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National Academy of Agricultural Science (NAAS) Rating : 3.03

Evaluation of Different Varieties o f Lilium (*Lilium* sp.) For Flowering and Flower Quality Under Shade net Conditions"

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ABSTRACT: *An experiment was conducted to study the comparative performance of eight varieties of lilium* viz *Elite, Serrada, Brunella, Tresor , Latoya, Novano, Brindisii and Courier at the 'Hi-tech Floriculture Project' College of Agriculture, Pune (M.S.) during the year 2009. The analyzed data indicated that all the cultivars differed significantly with flowering and flower quality parameters .Among the eight cultivars studied , cv. Tresor showed earliness in flower bud initiation , first flowering and short period for complete harvesting (42.69, 56.31 and 62.13 days) followed by cv. Novano (48.53 ,59.26 and 70.86 days) while delayed bud initiation , flowering and complete harvesting was noticed in cv. Serrada . Cultivars Elite recorded maximum number of flower bud (4.21) per plant.The variety Elite showed longer flower stalk (96.06 cm) and superior than all other variety , followed by variety Courier (84.23 cm) while minimum length of flower stalk observed in cv. Novano (51.94 cm). Significantly maximum stalk thickness (1.39 cm) was observed in cv. Latoya followed by Courier (1.37cm) where as minimum in cv. Elite (1.14 cm). Maximum length of flower bud (9.05cm) and flower diameter (19.00cm) was observed in cv.Serrada followed by Courier while minimum in cv. Elite. Maximum vase life was observed in cv. Courier (8.3days) while minimum in cv. Brunello (6.0 days).*

Key words: *Lilium, Evaluation, Varieties, Shadenet, Flower, Flowering quality.*

Lilium (Lilium sp.) is one of the most attractive and popular ornamental bulbous plant. The appearance, beauty and colour of bloom are very spectacular and attractive. It is used as cut flower and potted plant all over the world (Bowser, 1986). It has bright and scented flowers. Lilium is gaining increasing popularity among cut flower due to its long lasting colourful flower. It ranks fourth in the international flower auction market. In language of flower, lily is the symbol of purity and innocense. The performance of any crop or variety largely depends upon its genetical make up. Further the performance of these depends upon climatic conditions of the region under which they are grown. Hence, it is very much necessary to collect and evaluate the different varieties in order to select the suitable varieties for specific region. Flowering and quality of flower are important characters to be considered for the evaluation of lilium. Hence, this experiment was carried out to study the flowering and flower quality parameters.

MATERIALS AND METHODS

The present investigation was conducted during the year 2009 at Hi-tech Floriculture Project, College of Agriculture, Pune, (MS). The experiment was laid out in Randomized Block Design with four replications and eight varieties viz., Elite, Serrada, Brunello, Tresor, Latoya, Novano, Brindisii and Courier. The uniform size and proper resting bulbs of these varieties were planted on raised beds prepared from mixture of red soil, vermicompost and FYM under shadenet house (75% shadenet) conditions. Before planting bulbs were treated with Bavistin (0.2%) for 5 min. Planting was done 15 x 10 cm spacing at 15 to 25 cm depth. Light irrigation was given immediately after planting and regular watering was done to maintain optimum moisture through drip irrigation. From the time of bud initiation various flowering and quality parameters were recorded. Flowers were harvested when the bud fully coloured , but not yet open on stem. Data recorded for the said characteristics was analyzed statistically as per the procedure given by Panse and Sukhatme (1985).

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RESULTS AND DISCUSSION

Lilium cultivars varied significantly for flowering and flower quality parameters. The data pertaining to flowering and flower yield is presented in Table-1.Early bud initiation was observed in variety Tresor which took only 42.69 days for bud initiation after planting. The variety Serrada required more days (57.33) for bud initiation. Variation differed significantly among all the varieties under study which might be due to genetical base as well as having good plant height, stem girth and number of leaves. Similar variation due to cultivars was also observed by Dhiman (2003) and Sindhu (2006). Early bud initiation tends to earliness of cultivars which produce flowers early as compared to other cultivars. Significantly earlier flowering was observed in cv. Tresor (56.31 days) followed by Novano (59.26 days) while late flowering was observed in cv. Serrada. Early or late flowering behaviour is a varietal characteristics with support of genetical base as well as physiological charactgers. This results are similar to the findings reported by Thakhur et al. (2010). The days required for harvesting differed significantly in different varieties under shade net conditions . The days required to complete harvesting after planting earliest in cv. Tresor (62.13) followed by cv.Serrada (64.13) and significantly maximum days to harvest (70.86) in cv. Novano. The duration of harvesting was varied as per their genetic constitution and environmental effect.

