



METADATA

Title: Laboratory Guide to Plant Breeding

Other Titles: -

Language: Greek

Authors: Trantas, E., Assistant Professor, Hellenic Mediterranean University, Ververidis, F., Professor, Hellenic Mediterranean University, Paschalidis, K., Associate Professor, Hellenic Mediterranean University

ISBN: 978-618-228-093-5

Subject: NATURAL SCIENCES AND AGRICULTURAL SCIENCES

Keywords: Plant Breeding / Genetics / Crossing / Artificial pollination / Molecular markers

Bibliographic Reference: Trantas, E., Ververidis, F., & Paschalidis, K. (2024). Laboratory Guide to Plant Breeding [Laboratory Guide]. Kallipos, Open Academic Editions. <http://dx.doi.org/10.57713/kallipos-327>

Abstract

Plant Breeding is the art and science of modifying the genetic material of plants for the benefit of mankind. It is a necessary but quite complex and demanding field, as it is responsible for the development of many crops on which we rely for food and fiber production. This laboratory manual provides students with the opportunity to learn the basic principles and techniques of plant breeding, covering a wide range of topics related to genetics of plant breeding, flower structure, selection methods, tissue culture, crossing techniques, mutational breeding, male sterility, molecular markers, pedigree selection,

and seed production and certification. Ultimately, it will help them to understand the different methods of improvement, molecular marker-assisted improvement, its impact on food security and its role in a more sustainable agriculture. The proposed laboratory guide comes to fill the gap between the theoretical part of Plant Breeding and the laboratory part through well-designed exercises. The aim is for students to understand on the one hand the nature of the traits that crop species should have, and on the other hand the logic that should follow to create improved varieties that meet the societal needs.

