

Effect of preplanting treatment of bulbs of different Sizes with GA and CCC on the production of bulbs and bulblets Of tuberose (*Polianthes tuberosa* L.)

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ABSTRACT

Field experiment revealed that the size of bulb affected number of bulbs and bulblets per clump. The maximum number of bulbs and bulblets (28.71) was noticed in plants raised from large size bulbs treated with GA 400 ppm followed by medium (20.97) and small bulbs (13.81) and minimum bulbs and bulblets (11.29) found untreated small size bulbs sown on same time. The size of bulbs treated with GA 400 ppm significantly affected the number of bulbs and bulblets.

Key words : Tuberose, GA & CCC, Bulb.

INTRODUCTION

Tuberose (*Polianthes tuberosa* L.) is a member of family Amaryllidaceae. The genetic name *Polianthes* is probably derived from Greek "Polios" (Shining or white) & anθος (flower) in allusion to the bloom of the common tuberose and species *tuberosa* the plants being tuberose in nature. Reddy *et al.* (1997) reported results of an experiment on the effect of planting bulbs size a bulbs production in tuberose cv. double. They observed that the number of bulbs and weight of bulbs per plant increased with increase in bulbs size used for planting. Sellable bulbs per plants were greatest in the plants raised from bulbs measuring 2-1-3-0 cm in diameter. Bulblets were smallest on plants from smallest bulbs and largest on plants raised from large bulbs. Nagraja *et al.* (1998) in a trial, graded bulb of tuberose cv. Single into three grades based on their size (1-2 cm, 2-3cm and 3-4 cm). They planted bulbs in June, September or January at 3 spacing (20x20) cm 30x 20 cm and 30x30 (cm) and observed that number of bulbs produced increased with increasing bulbs size and spacing. Thus large bulbs planted in June at 30x20 cm produced the highest bulb yield (109.78g/plant. Roa *et al.* (1991) reported results of a trial on cv. single by planting tuberose 0.5- 1.5, 1.5- 2.5 and 2.5- 3.0 cm sizes at the depth of 2,4 and 6cm and found that large tuberose significantly increased flower, yield and yield and advanced flowering also. Sharga (1982) during trial with single flowered tuberose graded the rhizomes (bulbs) into 6 sizes ranging in weight from 3.0 to 49.5g. He observed that rhizomes (bulbs) of more than 19.4g weights only gave satisfactory results with regard to play growth and flowering.

MATERIALS AND METHODS

The present investigation was carried out at research Farm of Janta (PG) College, Bakewar Etawah U.P. the experiment was designed in split plot design with the three replications. The bulbs were kept into three groups on the basis of diameter. The small (below 2 cm) medium (2.3 cm) and large (above 3 cm) these bulbs were treated with G.A and CCC. (100,200and 400 ppm) before transplanting. Bulbs were transplanted in 15 March both year one control was also maintained. The regular Irrigation and hoeing were done. After over the flowing digging the plants they were cleaned and bulbs and bulbs lets per clump were counted at the time of lifting the clumps in each treatments the data recorded are given on below table. 4 clumps counted and average calculated.

RESULTS AND DISCUSSION

During present investigation the observation in the table 1 clearly indicate that average number of bulbs and bullets per lump was affected by size of bulbs. During year 1999 the Maximum number (29.09) was recorded in the plants raised from large size bulbs treated with GA 400 ppm followed by medium (20.76) and small bulbs (13.55) During year 2000 the same trend was repeated. The maximum number (28.71) was seen in plants of large size of bulbs and the minimum number (13.81) was recorded in plants raised from small size bulbs. When data of both year (1999) and 2000 were pooled. They revealed that the maximum number (28.71) of bulbs and bullets was noticed in the plants raised from large size bulbs followed by medium (20.97)

Table 1 : Effect of bulb size GA & CCC on the number of bulbs& bulblets during year 1999-2000.

Treatments	Average number of bulbs and bulblets								
	D ₁ Below 2 cm diameter			D ₂ Bulbs 2-3 cm diameter			D ₃ Bulbs above 3cm diameter		
	1999	2000	Pooled	1999	2000	Pooled	1999	2000	Pooled
P ₁ GA (100 ppm)	12.78	12.28	12.53	18.93	19.12	19.03	25.66	26.27	25.96
P ₂ GA (200 ppm)	12.15	12.62	12.38	20.27	20.61	20.44	28.84	18.32	28.58
P ₃ GA (400 ppm)	13.55	14.08	13.81	20.76	21.17	20.97	29.09	28.34	28.71
P ₄ CCC (100 ppm)	12.64	12.66	12.65	16.14	16.47	16.30	25.18	25.16	25.16
P ₅ CCC (200 ppm)	13.66	13.99	13.42	16.92	17.08	17.00	25.54	26.43	25.98
P ₆ CCC (400 ppm)	12.03	12.44	12.23	19.08	19.47	19.41	27.29	24.26	25.77
P ₇ Control	11.19	11.39	11.29	14.88	15.78	15.33	24.96	24.51	24.73
C.D. at 5% level	3.78			4.23			2.48		

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and small bulbs (13.81). The difference among these treatments was statistically significant.

SUMMARY

The minimum numbers (11.19) of bulbs and bulblets per clumps was recorded in untreated bulbs of small size bulb and maximum (28.71) in plants grown from GA 400 ppm treated large bulbs when sown on march 15 size of planting material also affected number of bulbs and bulblets per clump. The maximum number (28.71) was noticed in plants raised from large size bulbs followed by medium (20.97) and small bulbs (13.81). Large size bulbs treated with 400-ppm CCC though maximum number (25.77) was recorded. The large size bulbs treated with GA 400 ppm was maximum (28.71) bulbs and bulblet was statistically at per GA 100 and 200 ppm.

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Received : December, 2005; Accepted : February, 2006

ISSN : 0973-4783

THE ASIAN JOURNAL OF EXPERIMENTAL CHEMISTRY
AN INTERNATIONAL JOURNAL