# Evaluation of *lilium* cultivars under northern plains

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**Abstract:** All the varieties had shown good percentage of sprout emergence. Yellow Giant took minimum number of days to sprout emergence (5.00) and bud initiation (37) and flowering since planting (96.66) whereas cultivars Alaska and Vivaldi took the maximum number of days to sprout emergence (8.00). The bud initiation and days taken to flowering are desirable characters because cultivars consume less resources and time from planting to harvesting of flowers. The cultivars, which took more number of days to complete flowering, were Prilo (106.16), Tanneron (103.16) and Corrida (103.00). Out of six cultivars evaluated, plant height was recorded maximum in Yellow Giant (66.25 cm) followed by Vivaldi (60.41 cm) cultivars. Yellow Giant and Corrida showed maximum flower size and number of bulbs produced per plant whereas maximum diameter of bulb was recorded in cultivars Vivaldi and Alaska. The maximum number of bulblets per plant was recorded in cultivars Yellow Giant and Vivaldi.

Key Words: Bulbs, Cut flower, Lilium.

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## Introduction

Lilium is one of six major genera of flower bulbs (geophytes) produced worldwide (De Hertogh and Le Nard, 1993). At present, the three major markets for Lilium are fresh cut flowers, potted flowering plants and landscape or garden plants. Lilium is grown mainly for cut flowers as well as for pot plants in landscape. Earlier, its cultivation was restricted to temperate zone but now the researchers have made efforts and now it is being grown successfully in plains also. There is marked difference in desired plant heights at the time of flowering, the total number of marketable flowers, spike length and several other qualitative and quantitative parameters in various cultivars of Lilium. Therefore, proper varietal evaluation for the location specific has become essential.

#### MATERIALS AND METHODS

The study was conducted under 50 per cent shade net house. The bulbs having the size of 10/12 cm in circumference were planted at a distance of 15x20 cm on raised beds of one-

meter wide. Recommended package and practices were followed. The experiment was laid out in randomized block design with three replications and the data were analyzed accordingly. Plant height was measured from the surface of the soil to the tip of the inflorescence. Bud formation was evident from pea-sized buds inside the folded leaves. The trial was conducted at the Research Farm of Division of Floriculture and Landscaping, Indian Agricultural Research Institute, New Delhi. The climate of the area is subtropical, semi-arid with hot dry summer and cold winter with optimum rains.

### RESULTS AND DISCUSSION

The results presented in Table 1 revealed that cv. Yellow Giant has taken minimum number of days to sprout emergence (5.00) followed by Tanneron. All cultivars showed good percentage of sprout emergence and there has been a significant difference in sprouting of bulbs and it was recorded more than 90 per cent in each cultivar and at par in Yellow

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Giant and Corrida (98 %) followed by Viavaldi (97.50%).

Since, *Lilium* is well adopted in cooler climate where it attains a height up to one meter but it is relatively lesser under northern plains of sub-tropical climate. Out of six cultivars evaluated, plant height was recorded maximum in Yellow Giant (66.25 cm) followed by Vivaldi (60.41 cm.) whereas minimum plant height was recorded in cv. TANNERON (46.33 cm). Ideally short plants are suitable for small pot plant, medium plants for landscape purpose and tall plants for cut flowers (Dole and Willin, 1996).

The cultivars Prillo, Vivaldi and Yellow Giant showed bud count suitable for cut flowers. High bud counts (10+/ bulb) are suitable for potted plants and (3-4+/bulb) are suitable for landscape purpose. High bud counts on potted plants would also allow a long postharvest life as each of the buds opens in succession (Dole and Willin, 1996).

Yellow Giant took minimum number of days to complete flowering (96.66) followed by Alaska (99.16) whereas maximum days were taken by cv. PRILO (106.16). These results are in accordance with Dole and Wilin (1996) who also screened early and late variety of Lilium. Cultivars Yellow Giant and Corrida showed maximum flower size. Prillo produced maximum number of bulbs/plant cultivars. Vivaldi and Alaska showed maximum bulb size cultivars. Yellow Giant and Corrida showed maximum number of bulblets/plant. The maximum bulb diameter (5.48 cm) was obtained in cv. VIVALDI. These results are similar with the results of De Hertogh (1976).

Among all the cultivars planted Yellow Giant was the most suitable one as cut flower which produced maximum spike length, flower size, good bud count and has taken least number of days for bud initiation and flowering.

None of the cultivars taken under study were could hold good for potted plant. Cultivar Tanneron would have been suitable because of dwarf stature but the bud count was too low. Ceratain cultivar like Vivaldi and Alaska could be suitable as landscape plants since they are early to flower with prolonged duration.

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