

01. **Experiment number and title (As per CJA)** : **21.5.3.42**  
Development and storage study of mixed variety mango RTS.
02. **Budget Head** : 12940
03. **Collaborative department, if any** : PHTC, NAU, Navsari
04. **Background information:**  
Mango fruit is an excellent source of Vitamin-A. Both mango and mango products are popular in India and are also in demand in many foreign countries. Amrapali is known for its bright saffron colour, Totapuri is known for its specific gritty texture, Rajapuri and Deshi mango are good in sourness due to its acidity at unripe stage. The Kesar has its specific characteristics of flavor and mainly use for fruits products development. By blending these specific characteristics, a standard RTS may be prepared without addition of artificial color and flavor. It will not only increase the usefulness of these mango but also gear up to RTS sector. An experiment is planned to prepared mixed variety mango RTS with following objective.
05. **Objectives:**
1. Development of mixed variety mango RTS.
  2. Evaluation of quality parameters and storage stability of mixed variety mango RTS.
  3. Cost-economic analysis of the developed technology.
06. **Principal investigator and associates** : PI- Er. P. S. Pandit  
Co PI- Dr. A. K. Senapati, Dr. F. M. Sahu, Dr. T. Vyas.
07. **Location and Agro-climatic sub-region** : PHTC, NAU, Navsari., FQTL, NAU, Navsari
08. **Year and Season** : Year of commencement: 2025  
Year of completion: 2027
09. **Crop and Variety Product** : Mango: Amrapali, Kesar, Totapuri, Rajapuri, Deshi. RTS.

10. **Experimental details** :

(a) **Treatments for performance:**

Factor-1:Mango Variety:

V<sub>1</sub>=Amrapali; V<sub>2</sub>=Kesar; V<sub>3</sub>=Totapuri; V<sub>4</sub>=Rajapuri, V<sub>5</sub>=Desi

Factor-2: Mango pulp blending ratio:

B<sub>1</sub>= 1 portion, B<sub>2</sub>=2 portion B<sub>3</sub>=3 portion.

Best blend combinations will be carry forward in storage study.

**Storage Study:**

Packing Material

P<sub>1</sub>: PET bottle, P<sub>2</sub>: Glass Container.

(b) Experimental Design : CRD (D-potinal / Point exchange) and t-test (Storage)

(c) Replications/Repetitions : 3, 15

(d) Sample Size : 5000g fruits / treatment / replication

**Treatment Combination** : As per RSM

Treatment No.	Mango Variety	Portion for Blend	Rest of Variety Portion
1	V3	B1	B1
2	V1	B2	B1
3	V4	B1	B1
4	V5	B3	B1
5	V4	B2	B1
6	V5	B1	B1
7	V2	B1	B1
8	V4	B1	B1
9	V3	B3	B1
10	V5	B1	B1
11	V2	B2	B1
12	V1	B3	B1
13	V2	B2	B1
14	V2	B3	B1
15	V2	B3	B1
16	V2	B1	B1
17	V3	B3	B1
18	V3	B1	B1
19	V1	B1	B1
20	V4	B3	B1
21	V3	B2	B1
22	V5	B2	B1
23	V1	B1	B1

11. **Observations To Be Recorded:**

Physico-chemical, Color, Organoleptic Parameters, microbial analysis, etc.

12. **Methodology (if necessary):**

Different mango varieties will be procured from the NAU farm as well as nearby farmers. After full ripening, the pulp will be extracted from the fruits. The fruit will be blanded as per treatment combination, the blended RTS will be prepared without flavor and colour. If need sugar will be substituted to improve the taste. The prepared RST will be sterilized. The organoleptic evaluation will be carried out with prepared chilled RTS. The best RTS blend will be evaluated in storage study by maintaining degree of freedom of error of experiment.

### 13. Experiment Flow Chart :

