



Fruits & Vegetables Trials

L-44 F Food Shelf Life Enhancer

Presentation by



INTRODUCTION

- ❖ Spoilage of fruits and vegetables is typically caused by factors like microbial growth, enzymatic degradation, and physical decay such as bruising and moisture loss.
- ❖ Environmental conditions such as temperature, humidity, storage conditions and exposure to light significantly impact the rate of spoilage.
- ❖ Miracle Everyday L-44 F is a unique formulation extracted from botanical extracts to enhance the shelf-life of raw produce naturally.
- ❖ These bioflavonoids play a critical role in enhancing the longevity of fruits and vegetables by inhibiting microbial growth and slowing down the oxidation process that leads to spoilage.

PROCEDURE

Preparation

Some Fruits and vegetables were initially prepared by washing, peeling, and chopping and some were kept as whole as required to standardize sample sizes and surface areas.

Treatment

The prepared samples were immersed or sprayed in a specified concentration of the solution for a duration as detailed in the accompanying table.

Drying

Following immersion, the samples were removed from the solution, allowed to air dry, and subsequently stored in pre-sterilized punnets at room temperature and cold temp. (approx. 35°C and 2-8° C).

Observation

Daily sensory evaluations were conducted to monitor changes in the appearance of the samples throughout the observation period until spoilage.

APPLICATION RATE

	Storage Temp. Room Temperature (33-36°C)			
Sr. No.	Vegetables/ Fruits	Concentration (per litre)	Method of use	Contact time
1	Coriander	5 ml	Dipping	15 mins
2	Garlic cloves – Peeled	5 ml	Dipping	10 mins
3	Cauliflower florets	2 ml	Spray	-
4	Coconut chunks	2 ml	Dipping	10 mins
5	Pumpkin chunks	2 ml	Dipping	15 min

APPLICATION RATE

Storage Temperature: Cold Temperature(2-8°C)				
Sr. No.	Vegetables/ Fruits	Concentration (per litre)	Method of use	Contact time
1	Lady Finger- A)Whole B)Cut	5 ml	Spray	-
2	Pineapple- A)Cut Slice B)Cut Slice	3 ml 3 ml	Spray Dipping	- 10 min
3	Raw Mango Chunks	5 ml	Dipping	10 min
4	Pomegranate arils	2 ml	Dipping	10 min
5	Lemon	5 ml	Dipping	10 min

Room Temperature

Coriander



Day 1



Day 4

Untreated sample dried whereas treated sample looked fresh.

Room Temperature

Peeled Garlic Cloves:



Day 1



Day 4

Fungal growth clearly visible in untreated sample, whereas treated were good in condition.

Room Temperature

Cauliflower



Day 1



Day 3

Untreated - good but fungal growth seen in some florets

Treated - good, no fungal growth started

Room Temperature

Coconut Chunks



Day 1



Day 2

Untreated - Smell change, yellowing and fungal growth observed

Treated - In good condition

Room Temperature

Pumpkin



Day 1



Day 3

Untreated- Spoiled, Off smell and fungal growth

Treated- In good and consumable condition

Cold Temperature

Whole Ladyfinger



Day 1



Day 16

Untreated sample shows signs of spoilage and browning.

Treated : In good condition

Cold Temperature

Cut Ladyfinger



Day 1



Day 17

Untreated ladyfinger has started browning and change in texture.

Treated ladyfinger is in good condition

Cold Temperature

Sliced Pineapple (Dip)



Day 1



Day 10

Untreated : Spoiled with off smell and colour change

Treated looks good even after 12 days.

Cold Temperature

Sliced Pineapple (Spray)



Day 1



Day 10

Discoloration & drying observed in untreated sample.

Treated pineapple looks and smells good.

Cold Temperature

Mango Chunks



Day 1



Day 15

Untreated raw mango started spoiling and colour change.

Treated looked much better even after 13 days.

Cold Temperature

Pomegranate



Day 1



Day 19

Untreated sample has fungal growth and complete brown seeds.

Treated sample is in good and consumable condition

Cold Temperature

Lemon



Day 1



Day 19

Untreated lemons started browning.
Treated lemons is in good condition

CONCLUSION

- ❖ L-44-F has visibly extended the shelf life by enhancing the stability of fruits and vegetables.
- ❖ Using L-44-F solution can result in reducing the need for other preservatives and minimizing waste.
- ❖ It functions as an antioxidant, inhibiting the oxidation processes that lead to browning/yellowing causing spoilage.
- ❖ Additionally, L-44-F serves as an antimicrobial agent, further aiding in the preservation of fruits and vegetables.

Thank You

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