

Research Article

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## Effect of Organic Manure and Plant Growth Regulators on Flowering and Corm Production in Gladiolus Cv. Nova Lux

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### Abstract

#### Keywords

Vermicompost,  
FYM,  
Poultry manure and  
GA<sub>3</sub>

The experiment was conducted in Randomized Block Design (RBD) with three replications. A field experiment was conducted to assess the effect of vermicompost 20t/ha, 15t/ha, FYM 20t/ha, 15t/ha, Poultry Manure 20t/ha, 15t/ha, Vermicompost + GA<sub>3</sub> 20t+100ppm, FYM+GA<sub>3</sub> 20t+100ppm, PoultryManure+GA<sub>3</sub> 20t+100ppm on flowering and corm production in Gladiolus Cv. Nova Lux. Application of Vermicompost+GA<sub>3</sub> 20t + 100 ppm increasing floral character like number of days for emergence of spike, Length of spike, Number of Florets per spike, Diameter and Length of Florets and Corm characteristics such as Diameter of corm, Weight of one corm per plant, Number of cormels per plot, Corm yield per plot, Corm yield per hectare. Showed the maximum value followed by Poultry Manure + GA<sub>3</sub> 20t + 100ppm.

### Introduction

Gladiolus commonly called as “Sword Lily” or “Corm Flag”. The genus Gladiolus is comprised of about 180 species. It is the seventh most important flower crop in the world. In India, we have been growing and using flowers for time immemorial. Flowers have become integral part of our day-to-day life. It is particularly for

religious and social offering has been on the increase due to changing life style. This has led to the appreciation of the economic importance of flowers in addition to its aesthetic value. In our country and world not much work has been done on the use of organic manures for production of gladiolus but in present time reported that organically grown gladiolus shows luxuriant growth producing maximum number of

florets/spikes with higher diameter of florets, early sprouting, flowering and disease-free bloom fetch higher price (Nazir et al., 2007).

## Materials and Methods

The present investigation was carried out at Horticulture Garden of Janta College Bakewar, Etawah (U.P.) during year 2021-2022, to find out the effect of Organic manure and plant Growth Regulators on flowering parameters and corm production. Organic manures used were vermicompost (VC), FYM, and Poultry Manure (PM). The data were recorded for flowering parameters is number of days for emergence of spike, length of spike, number of florets per spike. The experiment was laid out in a randomized Statistical analysis was done as per the block design with 10 treatments and three procedure given by Panse and Sukhatme replications (1989). Diameter of florets, length of florets, diameter of corm, weight of one corm per plant, number of corms per plot, number of cormels per plot, corm yield per plot variety Nova Lux selected for investigation.

## Results and Discussion

In present Investigation the maximum Number of days for emergence of spike (90.00) day was recorded under T<sub>8</sub> Vermicompost (20t/ha) + GA<sub>3</sub> @ 100 ppm and the minimum number of days emergence of spike (69.67) under T<sub>1</sub> control. Maximum length of spikes was recorded (101.83cm) under the treatment T<sub>8</sub> Vermicompost (20t/ha) + GA<sub>3</sub> @ 100 ppm followed by (93.47) with T<sub>10</sub> Poultry manure (20t/ha) +GA<sub>3</sub> @100 ppm while the minimum length of spikes was produced (33.03cm) under T<sub>1</sub> (control) followed by (40.43cm) with T<sub>5</sub> (FYM 15t/ha). These results are in agreement with the finding of Aier *et al.*, (2015). Number of florets per spike (full blooming stage) ranges between (5.67 to 16.33). The maximum number of florets (16.33) was, found under in T<sub>8</sub> Vermicompost (20t/ha) + GA<sub>3</sub> @ 100 ppm followed by (14.00) under T<sub>10</sub> poultry manure (20t/ha) +GA<sub>3</sub> @100ppm. while minimum number of florets per spike (5.67) under

