RAMA UNIVERSITY, KANPUR, UTTAR PRADESH

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Course: Production Technology of Ornamental Crops, MAPs, & Landscaping (HOR-221)

Lecture 10

Tuberose

Introduction: It is commercially grown as cut flower, loose flower as well as for its potential in perfume industry. The flowers of tuberose are used for artistic garlands, floral ornamentals, bouquets and button holes. It belongs to family Agavaceae and is originated from Mexico.

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Varieties: Variegated, Calcutta Single, Calcutta Double, Rajat Rekha, Swarna Rekha, Shringar, Suvansini, Prajwal and Vaibhav**.**

Climate: Tuberose grows in mild climate without extreme of high or low temperature. For its luxuriant growth, it requires high humidity and moderate temperature. The double type cultivars prefer a cooler temperature than the single type. Tuberose grows well in sunny situation. The optimum temperature range for growth and development is 20^{O}C to 30^{O}C.

Soil: Loam and sandy loam soil with good aeration and drainage are considered ideal for its successful cultivation. Well drained friable soil of atleast 45 cm depth, rich in organic matter and sufficient moisture retaining capacity is good for proper plant growth. A mixture of garden soil, farmyard manure and leaf mould in the proportion of

2:1:1 should be used for pot culture of tuberose.

Propagation: Tuberose is generally propagated vegetatively by means of bulbs. Seeds are difficult to germinate. To get virus-free material or for a very rapid multiplication, tissue culture method is adopted.

Cultural operations

Weed control: Generally, weeding is done by hand. Pre-emergence application of Stomp (pendimethalin 30 EC at 1.25 kg a.i./ha) caused maximum reduction of weeds and also produced higher yield of qualityflowers.

Manure and fertilizers: Fertilizer application at 200 kg N, 150 kg P and 150 kg K/ha is recommended to obtain maximum number of spikes. Nutrition dose comprising of 200 kg N,150kgPand200kgK/ha has been found optimum for tuberose under Pune conditions.

Diseases

Fungal: Stem rot or Sclerotial wilt, Leaf blight or Botrytis blight and Alternaria leaf spot.

Bacterial: Flower bud rot**.**

Insect pests: Grasshopper, Weevil, Aphid, Red Spider Mite, Thrips, Borers and Nematodes.

Harvesting: Flowering of tuberose starts 2 to 4 months after planting. For its marketing as cut flower, the tuberose is harvested by cutting the spike when 1-2 pairs of flowers open on the spike preferably in the morning before sun rise or late in the evening. About 4-6 cm basal portion has to be left to allow the growth of bulb. For loose flower production and extraction of concrete/absolute only individual open flower is harvested early in the morning from the flower spike. On an average, 2 to 4 flowers per spike can be plucked everyday.

Grading and packaging: These spikes are graded according to the stalk length, length of rachis, number of flower per spike and weight of spike. For making bouquet and room decoration, long spikes are preferred and are sold in bundles. Each bundle contains 50- 100 spikes. Bundle of spike is packed in rectangular bamboo baskets lined with cloth. For long distance transport, corrugated cardboard boxes are used for packaging. The size of boxes varies in accordance with spike length. As a guideline the minimum length of the box should be about double the width and its width about double the height. Each bundle is tied and upper portion of rachis is wrapped in either tissue or grease paper. The bundles should be placed in two parallel rows, two in one row and other two in second rows. The direction of rachis in two rows should be in opposite direction. Paper is to be placed below the bundles and in between bundles and then transported to distant places.

Yield: The yield in tuberose crop varies with the type of cultivar, size of bulb, time of planting, density of planting and other management practice adopted. Normally 2 lac to 4 lac spikes/ha or 10-15 tonnes loose flower/ha can be obtained. Yield of bulbs varies from 18-30 tonnes/ha.