



Assessment of Asiatic Lilly varieties under open field condition in Bangalore region

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ABSTRACT

An experiment was conducted to appraise the execution of five Asiatic hybrid lily varieties viz., Nashville Yellow (V1), Break Through Red (V2), Meriton Orange (V3), Richmond White (V4) and Arbatax Pink (V5), which were grown under open condition at Floriculture unit, Department of Horticulture, University Of Agriculture Sciences, GKVK, Bangalore in the course of 2021-22 with an objective to ascertain the appropriate variety for Bangalore condition. The trial was escorted in Randomized Complete Block Designed along with four replications. According to the results of the trial, Five Asiatic hybrid lily types performed satisfactorily in terms of growth and flowering criteria. Variety Arbatax Pink was found most suitable for local climatic condition of Bangalore region.

Keywords: Climate, evaluation, hybrid lily, open condition and varieties

Flowers are the spirit of a garden and communicate the message of nature to people. They stand for beauty, love, and tranquility. India is conferred with different agro-climatic zones, which will facilitate for the exhibition of diplomatic and fragile flower crops across the country. In the global market for cut flowers, lilies are one of the most significant horticultural crops. *Lilium* is included in top ten distinguished cut flowers because of its magnitude, elegance and endurance (Thakur *et al.*, 2005). It belongs to the family "Liliaceae" and consists of more than 80 species (Comber, 1949). The global gene centres for this species are located in the northern hemisphere. Horticulturists are quite fond of the cultivars of *Lilium* because of its exquisite bloom colour, scent, and greater adaptability. Asiatic lilies have quickly gained appeal in our nation due to its large, eye-catching blossoms' ability to rehydrate after long distance travel. *Lilium* deserves to be called the aristocrat of the plant world. *Lilium* plant condign the title "patrician of plant creation." In concerning to flower colour in Asiatic hybrids, 44.1 percent, the orange is prime colour, come after yellow. Asiatic lilies are frequently utilised in the floral industry as potted

plants and cut flowers. It has both sexual and asexual reproduction methods. However, the best methods of multiplication for it are stem bulblets and bulb divisions. The mother plants' growth state heavily influences the quantity and size of bulb and bulblet production. Plants must be planted with the appropriate deepness, germination conditions and bulb size. The cultivation of *Lilium* requires maximum day and night temperature of 21°-25°C and 12°-15°C respectively for getting profitable yield.

Evaluation of cultivars is crucial since discrete varieties contradicted in their color, stem length, and flower count, all of which have a direct impact on how profitable their cultivation is. For the production technology to be standardised and transferred to farmers' fields, cultivar research is crucial. Studying the development habits, flower shapes, sizes and colours of commercially significant cultivars can help farmers to choose the types that meet best consumer demand. Consequently in this view, current inquisition was directed to appraise the interpretation of five varieties of Asiatic hybrid lily for qualitative and quantitative parameters at Bangalore circumstances.

Short communication

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An experiment was conducted during 2021-22 (October) at Floriculture unit, Department of Horticulture, University Of Agriculture Sciences, GKVK, Bangalore, Karnataka. Five varieties of Asiatic hybrid lilies viz., Nashville Yellow (V1), Break Through Red (V2), Meriton Orange (V3), Richmond White (V4) and Arbatax Pink (V5) with four replications were concealed for distinct qualitative and quantitative traits. In a raised bed of 1 m wide by 12 m long, healthy bulbs of a consistent size weighing between 30 and 40 g were planted on 5th October 2021. Soil, coco peat, and sand mixture were used to fill raised beds. Randomised Complete Block Design was used to perform the research. A drip irrigation system was used. The necessary steps for plant preservation were implemented. Height of plant, number of leaves, leaf length, leaf breadth and stem girth were recorded at 45 days after planting. Similarly different flower parameters like days to flower bud initiation, days to flower bloom, flower bud length, flower diameter, and number of flowers per shoot were recorded. The signify estimates of proclaimed data on assorted traits were concerned

to statistical inspection and exhibited in Tables 1 and 2.

