Department of Biochemistry

Research:

- It is conducting important research for nutraceutical quality of cereals, pulses, oilseeds, vegetable, fruit and medicinal plants.
- Biochemical and molecular characterization of cereals, pulses, oil seeds, vegetables and fruits in response to biotic and abiotic stress.
- Effect of various chemicals on nutraceutical quality trait on different crop plants.
- Transcriptome analysis of biotic and abiotic stress conditions in different crop plants.
- Validation of disease resistance genes and confirmation to related biochemical pathways.
- Characterization of soybean (*Glycine max* L.) genotypes through biochemical and SSR markers for nutritional quality.
- Effect of limited irrigation on quality of durum wheat (*Triticum durum* spp).
- Low temperature of potato storage greatly influenced vitamin C content as well as the phenolic content.
- SSR markers provide useful information to discriminate potato varieties and offer valuable insights to explore the genetic diversity linked to carbohydrate metabolism in potato.
- Genetic transformation of Nucleotide Binding Site-Leucine Rich Repeat (NBS-LRR) of Mi gene for developing resistance against Meloidogyne *incognita* in tomato (*Solanum lycopersicum* L.).
- Differential gene expression study during root knot nematode *(Meloidogyne incognita)* infection in tomato *(Solanum lycopersicum* L.*).*
- Response to silicic acid against root knot nematode and yvmv disease in okra (A*belmoschus esculentus* L. moench)"**.**
- Gene expression study for Phytate during wheat seed development
- "Nutraceutical and molecular characterization of pumpkin (C*ucurbita moschata* duch. ex. poir)"
- Seed kernel biochemical characterization and SSR based diversity analysis of different mango (M*angitera indica* L.)varities.
- Influence of drought on gum quality of galactomannam in clusterbean (C*yamopsis tetra geno* tube).
- Differential gene expression in response of melatonin in bottle gourd (L*agenaria siceraria* (mol.) standl.).
- Sprouting of chickpea and mung bean enhance the nutraceutical value which may useful to enhance the imunity.
- Pre-soaking melatonin treatment ameliorating effect against abiotic stress in vegetable crops.
- Evaluation of antioxidants and differential gene expression in response of silicon in Rice against drought.
- Biochemical and molecular characterization of finger millet, cumin and potato.
- Morpho-physiological and nutraceutical characterization of Jivanti (*Leptadenia Reticulata* (Retz.) at different harvest time.
- Mapping QTLs for TLCV (Tomato leaf curl virus) resistance in tomato.
- Comparative study of melatonin and nematicide against root knot nematode in tomato.
- Influence of biostimulants on nutraceutical potential of brinjal (*Solanum melongena* L.)
- Seed priming (300 ppm) of ascorbic acid improve growth characters in10 days old tomato seedlings under saline stress.

Externally Funded Project

Sr. No	Project Title	Total Fund	Funding Agency	PI

1	Biochemical and Molecular Characterization of T. durum cultivars for its product processing quality	Rs. 19,72,788/-	Gujarat State Biotechnology Mission, Gandhinagar	**Dr. J.G. Talati**
2	Nutraceutical importance and molecular characterization of okra	Rs. 12,51,420/-	Gujarat State Biotechnology Mission, Gandhinagar	**Dr. J.J. Dhruv**

Ongoing Research Projects in the Department:

Sr. No.	Title of the Project	Name of PI	Name of Co-PI	Category of project
1.	Government of Gujarat scheme: Establishment of a Central Instrument Centre with heavy duty generator set	Dr. J.J. Dhruv	-	Plan
2.	Genetic enhancement and production technologies of cluster bean for (guar) yield and quality	Dr. M. G. Machhar	-	Plan
3	Study on efficacy of Nano input products on growth, yield and nutrients contents in Maize and Pearl millet	Dr. Vimal Patel	Dr. J. J. Dhruv	Other Agency