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

Abstract

The study aimed to determine the chromosomal localization of genes mediating tolerance to boron in pea (Pisum sativum L.) using molecular markers. The researchers employed RFLP and RAPD markers to analyze the genetic traits associated with boron tolerance.

Keywords: Molecular markers, RFLP, RAPD, Boron tolerance, Pisum sativum L.

Introduction

Boron (B) is an essential micronutrient for plant growth and development. However, its excess can be toxic, especially in legumes like peas. Understanding the genetic basis of B tolerance is crucial for improving pea cultivars.

Materials and Methods

The study utilized RFLP and RAPD markers to analyze the genetic traits associated with boron tolerance in pea. The authors screened a large number of pea accessions for B tolerance and identified specific markers associated with this trait.

Results

The researchers identified several RFLP and RAPD markers that were strongly associated with B tolerance. These markers were localized on different chromosomes, indicating a polygenic control of B tolerance.

Discussion

The findings suggest that B tolerance in peas is controlled by multiple genes, each with a minor effect. This knowledge could be used to develop more tolerant pea cultivars through breeding programs.

Conclusion

The study provides valuable insights into the genetic basis of B tolerance in peas, which is essential for developing more sustainable agronomic practices.

Acknowledgments

The authors acknowledge the support of the National Research Foundation of Korea for funding this research.

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[Date of publication]

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