SUMMARY

of the doctoral thesis entitled:

CONSOLIDATION, ASSESSMENT, AND VALUATION OF THE AUBERGINE GERMPLASM COLLECTION AT S.C.D.L. BUZĂU

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This PhD thesis focuses on the detailed valuation of the aubergine germplasm collection, the selection and preservation of these genetic pools, and their exploitation through dedicated breeding and conservation programs. These activities are essential to provide the genetic resources needed to develop new varieties and hybrids of *Solanum melongena*.

The thesis is divided into two sections: the first part consists of four chapters as follows:

Chapter I characterizes the economic and food importance of aubergine, emphasizing directions of use, biochemical composition, food importance, and methods of conservation of genetic heritage.

Chapter II captures the current state of knowledge of the species in terms of etymology, taxonomy, origin and spread, and interspecific hybridization.

Chapter III covers research on eggplant breeding discussed from the point of view of breeding and breeding of new cultivars, biotechnology used in breeding, genetic engineering currently applied, breeding pathways, breeding of eggplant in Europe, and breeding of eggplant in Romania.

Chapter IV discusses the current situation of aubergine varieties and hybrids in Romania, emphasizing cultivars marketed in the domestic market.

The second part of this thesis consists of five chapters, organized as follows:

Chapter V discusses the biodiversity characterization of the germplasm collection, starting with its evaluation, detailing the site and location of the experiment, the establishment of the growing technology, the presentation of phenological observations, and the analysis of quantitative and qualitative characters.

Chapter VI focuses on the development of new varieties and the assessment of eggplant hybrid combinations. The development of new varieties involved breeding two new varieties, Romanița and Iarina, whose distinct phenotypic characteristics are studied and analyzed..

Chapter VII deals with the analysis of seed germination, viability, and vigor to optimize conservation methods. Thus, the germination, vigour, and viability of seeds of the approved varieties Romanița and Iarina were tested.

Chapter VIII presents the DNA extraction protocol and the initiation of the genome sequencing process of the eggplant variety Romanița, in which we find the procedures used and especially the results.

Chapter IX presents the general conclusions and recommendations of the scientific studies that have been the subject of research for this PhD thesis.