

## EFFECT OF ORGANIC AND INORGANIC FERTILIZERS ON FLOWERING AND VASELIFE OF GLADIOLUS

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**Abstract:** An experiment was carried out during the year 2004-05 on gladiolus on experimental field of department of Horticulture, Vasant Rao Naik Marathwada Agriculture University, Parbhani. The result of experiment revealed flowering parameter like length on spike (cm), length on florets (cm), weight of spike, vase life on spikes (days) were significantly maximum in treatment of T<sub>6</sub> (50% RDF + 50% vermin compost) followed by treatment T<sub>9</sub> (50% RDF + 50% Bio meal).

**Key word:** RDF, Organic, inorganic, flowering, vase life, gladiolus.

**Introduction:** Floriculture in an intensive branch of horticulture deals with cultivation on various flowers, ornamental trees, shrubs, climbers, seed production and post harvest management. In India commercial production of cut flowers such as rose, orchid, gladiolus, gerbera etc. has also found becoming very popular in our country gladiolus occupying an area on 500 ha. In U.P., Himachal Pradesh, Maharashtra, Karnataka etc. In Maharashtra cultivation is done in rainy and winter season for obtaining good quality cut flowers. However, the quality on flower produced and vase life were less which needs to be increased by adopting improved horticultural techniques.

Organic and inorganic fertilizers play an important role in vase life and quality on flower production. Hence the present investigation was undertaken to study the effect of organic and inorganic fertilizers on flowering and vase life on gladiolus cv. H.B.PITT.

**Materials And Methods:** The experiment was conducted on experimental field at department of Horticulture, V.N.M.K.V. Parbhani during the year 2004-05 on gladiolus. The experiment was laid out in randomized block design with ten different treatments and three replications. The experiment consist on ten treatments i.e.

T<sub>1</sub> (100% RDF), T<sub>2</sub> (75% RDF + 25% FYM), T<sub>3</sub> (75% RDF + 25% vermi compost), T<sub>4</sub> (25% RDF + 75% FYM), T<sub>5</sub> (75% RDF + 25% Vermicompost), T<sub>6</sub> (50% RDF + 50% Vermicompost), T<sub>7</sub> (25% RDF + 75% Vermicompost), T<sub>8</sub> (75% RDF + 25% Biomcal), T<sub>9</sub> (50% RDF + 50% Biomcal), T<sub>10</sub> (25% RDF + 75% Biomcal). Biomeal contains mycelium and bacteria which is a by product produced during preparation of antibiotics. Random sampling technique was adopted and fine plants were selected from each treatment and mean was taken. Observations on days were recorded emergence on first spike, days required for emergence on first spike, days required for emergence on first floret, length of spike (cm), number of florets per spike, girth of spike (cm), weight of spike (g), vase life of flower (days) were recorded.

**Result And Discussion:** The results obtained from the present investigation are summarized below.

**Flowering parameters:**

**Day required for emergence of spike:** It is clear from Table 1 that treatment T<sub>6</sub> (50% RDF + 50% vermicompost), requires less number of days (67.97) for emergence of first spike followed by treatment T<sub>9</sub> (50% RDF + 50% Biomcal). The probable reason for early emergence of spike may be that the hormones and organic acid secreted by organic manures during decomposition which enhanced early emergence on spike. This finding is in agreement with the results reported by Kumaran et al (1998). The results revealed that, tomato plant supplied with organic form of fertilizers show earliness, ascertained by days taken for 50% flowering.

**Days for first floret opening from appearance on spike:** From Table 1 it is clear that less days for first floret opening (6.53) was recorded under treatment T<sub>6</sub> (50% RDF + 50% vermicompost) followed by treatment T<sub>9</sub> (50% RDF + 50% Biomcal) and T<sub>3</sub> (50% RDF + 50% FYM). This finding is in agreement with the results reported by Gharat (2004). They revealed that minimum days required for flower bud initiation, 50% flowering was recorded the treatment receiving RDF + Vermicompost that any other treatment taken under study.

