ON-GOING RESEARCH ACTIVITIES IN BIOTECHNOLOGY & MOLECULAR BIOLOGY

At present, the Department has one state non-plan scheme, one state plan scheme and four projects from outside agencies including DBT, DST, DRDE and MFPI. Briefly, the research is being pursued on the following aspects:

1. Micropropagation of important crop plants, cash crops, ornamentals, forest & horticultural trees, medicinal & aromatic plants.

2. Development of transgenics in rice, *Brassica* and chickpea for resistance against insect/ pests and abiotic stresses (salinity and drought).

3. Development of improved cotton genotypes for insect pest resistance through biotechnology.

4. Development of regeneration/ transformation protocols in tomato and cauliflower

5. Interspecific hybridization in *Brassica* and Guar through embryo rescue.

6. Cloning and characterization of *Myb* genes involved in abiotic stress tolerance.

7. DNA fingerprinting of important crops of Haryana.

8. DNA fingerprinting of important horticultural and forest trees.

9. Molecular mapping and tagging of stress tolerant genes /QTLs in rice

10. Development of transgenics with improved nutritional quality in rice.

11. Molecular mapping and tagging of genes for resistance against yellow mosaic virus in mothbean and cowpea, *Fusarium* wilt and *Ascochyta* blight in chickpea

12. Molecular characterization in moth bean for nutritional quality.

13. Cloning and characterization of sex-linked markers in dioecious plants-datepalm and jojoba.

14. Biodiversity conservation of endangered ber germplasm in Haryana using biotechnological tools.

15. Metabolic engineering for higher starch biosynthesis in wheat.

16. Manipulation of pectinolytic activity of rhizobia for improved symbiotic infection ability and plant growth promotion.

17. Molecular manipulation of *Rhizobium spp.* for improved PHB production from agri-byproducts.

18. Assessment of genetic diversity & augmenting the mineral density in rice.

19. Molecular breeding of rice with aerobic traits.