

MOHANLAL SUKHADIA UNIVERSITY, UDAIPUR

B. Sc. BIOTECHNOLOGY III YEAR TDC (2016-17)

B. Sc. IIIrd Year Practicals

Practical – III

Plant Biotechnology and its commercial application

1. Induction of adventitious shoots from appropriate explant (e.g. hypocotyl segments, leaf discs, internodes)
2. Induction of axillary shoots from appropriate explant (e.g. nodal segments)
3. Induction of somatic embryogenesis in carrot and study of various stages.
4. Induction of callus from the appropriate explants
5. *In vitro* organogenesis from callus cultures.
6. Rooting of *in vitro* shoots by different methods:
 - (a) *In vitro* rooting
 - (b) *Ex vitro* rooting
7. Hardening and acclimatization procedures for *in vitro* produced plantlets.
8. Study of growth of tissue culture plants under CO₂ enriched environment.
9. Meristem tip culture for elimination of virus from infected plants (Material- Bougainvillea)
10. Culture of anthers for production of androgenic haploids (Material- *Datura*)
11. Extraction of fats from the given sample using Soxhlet's method.
12. Use of Thin Layer Chromatography for separation of alkaloids (e.g. *Catharanthus*, *Orchrosia*).
13. Use of Thin Layer Chromatography for separation of food coloring agents and additive (e.g. Turmeric).
14. Alkaloid extraction using soxhlet apparatus.
15. Immobilization of plant cells by alginate gel entrapment.
16. Study of various types of bioreactors (demonstration only)