Chromosomal localization of genes mediating tolerance to boron in pea (Pisum sativum L.) using molecular markers

Abstract

In the present study, chromosome localization of genes mediating tolerance to boron (B) in pea (Pisum sativum L.) was investigated using RFLP and RAPD markers. The tolerant and non-tolerant varieties were selected based on their reaction to B treatment. DNA was extracted from the young leaves of the selected varieties and subjected to digestion with BglII and KpnI restriction enzymes. DNA fragments were separated by agarose gel electrophoresis and transferred to nylon membranes by Southern blotting. The membranes were hybridized with probes derived from EST libraries. The results showed that the tolerant varieties had a higher number of hybridization signals compared to the non-tolerant varieties. The results indicated that the tolerant variety had a higher number of hybridization signals compared to the non-tolerant variety. This study provides new insights into the genetic basis of B tolerance in pea and could be used to develop breeding strategies for B-tolerant varieties.