ADAPTIVE DEHYDRATOR

BY- HEATWAVE MECHANIX

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PROBLEM STATEMENT:

FOOD SPOILAGE DUE TO POOR STORAGE AND PROCESSING FACILITIES.

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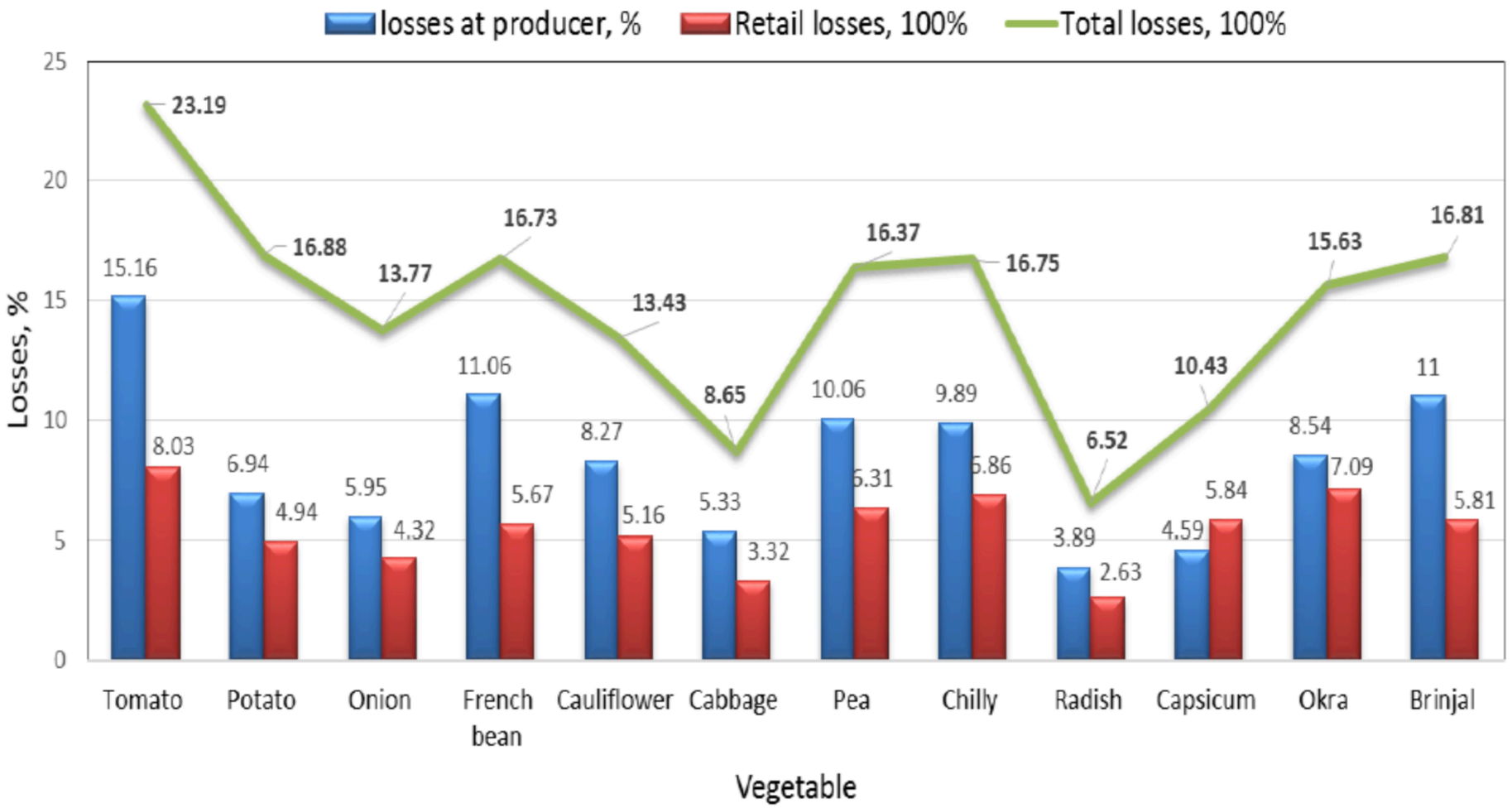

METHODS OF FOOD PRESERVATIONS:

CANNING

DRYING / DEHYDRATION

FREEZING

CANNING

1. Food spoilage is prevented
2. Longevity of food increases

1. Nutrients can be lost
2. Alteration of taste
3. Too many additives may be toxic

FREEZING

1. Natural food colour, nutrients and flavour is retained.
2. Very low temperatures inhibit growth of micro-organisms and limit enzyme and chemical activity.

1. Initial investment and cost of maintaining freezer is high.
2. Storage space limited by capacity of freezer.

DRYING / DEHYDRATION

1. Extended Shelf Life
2. Cost-Effective
3. Reduced Waste

1. Nutrient Loss
2. Texture Changes

TYPES

Solar Dryer

Electronic Dryer

CONVENTIONAL SOLUTION

ELECTRIC DRYER/DEHYDRATOR (5K)

SOLAR DRYER/DEHYDRATOR (1.5 LAKH)

PROPOSED SOLUTION:

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Existing Solution	Proposed Solution
No hybrid solution available in market.	Combination of utilization of sun enegry and electric enegry.
Cost of end product is high.	Cost is comparatively low*
No realtime data monitoring and control available.	Possible via dedicated app and wifi enabled.

INDIVIDUAL'S ROLE :

- Shivam Rana- Heat Flow mechanism
- Kedar Kale- Heat Flow Mechanism and design of equipment
- Harshil Sheth- In overall design of equipment
- Jainil Zinzuwadia- Interfacing Software and Hardware

HARDWARE PARTS:


HEATWAVE MECHANICX
MECIA'24 TEAM