

**Title of the research project: Studies on quality of thermally processed Oyster Mushroom during storage (15.5.3.5)**

**Name of the department:** Dept. of Post Harvest Technology, ACH, NAU, Navsari.

**Investigators:**

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**Background and justification:**

Mushrooms are the fleshy, spore-bearing fruiting body of a fungus. The economic importance of mushroom lies primarily in their use as food for human consumption. The exotic flavor, taste and fleshiness of mushroom have made it an important delicacy in human diet. Mushroom is considered to be a complete, healthy food and suitable for all age groups. Mushrooms are nutritionally rich contain proteins, dietary fiber, vitamins, minerals, etc.

Oyster mushroom (*Pleurotus ostreatus*) is the popular mushroom variety grown Gujarat now a days. This particular mushroom is highly perishable in nature and has limited shelf life. Hence, it requires protection from spoilage during their preparation, storage and distribution. Canning is one of the oldest methods of preserving food in which the food contents are processed and sealed in an airtight container. It is reported to extent the shelf life of the product for several months. Retorting is a method in which food is filled into a container or pouch, sealed and then heated to extremely high temperature for specific time to make the product commercially sterile. At present processed Oyster mushroom are not available in the market. So, proposed study is going to be undertaken with the following objectives:

**Objectives:**

1. To find out the suitable packaging material and retorting condition for extending shelf life of packaged Oyster Mushroom
2. To evaluate the quality parameters of processed Oyster mushroom during storage

**Name of Research Scheme and B. H.:** Centre of Excellence on PHT (B. H. 12935)

**Year of Commencement:** 2020

**Technical programme:**

**Crop and Variety:** Oyster mushroom - *Pleurotus ostreatus*

**Experimental Details:**

**FCRD:** Completely Randomized Design with Factorial concept

**Repetitions:** 3

**Treatments:** 6

**Factor 1:** Packaging material (P) levels = 2

1. Glass bottle (500 g) (P<sub>1</sub>)
2. Tin Can-A2.5 (850 g) (P<sub>2</sub>)

**Factor 2:** Retorting time (R) levels = 3

1. 25 min (R<sub>1</sub>)
2. 35 min (R<sub>2</sub>)
3. 45 min (R<sub>3</sub>)

**Treatment Combinations:**

P <sub>1</sub> R <sub>1</sub>	P <sub>2</sub> R <sub>1</sub>
P <sub>1</sub> R <sub>2</sub>	P <sub>2</sub> R <sub>2</sub>
P <sub>1</sub> R <sub>3</sub>	P <sub>2</sub> R <sub>3</sub>

18 bottles/tins ( 9 glass bottles + 9 tin cans) used per repetition per treatment

**Sample size:** 200 g of oyster mushroom filled in glass bottle and 400 g of oyster mushroom will be filled in A2.5 can

**Storage period:** 0, 3 and 6 months

**Observations to be recorded:**

<u>Physico-chemical parameters</u>	<u>Sensory parameters</u>	<u>Microbiological parameters:</u>
Total Soluble Solids (%)	Color	Total plate count
Acidity (%)	Taste	Coliform count
Protein (mg/100g)	Flavor	Yeast and Mould count
Reducing sugar (%)	Texture	
Total sugars (%)	Overall acceptability	
Ascorbic acid (mg/100g)		

**Process Flow Chart:**