T<sub>1</sub> (control) followed by (7.00) with T<sub>5</sub> (FYM 15t/ha). The maximum diameter of florets (full blooming stage) (10.53cm) was recorded under in T<sub>8</sub> Vermicompost (20t/ha) + GA<sub>3</sub> @ 100 ppm followed by (9.43cm) with T<sub>10</sub> Poultry manure (20t/ha) +GA<sub>3</sub> @100 ppm while the minimum diameter of florets is (3.40cm) was recorded under T<sub>1</sub> control followed by (4.20cm) with T<sub>5</sub> (FYM 15t/ha). These results are in agreement with the finding of Farazi and Basaki (2013). The maximum length of florets (full blooming stage) (12.73cm) was recorded under in T<sub>8</sub> Vermicompost (20t/ha) + GA<sub>3</sub> @ 100 ppm followed by (12.20cm) with T<sub>10</sub> Poultry manure (20t/ha) +GA<sub>3</sub> @100 ppm while the minimum length of florets is (5.70cm) was recorded under T<sub>1</sub> control followed by (6.23cm) with T<sub>5</sub> (FYM 15t/ha). These results are in conformity with the finding of Ram *et al.*, (2001). The maximum diameter of corm (8.03cm) was recorded under in T<sub>8</sub> Vermicompost (20t/ha) + GA<sub>3</sub> @ 100 ppm followed by (7.60cm) with T<sub>10</sub> Poultry manure (20t/ha) +GA<sub>3</sub> @100 ppm while the minimum diameter of corm is (4.77cm) was recorded under T<sub>1</sub> control followed by (5.10cm) with T<sub>5</sub> (FYM 15t/ha). These results are in agreement with those reported by Umrao *et al.*, (2007) and Kumar *et al.*, (2009).The maximum weight of one corm (159.17gm) was recorded under in T<sub>8</sub> Vermicompost (20t/ha) + GA<sub>3</sub> @ 100 ppm followed by (145.83gm) with T<sub>10</sub> Poultry manure (20t/ha) +GA<sub>3</sub> @100 ppm while the minimum weight of per corm is (61.67gm) was recorded under T<sub>1</sub> control followed by (70.83gm) with T<sub>5</sub> (FYM 15t/ha). The maximum number of corms per plot (14.00) was found under in T<sub>8</sub> Vermicompost (20t/ha) + GA<sub>3</sub> @ 100 ppm followed by (11.67) with T<sub>10</sub> poultry manure (20t/ha) +GA<sub>3</sub> @100ppm and the minimum number of corms per plot is (6.33) was found in T<sub>1</sub> (control) followed by (7.33) with T<sub>5</sub> (FYM 15t/ha). Number of cormels per plot ranges between (21.667 to 47.67). The maximum number of cormels per plot is (47.67) was found under in T<sub>8</sub> Vermicompost (20t/ha) + GA<sub>3</sub> @ 100 ppm followed by (46.33) with T<sub>10</sub> poultry manure (20t/ha) +GA<sub>3</sub> @100ppm and the minimum number of cormels per plot (21.67) were counted under T<sub>1</sub> control followed by (23.00) with T<sub>5</sub>

(FYM 15t/ha). These finding are in corroborating with finding of Padmalatha et al., (2013). Maximum corm yield per plot ranges between (0.40kg) to (1.09kg). The maximum corm yield per plot is (1.09kg) was recorded under T8

Vermicompost (20t/ha) + GA<sub>3</sub> @ 100 ppm while the minimum corm yield per plot were taken (0.40kg) under T1 control. These results are inconformity with the finding of Umrao et al., (2007).

