BT 611 MOLECULAR MARKER ASSISTED BREEDING IN PLANTS (3 0 0 6)

Pre-requisites: Nil

Plant genome organization; DNA based markers (restriction fragment length polymorphism; oligonucleotide-fingerprinting); polymerase chain reaction based markers (random amplified polymorphic DNA, amplified fragment length polymorphism, cleaved amplified polymorphic sequences, expressed sequence tags, sequence characterized amplification polymorphism, sequence tagged sties, inter-simple sequence repeats, selective amplification of microsatellite polymorphic loci, sequence specific amplified polymorphism); application of molecular markers in plants for assessment of genetic diversity, taxonomic relationship, evolutionary and phylogenetic studies, cultivar identification, linkage maps and gene tagging for agronomically important traits.

Texts:

- 1. G. Caetano-Annolles and P. M. Gresshoff, *DNA Markers: Protocols, application and overviews*, John Wiley & Sons, Inc., New York, 1997.
- 2. R. J. Henry, *Plant Genotyping: The DNA fingerprinting of plants*, Oxford University Press, CABI, 2001.
- 3. D. Vienne De and V. Dominique. *Molecular Markers in Plant Genetics and Biotechnology*, Science Publishers Inc, 2003.

References:

- 1. T. Helentjaris and B. Burr, *Development and Application of Molecular Markers to Problems in Plant Genetics* (Current Communications in Molecular Biology), Cold Spring Harbor Laboratory Press, 1989.
- 2. J. C. Avise, *Molecular Markers, Natural History, and Evolution,* Sinauer Associates, 2nd Ed, 2004.
- 3. J. M. Butler, *Forensic DNA Typing: Biology and Technology Behind STR Marker,* Academic Press, 1st Ed, 2001.
- 4. D. B. Goldstein and C. Schlotterer, *Microsatellites: Evolution and Applications,* Oxford University Press, 1999.