

## Types of DNA markers

### RFLPs:

- 1) RFLP (Restriction Fragment Length Polymorphism) is the most widely used hybridization-based molecular marker.
- 2) The majority of RFLP markers are co-dominant and highly locus specific.
- 3) It is useful in developing other markers such as CAPS and INDEL.
- 4) Several samples can be screened simultaneously by this technique using different probes.
- 5) They can be used in determining paternity cases.
- 6) They can be used to determine the disease status of an individual.
- 7) They are useful in gene mapping, germplasm characterization and marker assisted selection.
- 8) They are useful in detection of pathogen in plants even if it is in latent stage.

### RAPDs:

- 1) Random Amplified Polymorphic DNA (RAPDs) refers to polymorphism found within a species in the randomly amplified DNA generated by restriction endonuclease enzyme.
- 2) RAPDs are PCR-based DNA markers.
- 3) RAPD marker assays are performed using single DNA primer of arbitrary sequence.
- 4) RAPDs are co-dominantly inherited and highly reproducible.
- 5) This technique can be used in various ways such as for varietal identification, DNA fingerprinting, gene tagging and construction of linkage maps.
- 6) It can also be used to study phylogenetic relationship among species and sub-species and assessment of variability in breeding populations.

### SNPs:

- 1) SNP markers are highly polymorphic and mostly biallelic.
- 2) The genotyping throughput is very high.
- 3) SNP markers are locus specific.
- 4) Such variation results due to substitution, deletion or insertion.
- 5) SNP markers are excellent long term investment.
- 6) SNP markers can be used to pinpoint functional polymorphism.
- 7) This technique requires small amount of DNA.

### AFLPs:

- 1) AFLPs are differences in restriction fragment lengths caused by SNPs or INDELS that create or abolish restriction endonuclease recognition sites.
- 2) AFLP assays are performed by selectively amplifying a pool of restriction fragments using PCR.
- 3) AFLP does not require any DNA information.