

## Effect of mulching on cut flower production and corm multiplication in tuberose

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### ABSTRACT

A field experiment was conducted during 2005 and 2006 at the progressive farmer field of the Block, Khatauli Distt. Muzaffarnagar U.P. to study the effect of mulching on cut flower production and corm multiplication in tuberose cv. DOUBLE with six treatments of different locally available mulch materials viz., paddy straw, dry weed, dry sugarcane leave, transparent poly sheet, black poly sheet and control (without mulch). The study revealed that mulching with dry weed was the best among all. It produced longest spike (86.50 cm) and rachis (48.42 cm). These were significantly higher as compared to black poly sheet which produces spike length (82.68 cm) and rachis (42.48 cm). The corm multiplication was also improved in dry weed mulching. The maximum weight of corm (33.26 g) and highest number of cormels (24.56) were recorded from it. Dry weeds being an organic material might have improved the physical and chemical properties of the soil.

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**Key words :** Mulching, Spike, Dry sugarcane leave. Tuberose, Double

### INTRODUCTION

Now a days floriculture is fast emerging as a major venture on the world scenario consequently flower cultivation is recognized as most remunerate profession with a much higher potential for return per unit area than field crop. The major production is for domestic use traditional flowers the tuberose one of them. Tuberose (*Polyanthus tuberosa* L) is an important commercial flower crop in floriculture, it occupies a prime position because of its elegance and fragrance, popularity as cut flower, loose flower, as well as for its potential in perfume industry. The flowers are numerous, 4-6 cm long having funnel shaped perianth fragrant, waxy white and born in pair on erect leafy flowers stalks called scape. Continuous efforts are being made to improve the quality of cut flowers and also to produce more planting materials so as to meet the demand of the consumers. Mulching is one of the cultural practices which can help in this particular line of concern. It improves the soil temperature and moisture, keeps growth of the weeds considerably down besides improving the chemical and physical property of the soil thereby improving the productivity of the crops. Therefore, to improve the quality and productivity of tuberose, the effort was made to see that mulching can help in achieving the goals in Muzaffarnagar distt.

### MATERIALS AND METHODS

A field experiment was conducted at Sardar Vallabhbhai Patel University of Agriculture and Technology, K.V.K. Baghra, Muzaffarnagar, U.P. at the farm of progressive farmer during 2005-2006. The experiment was conducted in a randomized block design with six treatments and three replications. The treatments consisted of different locally available mulch materials viz., paddy straw, dry weed, dry sugarcane leave, transparent poly sheet, black poly sheet and control i.e. without mulch. The mulching materials were spread about 3" thick above the ground level. Uniform size of bulbs of tuberose cv. DOUBLE were planted on the raised beds at a spacing of 20x15 cm after spreading the various mulching materials. In case of poly sheets holes were made on them at the required spacing to facilitate planting of the bulbs. The data on growth flowering and corm multiplication attributes were recorded and analyzed statistically.

### RESULTS AND DISCUSSION

Table 1 indicates that number of days taken for first floret opening, spike length and rachis length varied significantly among the treatments. While plant height, leaf length number of florets/spike and floret length varied non-significantly. The days to first floret opening was least

**Table 1 : Effect of mulching on growth and flower production of Tuberose cv. Double (Fig. in Avg.)**

Treatments	Average plant height (cm)	Leaf length (cm)	Days to first floret opening	Spike length (cm)	Rachis length (cm)	Number of florets/spike	Length of flower	Weight of corm	Number of cormels
Paddy Straw	52.14	32.86	126.76	84.90	46.65	34.68	5.92	32.50	22.92
Dry weed	50.98	34.21	127.12	86.50	48.42	35.72	6.12	33.26	24.56
Dry sugarcane leave	54.06	36.04	129.06	85.32	43.98	36.24	5.98	28.40	23.50
Transparent poly sheet	48.05	29.68	162.95	86.20	47.36	34.32	4.12	32.40	23.50
Black poly sheet	49.98	30.84	171.23	82.68	42.48	33.98	3.94	30.60	23.90
Control	51.40	33.12	180.16	42.50	29.49	32.42	3.68	24.50	20.80

(126.76 days) when the plants were mulched with paddy straw which was statistically at par with dry weeds, dry sugarcane leaves (127.12; 129.06 day, respectively) this indicates that mulching with organic materials is beneficial than synthetic materials as organic materials might have also improved the chemical properties of the soil. Mulching with paddy straw results in improvement of soil characteristics *i.e.* cation exchange capacity. Organic carbon and available nitrogen, phosphorus and potassium may facilitate early flowering (Singh, 2003). Spike length which is one of the most important characters for cut flower was found to be highest (86.50 cm) from dry weed mulching and was at par with the black poly sheet and transparent poly sheet mulching (86.20 and 82.68 cm, respectively) Rachis length varied from 29.49 to 48.42 cm recording maximum length at the mulching with dry weed which was statistically same with transparent and black poly sheet (48.42 cm and 47.36 cm, respectively). The favourable effect of dry weeds on spike and rachis length might be due to the fact that these have provided the require amount of soil temperature, aeration and moisture and kept the weed growth under check (Sanigrathi and Borah, 2002) with regards to bulb (corm) and bulblet (cormel) production, variation in corm weight, cormel number and cormel weight which were found to be statistically remarkable, whereas number and diameter

of corm were significant (Table 1). Similar results were also observed by Joe *et al.* (2003) where rhizome diameter of ginger was not affected by mulch materials. Corm weight ranged from (24.50 to 33.26 g) and the highest value was recorded from mulching with dry weed. Similar finding was shown by Ghosh and Bouri (2003).

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