Growth parameters

Arbatax Pink exhibited the average tallest plant as 46.6 cm, with Break Through Red following closely at 42.8 cm. Conversely, Meriton Orange displayed the average shortest plant as 33.2 cm. Barik and Mohanty (2015) as well as Sindhu *et al.* (2012) both have documented significant variability in plant height among *Lilium* cultivars in the Northern plains.

Arbatax Pink had maximum number of leaves per plant (106) followed by the cultivars Break Through Red and Richmond White. The cultivar Richmond White was succeeded by Arbatax Pink in terms of plant height, with maximum leaf length (3.8 cm), leaf breadth (1.4 cm), and stem girth (2.4 cm), all being recorded for Arbatax Pink. Diverse *Lilium* cultivars perhaps have distinct vegetative traits due to discrete growth frequency and eugenic prospects. According to Kim *et al.* (2013) and Pandey *et al.* (2008), vegetative growth in Asiatic hybrid lilies produced similar results.

Table 1: Performance of Asiatic liliu cultivars for vegetative parameters at 45 days after planting

Varieties	Plant Height (cm)	Number of leaves per plant	Leaf length (cm)	Leaf width (cm)	Stem girth (cm)
Nashville Yellow (V1)	35.4	78	2.6	0.8	1.7
Break Through Red (V2)	42.8	90	3.0	1.0	1.8
Meriton Orange (V3)	33.2	70	2.4	0.7	1.5
Richmond White (V4)	37.1	82	3.2	1.1	2.1
Arbatax Pink (V5)	46.6	106	3.8	1.4	2.4
SEm (±)	0.78	1.97	0.08	0.39	0.05
LSD (0.05)	0.26	0.65	0.03	0.02	0.02

Table 2: Performance of Asiatic liliu cultivars for flower parameters

Varieties	Number of days taken for flower bud initiation	Number of days taken for flower bloom	flower bud length (cm)	Flower diameter (cm)	Number of flowers per shoot
Nashville Yellow (V1)	47	63	8.8	15.7	3.4
Break Through Red (V2)	40	56	10.6	17.8	3.6
Meriton Orange (V3)	49	67	8.2	14.2	3.2
Richmond White (V4)	44	59	9.5	16.4	3.6
Arbatax Pink (V5)	38	52	12.3	19.2	3.8
SEm (±)	0.66	0.84	0.23	0.28	0.03
LSD (0.05)	0.23	0.28	0.08	0.09	0.01

Flower parameters

Regarding flowering traits (Table 2), Break Through Red (40 days) came in second after var. Arbatax Pink (38 days) in terms of early flower bud initiation. Meriton Orange, on the other hand, took the maximum of 49 days to start producing flower buds. The cultivar Arbatax Pink maintained the same trend to require shortest period (52 days)

to reach flowering. Analogous consequent discrepancy was ascertained by Dhiman (2003) in *Lilium* hybrids under the Kullu circumstances. The genetic variability among cultivars and the climatic context during the crop growth interval were the main causes of disparity in number of days incumbent for commencement of the first bud.

Evaluation of lilly varieties

The Arbatax Pink variety produced the maximum average flower buds per stalk (3.8) throughout this trial followed by Richmond White and Break Through Red (3.6). The quantity of flower buds on each shoot plays a significant role in determining the price of the flowering shoot.

Affiliated consequences in Asiatic Lilly were reported by Kumar *et al.*, (2011) and Negi *et al.*, (2016).



Break Through Red

Richmond White

Meriton Orange



Nashville Yellow

Arbatax Pink

Fig 1: Different Asiatic lily varieties used for experiment

A greater number of bloom buds per shoot is desirable. There were significant differences in blossom diameter and flower bud length across the species of Asiatic lilies. Variety Arbatax Pink had maximum bud length and flower diameter measurements of 12.3 cm and 19.2 cm respectively, may be due to phenotypic expression its inherent potential. The size of the flowers has an impact on the flowering stem's quality as well, and larger buds are always preferred. Similar findings for Asiatic lilly hybrids were reported by Bhandhari *et al.*, (2016) and Kumar *et al.*, (2018).

CONCLUSION

Since the *Lilium* cultivar Arbatax Pink performed well under open field conditions, it may be suggested for commercial cultivation in the Bangalore region of Karnataka.

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