



Research Paper

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Advancing early flowering in tuberose (*Polianthes tuberosa* L.) under low plastic tunnel

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Abstract : The studies were conducted on advancing early flowering in two single petalled tuberose cultivars namely; Shringar and Mexican Single due to the bulbs planted under three different growing conditions viz., under low plastic tunnel (planted on 2nd December, 2005), under open field conditions (planted on 2nd December, 2005) and under open field conditions on recommended planting time (planted on 2nd March, 2006). The results obtained showed that the tuberose bulbs planted under low plastic tunnel started flowering during last week of May (26th), which was 44 day earlier to the bulbs planted without tunnel and 38 day earlier to the normal recommended planting time (March) under Delhi conditions in cv. Shringar. The flower quality in terms of spike length (66.88 to 68.67 cm) and number of florets per spike (43.13 to 44.63) was not affected significantly under low plastic tunnel grown crop. The early plantings with plastic tunnels had a non significant effect on plant height and spike length in cv. SHRINGAR and a significant effect in cv. Mexican Single except for other growth and flowering parameters studied. However, the advanced off-season flowering in tuberose will offer higher returns to the farmers owing to an overall increase in total flowering period of the crop.

Key words : Early flowering, Plastic low tunnel, Spike, Tuberose

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Tuberose (*Polianthes tuberosa* L.), commonly known as *Rajnigandha* in Hindi, a member of family Agavaceae, is cultivated as summer crop in North Indian plains. Tuberose is largely cultivated for the commercial production of cut flower, loose flower and extraction of concrete/ absolute. The farmer's ease to grow tuberose as summer crops has made it viable for commercial cultivation. The tuberose is native to Mexico and largely cultivated in Italy, France, Morocco, South Africa, Taiwan, Egypt and India, including many other tropical and sub-tropical areas of the world. In India, it is being grown commercially on over 30,000 ha area (Singh *et al.*, 2010). Flowers of tuberose produce one of the rarest and most valuable aroma compounds. Tuberose is an important bulbous ornamental plant and produce waxy white flowering spikes with sweet and pleasant fragrance and are in great demand for indoor decoration, garland, bouquet, cut flower trade and extraction of essential oil.

The availability of cut flowers is available especially during the summer months coincided with a season of less

demands during the period of June to October. Plastic coverings have also shown to reduce number of days to fruit set and first harvest compared to uncovered treatment. However, the effect of cultivars and perforations on number of days taken to fruit set and fruit harvest was not significant (Kumar and Srivastava, 2000). However, an early crop if advanced by a fortnight not only fetch a higher price but duration of crops is increased with a significant increase in total flower yield due to the faster sprouting of the bulbs and plants development under the tunnels than in open as it has been reported in the raising seedlings of rice, brinjal, tomato cosmos and zinnia (Mittra *et al.*, 1990) under plastic low tunnels. The augmenting of plastic low tunnel treatment in tomato increased total and early yields from a 1.4 and 22.6 times, compared with conventional cultural methods (Apaydn *et al.*, 1998). Therefore, the present experiment was undertaken to explore the early advancing of flowering in two single petalled tuberose cvs namely, Shringar and Mexican Single planted under plastic low tunnels.