

Effect of some plant growth regulators on growth, flowering and yield of gladiolus (*Gladiolus grandiflorus* L.) as pre sowing corms treatment

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ABSTRACT : An experiment was conducted to study the effect of growth regulators comprising GA₃ @ 50 and 100 ppm, NAA @ 50 and 100 ppm, Alar @ 250 and 500 ppm, MH @ 250 and 500 ppm, CCC @ 500 and 1000 ppm on gladiolus as corm treatment [soaked for 12 hours]. Results of the experiment envisaged that the growth parameters as well as yield attributes of gladiolus plants were significantly altered due to corm soaking of growth regulators. The maximum plant height (88.12cm), number of leaves (5.81), leaf length (40.01cm) and leaf length width (9.20cm) were observed in corm soaking of GA₃ @100 ppm treatment followed by GA₃ @ 50 ppm treatment. Among all treatments, GA₃ @100 ppm (40.10 days) recorded the earliest spike emergence followed by GA₃ @50 ppm (41.21 days). The spike emergence was delayed in CCC @ 1000 ppm (47.11 days) and in Alar @ 500 ppm (47.01 days). CCC @ 500 ppm treatment has significantly higher number of corms (1.05/plant) and cormels (5.01/plant). Application of GA₃ @100 ppm recorded the maximum number of marketable spikes (46.01 spikes/plot) with longer vase life and quality flowers.

Key Words: Gladiolus (*Gladiolus grandiflorus*), growth regulators, Alar, CCC, GA₃, MH, NAA, growth, flowering, yield.

Table-1: Effect of some plant growth regulators on growth, flowering and yield of *Gladiolus grandiflorus* L.) as pre sowing corms treatment on growth parameters.

Particulars	Sproutin- g of 80% corms (Days)			Plant height (cm)			No. of Leaves /plant	Leaf Length (cm)	Leaf width (cm)	Days ta- ken for spike em- ergence	Days ta- ken for 1 st floret to open	Spike Length (cm)	Vase life (days)	Daughter corms		Cormels	
	10 DAP	15 DAP	60 DAP	30 DAP	60 DAP	No. /plant								Wt. in (g)	No. /plant	Wt. in (g)	
T₁ Control	13.23	52.88 (46.65)	86.64 (68.56)	56.12	84.81	3.70	36.41	6.91	44.01	51.40	71.97	7.90	0.87	11.20	3.12	2.80	
T₂ Gibberellic acid @100ppm	11.10	62.38 (52.16)	97.14 (80.26)	62.13	88.12	5.81	40.01	9.20	40.10	47.02	76.03	11.50	0.95	16.61	3.82	3.67	
T₃ Gibberellic acid @50ppm	11.26	61.88 (51.87)	96.64 (79.43)	60.51	87.21	5.52	39.21	8.71	41.21	48.12	75.20	11.41	0.95	16.14	3.61	3.58	
T₄ NAA @100ppm	12.37	61.38 (51.57)	96.14 (78.66)	59.02	86.41	5.21	38.41	8.40	42.11	49.21	74.29	9.40	0.93	16.40	3.40	3.43	
T₅ NAA @50 ppm	12.40	60.88 (51.28)	95.64 (77.94)	57.51	85.60	4.92	37.61	8.12	43.23	50.30	73.32	9.12	0.92	16.12	3.52	3.53	
T₆ Alar @500ppm	13.23	49.32 (44.61)	83.82 (66.28)	51.14	82.21	3.80	34.90	6.80	47.01	54.20	68.02	10.40	1.02	20.88	4.40	5.58	
T₇ Alar @250ppm	13.35	49.81 (44.89)	84.32 (66.67)	54.12	84.12	4.12	35.51	7.21	45.02	52.50	68.75	10.21	1.03	20.01	4.61	5.06	
T₈ Maleic hydrazide @500ppm	14.56	50.38 (45.21)	85.14 (67.32)	54.18	84.21	4.61	36.80	7.81	45.03	52.12	70.03	10.80	0.98	17.80	3.91	4.22	
T₉ Maleic hydrazide @250ppm	14.76	50.32 (45.18)	85.06 (67.26)	53.82	83.81	4.22	36.41	7.80	45.02	52.31	70.01	10.41	0.97	18.12	3.80	4.24	
T₁₀ Cycocel @100ppm	14.23	49.38 (44.64)	84.14 (66.53)	51.52	82.42	4.01	35.21	7.22	47.11	54.70	69.11	10.20	1.05	21.40	5.01	5.60	
T₁₁ Cycocel @500ppm	14.96	49.88 (44.93)	84.64 (66.92)	53.14	83.21	4.31	36.01	7.52	46.04	53.60	69.07	10.51	1.04	22.10	4.95	6.01	
SED	0.19	0.21	0.34	0.22	0.10	0.11	0.24	0.17	0.23	0.24	0.31	0.11	0.01	0.29	0.06	0.19	
CD(p=0.05)	0.52	0.59	0.95	0.62	0.28	0.30	0.68	0.41	0.64	0.68	0.87	0.30	0.03	0.82	0.18	0.58	

*Data in parenthesis are transformed values.

