RAPD ANALYSIS OF ACCESSIONS FROM
CASTANEA, CORYLUS, JUGLANS AND PRUNUS GENERA

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SUMMARY

Proper identification of Castanea, Corylus, Juglans and Prunus accessions is needed to ensure that the product is genetically pure to meet the expectations of growers and distributors and is also important in protecting the legal rights of breeders. The use of RAPD technique for molecular characterization of valuable genotypes represents a new approach in Romania. The 32 genotypes used in this study were obtained from the Castanea, Corylus, Juglans and Prunus collections maintained at S.C.D.P. Valcea.

The potential use of RAPD technique for characterization and assessment of genetic relationships was investigated in Castanea, Corylus, Juglans and Prunus genotypes. Thirty seven of the 54 decamer primers yielded scorable amplification patterns. These primers generated polymorphic bands among the genotypes studied. Some of the primers produced no amplification or unreadable gel smears.

The primers which generate the most polymorphic bands in Castanea genus were OPAB 11 and OPA 04, in Corylus – OPC 14, in Juglans – OPC 15 and in Prunus – OPB 11. These primers will be further used to assess the genetic relationships between 27 Castanea, 54 Corylus, 53 Juglans and 61 Prunus accessions.

The presence of the different patterns generated by RAPD primers shows variance between the accessions from the genetic point of view. This difference will be further analyzed using other types of molecular markers (Inter Simple Sequence Repeats-ISSR or Simple Sequence Repeats-SSR) in order to obtain a more precise molecular characterization of the studied genotypes.

The collected data will be useful in developing DNA fingerprinting techniques for routine use in the orchard, to distinguish the valuable genotypes used in selection

REFERENCES