PREFACE

For the exquisite beauty of the flowers, brilliance of colour, unusual shapes, variation in form and growth habit, irises are considered as one of the most beautiful bulbous plants. The immense variety of colour and form of the flowers of irises have so much captivated garden lovers all over the world that their cultivation in ornamental gardens and green houses has become virtually a craze. The generic name corresponds to the Greek word 'Iris' designating the "Goddess of Rainbow".

The genus, belonging to the family Iridaceae, comprises nearly two hundred species of perennial herbaceous plants with bulbous or creeping rhizomatous roots and is a native of the north temperate zone. Of these, only twelve species are found in India.

The genus has been conveniently divided into eleven groups on the basis of the floral structure and the nature of roots. They are (i) Apogon, (ii) Evansiia, (iii) Pogoniris, (iv) Gnocycclus, (v) Pseudovansia, (vii) Bardanthopsis, all with rhizomatous rootstock, (viii) Nepalese with a rootstock consisting of a bud covered with bristly fibres and with thick persistent roots, (ix) Juno and (x) Xiphion, both with a bulbous rootstock, the Junos having thick roots while in Xiphions, the roots die off annually and the last one (xi) Gymandriris with rootstock like a corm, represented by a single species,
Iris sieyringiun. In Bogoniris, Pseudovansia, Regalia and Cncocyclus, the outer segments of the perianth (falls) are distinctly bearded with multicellular hairs. In Evansia, the beard is replaced by a crest on the falls, whereas Apogon and Pardanthopsis are characterised by a total lack of the beard or the crest.

The life of iris flowers varies from three to seven days. They are fragile, but if cut before the petals unroll they may be transported to a considerable distance without injury. This is the only way by which the florist can market them. Iris is cultivated mainly for its aesthetic value, but it has other uses too. Orris-roots (corruption of iris-root) is a product of Iris germanica and related species. The scented roots are used in the preparation of perfumary powders, dentrifies and for treating bad-breath. The "fingers" made from the rhizomes are used for teething babies in some countries.

A good number of species and varieties of Iris is now grown to perfection in the plains and hills of India and their production and marketing have been found to be a profitable enterprise. However, the cultivation of this important ornamental plant on commercial basis is not expanding to desirable extent. The main reasons for limited expansion and intensification of commercial production of Iris is non-availability of suitable varieties.
tolerant to various agroclimatic conditions, and lack of information regarding their cultivation under Indian condition. So far no work has been done in India on the improvement of the existing species and varieties of *Iris*. Information on the standard agro-techniques to be followed are also meagre.

Thus, keeping in mind the great importance of *Iris* in commercial floriculture, attempts were made in the following lines to evolve new varieties through hybridization, mutation and polyploidy and also to standardize the various agro-techniques so that a package of practices can be recommended to the growers:

I. Collection and assessment of germplasm of *Iris*.

II. Evolving new varieties through hybridization and induction of mutation and polyploidy.

III. Effect of rhizome size, spacing and depth of planting on growth, flowering and rhizome production in *Iris*.

IV. Effect of different levels of nitrogen and phosphorus on growth, flowering and rhizome production in *Iris*.

V. Effect of different storage temperatures of rhizome on growth, flowering and rhizome production in *Iris*. 
VI. Effect of growth regulators on growth, flowering and rhizome production in Iris.

VII. Effect of fungicides on storage of rhizomes and subsequent
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