**Table– 1. Effect of Organic Manure and Plant Growth Regulators on Floral Character of Gladiolus Cv. Nova Lux.**

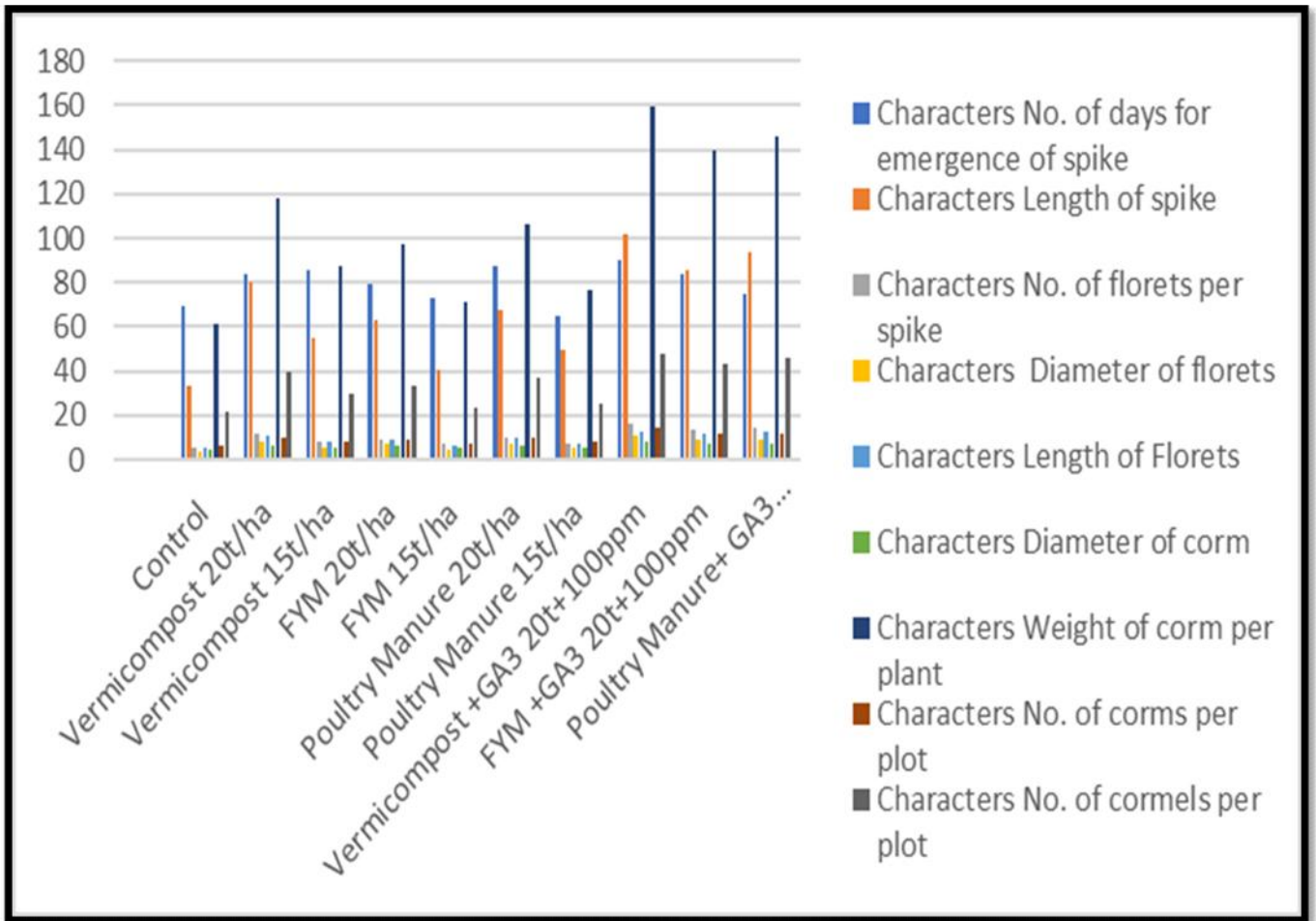
Treatment	Characters				
	No. of days for emergence of spike	Length ofspike	No. of florets per spike	Diameter of Florets	Length of Florets
Control	69.67	33.03	5.67	3.40	5.70
Vermicompost 20t/ha	83.67	79.90	11.33	8.03	10.97
Vermicompost 15t/ha	86.00	54.97	8.33	5.83	8.40
FYM 20t/ha	79.67	63.23	9.33	6.83	9.30
FYM 15t/ha	72.67	40.43	7.00	4.20	6.23
Poultry Manure 20t/ha	87.00	67.97	10.00	7.63	10.27
Poultry Manure 15t/ha	64.67	49.97	7.33	5.23	7.53
Vermicompost +GA <sub>3</sub> 20t+100ppm	90.00	101.83	16.33	10.53	12.73
FYM +GA <sub>3</sub> 20t+100ppm	83.33	85.90	13.33	8.70	11.70
Poultry Manure+ GA <sub>3</sub> 20t+100ppm	75.00	93.47	14.00	9.43	12.20
CD at 5 %	2.57	3.54	1.55	0.65	0.47

**Note:** Vermicompost (VC); Farm Yard Manure (FYM); Poultry Manure (PM)

**Table –2. Effect of Organic Manure and Plant Growth Regulators on Corm character of Gladiolus Cv. Nova Lux.**

Treatment	Characters				
	Diameter ofcorm (cm)	Weight of corm per plant(m)	No. of corms per plot	No. of cormels per plot	Corm yield per plot(Kg)
Control	4.77	61.67	6.33	21.67	0.40
Vermicompost 20t/ha	6.67	117.83	10.33	40.00	0.82
Vermicompost 15t/ha	5.80	87.50	8.33	29.33	0.62
FYM 20t/ha	6.27	97.17	9.33	33.67	0.71
FYM 15t/ha	5.10	70.83	7.33	23.00	0.47
Poultry Manure 20t/ha	6.50	106.17	9.67	36.67	0.76
Poultry Manure 15t/ha	5.53	76.67	7.67	25.00	0.59
Vermicompost +GA <sub>3</sub> 20t+100ppm	8.03	159.17	14.00	47.67	1.09
FYM +GA <sub>3</sub> 20t+100ppm	6.97	140.00	11.33	43.67	0.87
Poultry Manure+ GA <sub>3</sub> 20t+100ppm	7.60	145.83	11.67	46.33	0.95
CD at 5 %	0.35	7.66	1.94	3.083	0.07

**Note:** Vermicompost (VC); Farm Yard Manure (FYM); Poultry Manure (PM)



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