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EFFECT OF CHEMICALS AND GROWTH REGULATORS ON CORM PRODUCTION OF GLADIOLOUS

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ABSTRACT

Gladiolus (*Gladiolus Species*) is herbaceous plant belonging to the family Iridaceae .It is important bulbouls plant used for cut flowers.In Gladiolus flower production technology ,dormancy of corm is one of the important factor .With this object study was undertaken to treat the corms by using various chemicals and growth regulators for better growth, good quality of cut flowers production.

A field experiment was conducted at Bharati Vidyapeeths College of Horticulture, Kadegaon , in Randomized Block design with three replications and twelve treatments. The treatments given to gladioli corms before planting comprised of GA_3(100 and 200 ppm), Ethrel (100 and 200 ppm), Thiourea (500 and 1000 ppm), KNO_3, (1000 and 2000 ppm), BA (25 and 50 ppm), Water soaking and control (without any treatment). However, higher corm and cormel yield was obtained under BA 50 ppm treatment.

Key words: -Gladiolus, Chemicals, Growth Regulators, Sprouting, Corm Yield.

INTRODUCTION

Gladiolus is one of the most commercially important bulbous cut flower crop and is considered as "Queen of bulbous plants." It has great demand as cut flower and garden display. The gladiolus crop is more popular among the flower growers.

Gladiolus (*Gladiolus species*) is an herbaceous plant belonging to the family Iridaceae. It is important bulbous plant for cut flowers. Netherland is largest producer of gladiolus in the world because of its short duration, easy cultivation and good value for the cut flowers. In gladiolus flower production technology dormancy of corm is one of the important factor. With this object study was undertaken to treat the corms by using various chemicals and growth regulators for obtaining early and uniform sprouting of corms, for better growth, good quality of cut flowers and more number of corms and cormel production.

MATERIALS AND METHODS

The field experiment was conducted on gladiolus cv. Jester at Department of Horticulture, In Bharati Vidyapeeth's, College of Horticulture, Kadegaon. The experiment was laid out in Randomized Block Design with three replications and twelve treatments of GA_3 (100 and 200 ppm), Ethrel (100 and 200 ppm), Thiourea (500 and 1000 ppm), KNO_3 (1000 and 2000 ppm) BA (25 and 50 ppm), Water soaking and untreated corms (control).

The experimental field soil was medium black having pH 7.62 and was prepared into fine tilth by ploughing and harrowing. Ridges and furrows at 40 x 20 cm were prepared. Full dose of phosphorous (200 kg ha¹) and potash (200 kg ha¹) were applied as the basal dose before planting of corms. While half dose of nitrogen (200 kg ha¹) was applied after 30 days of planting and remaining half dose of nitrogen (200 kg ha') was applied after 45 days of planting of corms.

The uniform size of healthy corms of gladioli cv. Jester were treated in aqueous solutions of different concentration as per the treatments of GA_3, Ethrel, Thiourea, KNO_3, and BA for six hours, while treatment of water soaking was done for twenty-four hours and then treated corms were planted on ridges by keeping 20 cm spacing between them at 5-7cm depth.

RESULT AND DISCUSSION

The data in respect of corm production and yield parameters are presented in Table1.

The data (Table 1) revealed that highest number of corms per plant (1.13) and number of corm per plot (26.13) and per ha. (1.306 lakh) were obtained under the BA 200 ppm treatment. Similar results were also obtained by Misra et al. (1999) and Das et al. (1999)

No. of Corms per plant.

The data (Table 1) revealed that maximum weight of corms per plant (27.69gm) were obtained under BA 200 ppm treatment. Similar results were also obtained by Misra et al. (1999).

Diameter of Corms (cm)

The data (Table 1) revealed that maximum equatorial diameter of corm (4.103 cm) was obtained under Ethrel 200 pmm treatment. The maximum polar diameter of corm (2.494 cm) was obtained under Ethrel 200 pmm treatment. Similar results were also obtained by Misra et al. (1999), Awasthi et al. (2012) in gladiolus.

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Table 1: Effect of chemicals and growth regulator on corm production of gladiolus

Treatments (ppm)	No. of corms per plant	No. of croms per plot	No. of croms per ha. (lakh)	Weight of croms per plant(gm)	Equatorial diameter of corm (cm)	Polar diameter of corm (cm)
GA_3 100	1.00	20.33	1.016	19.51	3.813	2.216
GA_3 200	1.07	23.53	1.176	21.79	3.727	2.277
Ethrel,100	1.00	23.67	1.183	25.63	4.035	2.408
Ethrel,200	1.07	23.80	1.190	25.36	4.103	2.494
Thiourea500	1.00	23.33	1.166	18.31	3.705	2.262
Thiourea1000	1.00	23.67	1.183	18.42	3.996	2.180
KNO_3 1000	1.00	22.33	1.113	19.55	3.895	2.210
KNO_3 2000	1.00	23.67	1.133	19.05	3.841	2.241
BA 25	1.07	24.20	1.210	24.67	4.025	2.363
BA 50	1.13	26.13	1.306	27.69	3.988	2.247
Water Soaking	1.00	23.67	1.133	20.30	3.625	2.346
Control	1.00	22.00	1.100	18.13	3.319	1.510
'F' Test	NS	NS	NS	Sig.	Sig.	Sig.
SE(m)+ -	0.04	0.97	4.889	1.33	0.15	0.97
CD at 5%	0.11	2.85	1.434	3.89	0.44	0.28

Sig-Significant NS- Non-Significant