

## PROJECT PROFILE

- Project Title:** **Origin distribution and genetic diversity of *Jatropha curcas* in India.**
- Principle Investigator:** Dr. Rekha R. Warriar
- Project Associates:** Smt. R. Anandalakshmi  
Dr. B. Gurudev Singh  
Dr. A. Nicodemus
- Start and Completion dates :** 2006-2008
- Objectives:**
1. To study the diversity of *J. curcas* populations in India through isozymes and DNA based markers.
  2. To identify the genetic distinctiveness of the populations and arrive at unique populations
- Funding Agency:** Indian Council of Forestry Research and Education (ICFRE)

### Summary

- Fifteen enzyme systems have been evaluated for their efficacy in distinguishing the accessions. Three (formate dehydrogenase, malate dehydrogenase and peroxidase) were found to exhibit polymorphism; twelve did not exhibit any variation and had fixed monomorphic alleles.
- Each polymorphic enzyme system produced one well resolved polymorphic region except peroxidase which had three.
- DNA extraction procedures were standardized to avoid latex contamination.
- PCR protocols were optimized by carrying out variations in  $MgCl_2$  concentration, primer concentration, DNA and buffer volume.
- Twenty five RAPD primers were screened for polymorphism.
- On an average 26.67% were found to be polymorphic and mean observed number of alleles per locus (A) was 1.533.
- Average observed heterozygosity ( $H_o$ ) was 0.1082 and expected value ( $H_e$ ) was 0.0993 with and gene flow  $Nm = 0.2177$
- Low level of genetic variation among different accessions suggesting poor segregation of genes over generations.