PREFACE AND DECLARATION

The potato is one of the world’s basic food crops, which can supplement the food needs of the people in a substantial manner. Due to low potential of the available potato cultivars, the average productivity of potato in India is very low in comparison to some of the western countries. Therefore, enhancement of tuber yield by improving the genetic yield potential of new cultivars through breeding is vital for increasing its production in the country. The breeding mainly depends on selection of superior parental lines for making crosses and selection of superior genotypes from the segregating progeny. Moreover, information on the breeding values of newly acquired germplasm and parental lines has been lacking both for plains and hills. In view of the above and to identify superior parents with high breeding values for exploitation in breeding programmes, the present investigation involving 17 parents both under short and long days was undertaken.

The experimental findings are supported with 63 tables and 15 photographs. The research was conducted under the joint supervision of Dr R.K. Birhman (Sr. Scientist, Division of Genetics and Plant breeding, Central Potato Research Institute, Shimla 171001) and Dr S. K. Sood (Associate Professor of Botany, Department of Biosciences, Himachal Pradesh University, Shimla 171005) at the Department of Biosciences; Central Potato Research Institute, Shimla and its three regional Stations located at Modipuram, Jalandhar and Kufri. It is in original, and has not been submitted, in part or full, for any other degree to this or any other University.

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