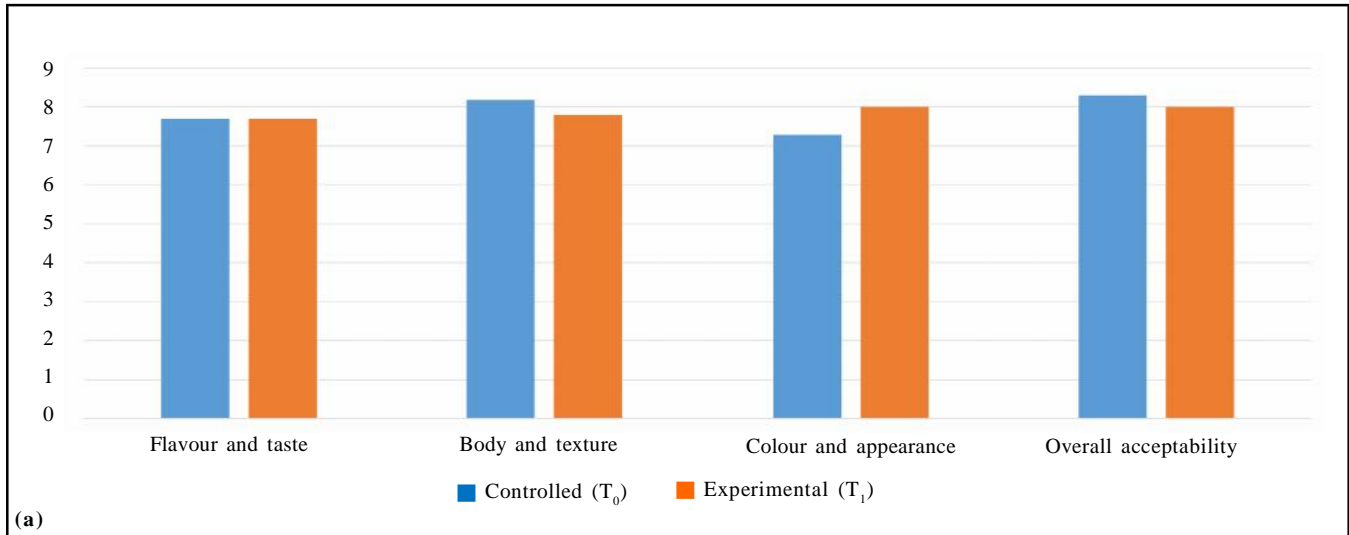


Fig. 1a and b: Organoleptic evaluation of broccoli and mushroom based product

colour and appearance and overall acceptability, respectively. This indicated the experimental (T<sub>1</sub>) broccoli and mushroom curry was found to be fallen under category of “Liked very much to liked extremely”.

#### WEBLIOGRAPHY

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