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Evaluation of tuberose (*Polyanthes tuberosa* L.) genotypes under coastal ecosystem of Tamil Nadu

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Tuberose (*Polyanthes tuberosa* L.) is an ornamental bulbous plant belonging to the family Amaryllidaceae. It is essential to develop varieties suited to specific climatic conditions that can be further utilized for genetic improvement of tuberose. Attempts made so far to exploit the available variability have culminated in the release of a few improved region specific selections as varieties from different parts of India and varieties suited to coastal ecosystem are yet to be identified. Nevertheless, there still exists an ample scope to exploit the available variability to identify genotypes to suit coastal ecosystem that will pave the way for future breeding programmes. Hence, an experiment was laid out to study the performance of 21 genotypes of *Polyanthes tuberosa* L. collected from varied geographical locations with randomized block design replicated thrice to assess the genetic variability for sixteen economic characters. Results showed that the genotype PI-15 recorded relatively superior mean performance with respect to all characters. High PCV and GCV were observed for number of leaves per plant, plant height and rachis length. Low variability in terms of PCV and GCV observed for length of the flower and time taken for flowering. High heritability values of more than 60 per cent were observed for bulb volume followed by yield of flowers per plant, rachis length and duration of flowering. The genotypes viz. PI-15 (Kuzhmani, Thiruchirappalli District), PI-3 (Ravanthavadi, Dharmapuri District) and PI-10 (Perumalpettai, Dindigul District) were identified as superior genotypes which are suitable for the coastal region based on *per se* values and can be utilized for future breeding programmes.

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Screening of different cultivars of tuberose (*Polyanthes tuberosa* L.) under humid agroclimatic conditions of Goa

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Tuberose (*Polyanthes tuberosa* L.) is one of the most important tropical bulbous ornamental plants cultivated for production of long lasting flower spikes. Adaptation and acclimatization of different cultivars under humid agro climatic conditions of Goa are to be

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confirmed for their better performance. This not only help the farmers to grow released and new introduced and improved cultivars but also helps in making them understand their superiority over local cultivars. The present investigation was conducted to evaluate the performance of different tuberose cultivars viz., Mexican Single, Pearl Double, Suvasini, Bangalore local Double, Calcutta Double and Pune local under agro- climatic conditions of Goa during the year 2014-2017. All cultivars differed in their growth and flowering behaviour. Maximum plant height (52.21 cm) and maximum no. of leaves per plant (59.63) were recorded in Suvasini cultivar. Leaf length was significantly higher (52.93 cm) in Pearl double whereas leaf width (2.04 cm) was maximum in Calcutta Double. Days to appearance of initial spike were earlier in Suvasini while it was late in Bangalore local Double. Minimum days taken for opening of basal floret (84.88 days) were recorded in Suvasini. Maximum no. of florets/spike (47.0) was observed in Pune local whereas length of spike (75.59 cm) was maximum in Mexican Single. Spike girth (0.68 cm), Spike fresh weight (69.06 gm), floret stalk length (3.6 cm), diameter of floret (5.24 cm), weight of individual floret (3.49g) and vase life (7.93 days) was significantly maximum in cv. Suvasini followed by cv. Pearl Double. On the basis of observations recorded for growth and floral parameters cv. Suvasini and Pearl Double could be recommended for commercial cultivation under Goa agroclimatic conditions.

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Season wise identification of core collection in white onion germplasm using agro-morphological characterization

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Onion (*Allium cepa* L.) is one of the most valuable vegetables in the world. However, despite its global culinary and economic significance, the knowledge about onion genetic diversity and resources is limited. The potentially devastating impacts of climate change on crop production and food security are now widely acknowledged. An important component of efforts to mitigate these impacts is the production of new varieties of crops which will be able to thrive in more extreme and changeable environmental conditions. There is therefore an urgent need to find new sources of genetic diversity for crop improvement. Further for thorough study of available vast germplasm collection will become tedious and costlier. Formulation of core set using whole genetic diversity and then critical analysis of that set of germplasm against variable traits and phenomenon is easier. ICAR-DGGR holds about 350 white onion germplasm being National Active Germplasm Site (NAGS) under NBPGR, New Delhi. White onion has more demand in processing industries as after dehydration it retains the white colour of the product. In the present study, initially basic white onion germplasm collection was differentiated into three seasons such as *Kharif* (230), *Late Kharif* (194) and *Rabi* (213) and evaluated for more than three years. Data has been recorded on 20, 19 and 24 morphological traits during *Kharif*, *late Kharif* and *rabi*, respectively and average values were used for

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