Table 1
Flowering characters of lilium as influenced by different cultivar

Sr. No.	Treatment (Varieties)	Days to Bud initiation	Days to First flowering	Days to Harvest	Buds / plant
1	Serrada	57.33	68.88	78.40	2.95
2	Elite	53.28	66.64	76.20	4.21
3	Brunello	53.94	65.88	75.38	2.36
4	Tresor	42.69	56.31	62.13	3.08
5	Latoya	52.44	68.25	76.09	3.80
6	Novano	48.53	59.26	70.86	3.94
7	Brindisii	51.25	66.56	77.56	2.81
8	Courier	51.81	68.69	76.22	4.04
	Mean	51.41	65.06	74.10	3.40
	SE ±	0.42	0.59	0.49	0.17
	CD at 5%	1.24	1.73	1.43	0.51
	CV %	1.64	1.80	1.31	10.16

This might be due to early bud initiation which was observed in Tresor and late initiation in Serrada. This result has been supported by Sindhu (2006). Number of flower bud per plant was maximum in cv. Elite (4.21) followed by cv. Courier (4.04) whereas minimum in cv. Brunello (2.36). Variation due to cultivar was also reported by Sindhu (2006). Ranpise *et al*. (2008) and Sindhu *et al*. (2010) at various location of India.

Significant variation among the cultivars for flower quality parameters was observed. The data regarding the same is presented in Table 2. The cv. Elite recorded longer flower stalk (96.06 cm) followed by cv. Courier (84.23 cm) while minimum in cv. Novano (51.94 cm) The variation among the cultivars might be due to genetic makeup; and plant height. This findings has been also supported by Patil *et al*. (1994) in gladiolus. The cv. Latoya had stronger stalk thickness (1.39 cm) which was significantly superior over all the varieties followed by cv. Courier (1.37cm) and Tresor (1.33 cm) whereas minimum in cv. Elite (1.14cm). The vegetative growth in cv. Latoya was also better which might be contributed in developing maximum thickness of stalk. The difference in this character might be due to varieties and genetic potential as well as conditions provided for growth.

The cv. Serrada recorded maximum length of flower bud (9.05cm) while cv. Tresor exhibited minimum length of flower bud. Variation due to genetic constitution of the individual varieties. Similar variation also observed by Janakiram and Srinivas (2006) and Ranpise *et al*. (2007).

Table 2
Quality of lilium flower as influenced by different varieties

Sr. No.	Treatment (Varieties)	Length of flower stalk (cm)	Thickness of flower stalk (cm)	Length of flower bud (cm)	Flower diameter (cm)	Vase life (days)
1	Serrada	73.70	1.30	9.05	19.00	6.6
2	Elite	96.06	1.14	6.94	14.28	6.6
3	Brunello	78.21	1.33	7.75	16.16	6.0
4	Tresor	81.21	1.33	6.95	17.28	7.3
5	Latoya	81.07	1.39	7.83	17.78	7.6
6	Novano	51.94	1.16	6.94	16.13	6.3
7	Brindisii	81.12	1.35	7.41	17.70	8.0
8	Courier	84.23	1.37	8.18	18.17	8.3
	Mean	78.44	1.30	7.63	17.06	7.09
	SE ±	1.50	0.01	0.05	0.06	0.41
	CD at 5%	4.41	0.03	0.15	0.16	1.20
	CV %	3.82	0.02	1.34	0.65	

The significantly maximum flower diameter (19.00cm) was recorded in cultivar Serrada followed by cv. Courier (18.17cm) whereas minimum in cv. Elive (14.28cm). The floral characters of the cultivar is

invariably with respect the varietal characters. It was reported by Janakiram and Srinivas (2006) and Thakur *et al*. (2010) that genetic attribution of variety affects the floral characters of varieties. The post harvest studies of flowers with regard to keeping quality is very important. The cv. Courier had maximum vase life (8.3 days) followed by Brindisii (8.0 days), whereas shortest vase life observed in cv. Brunello (6.0 days). The vase life flower is total effect of floral as well as physiological characters of variety.

From this experiment, it was evident that cultivars Tresor, Novano and Brindisii were earlier in bud initiation and flowering while cv. Serrada was late. Flower yield and quality of flowers produced better in cultivars Latoya, Courier, Serrada and Elite.

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