**Number of florets for spike:** Data presented in table 1 indicated that number of florets for spike (13.4) were observed under treatment T<sub>6</sub> (50% RDF + 50% vermicompost) followed by treatment T<sub>9</sub> (50% RDF + 50% Biomcal) and T<sub>3</sub> (50% RDF + 50% FYM). Similar findings were observed by Nethra et al (1999). Observed highest number of flowers per plant (34.33) with application of 10 t Vermicompost + 100% NPK in aster.

**Length of spike (cm):** The treatment T<sub>6</sub> registered maximum spike length (80.28 cm) followed by T<sub>9</sub> (78.51 cm) and T<sub>3</sub> (77.36 cm). The results reported regarding the length of spike indicated that there was increase in spike length due to application of organic + inorganic fertilizers as compared to

100%RDF (chemical fertilizers).

**Length of florets (cm):** Data presented in Table 1 showed that maximum floret length was obtained in treatment T6 (8.6 cm) with the application of 50% RDF + 50% vermicompost. The results in present study are supported by findings of various research workers viz. Gharat (2004) in aster, Donge (2001) in chilli and Rajamani and Sundaran (1997) in rose.

**Weight of the spike per plot, per hectare:** It is evident from data recorded in Table 1 that the maximum weight of spike (555.65 gm) was observed in Treatment T6 (50% RDF + 5 % vermicompost) followed by T9 (50% RDF + 50% Bioneal). Maximum (24.699) weight on spike per hectare was recorded in treatment T6 (50% RDF + 5 % vermicompost).

**Vase life of spikes (Days):** The data recorded in Table 1 revealed that treatment T6 (50% RDF + 5 % vermicompost) exhibited maximum vaselife of spike (8.50 days) and found at per with treatment T7 (8.32 days), T<sub>4</sub> (8.17) and T<sub>3</sub> (7.81 days). There was improvement in the soil pH towards the neutrality after the application of vermicompost. Hence the vaselife of flower in treatment RDG + vermicompost at 50% and 75% might be increased. The application of vermicompost affects on soil reaction by releasing organic acid and neutralizing the soil under alkaline condition. This causes maximum availability of plant nutrients particularly nitrogen which directly affects. The increase in vaselife of cut flowers of aster (Nethra et al (1999).

Table 1 : Effect of organic and inorganic fertilizers on flowering vase like of gladiolus

Treatment	Days required for emergence of spike	Days for first floret opening from appearance of spike	Number of florets for spike	Length of spike (m)	Length florets	Weight of spike per plat	Weight of spike per hectare	Vaselife of spike (days)
T <sub>1</sub>	79.0	8.33	9.8	75.23	7.8	340.98	15.15	6.40
T <sub>2</sub>	78.80	8.20	10.0	75.33	7.9	342.63	15.22	7.09
T <sub>3</sub>	70.00	7.40	12.7	77.36	8.2	526.25	23.38	7.81
T <sub>4</sub>	82.09	8.87	8.2	72.50	7.1	256.75	11.41	8.17
T <sub>5</sub>	75.6	7.93	11.7	77.35	8.1	456.67	20.14	7.32
T <sub>6</sub>	67.46	6.53	13.4	80.28	8.6	555.65	24.69	8.50
T <sub>7</sub>	80.9	8.47	8.6	75.15	7.6	321.75	14.29	8.32
T <sub>8</sub>	75.9	8.00	10.1	76.35	8.0	430.08	19.14	6.90
T <sub>9</sub>	69.1	7.13	12.9	78.51	8.3	531.75	23.63	7.60
T <sub>10</sub>	81.3	8.69	8.2	74.20	7.3	262.15	11.64	8.01
S.E.	0.014	0.22	0.2	0.08	0.01	0.27	0.015	0.28
CD at 5%	0.04	0.63	0.6	0.25	0.02	0.8	0.04	0.84

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