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EFFECT OF PLANTING DATES AND CULTIVARS ON THE INCIDENCE OF CORM ROT IN GLADIOLUS *(GLADIOLUS GRANDIFLORUS* L.)

Gladiolus is one of the most beautiful and fascinating cut flowers grown in many parts of the world. It is becoming more and more popular in India and its cultivation is on the increase recently. However, conn rot or *Fusarium* wilt caused by *Fusarium oxysporum* f. sp. *gladioli* (Massey) Synder and Hansen is posing a grave threat to the commercial cultivation of gladiolus. This disease was reported as early as 1969 and is known to assume epidemic proportions (Singh, 1969).

Corm rot is one of the most destructive diseases of gladiolus, which causes wilting and death of the above ground portions of the plant and rotting of the corms and cormels. Hot and humid climatic conditions are found to favour high incidence of this disease. This paper presents the results of an experiment on the effect of planting dates and cultivars on the degree of incidence of corm rot in gladiolus.

The experiment was conducted at the College of Agriculture, Vellayani during 1992-93. Corms of three cultivars of gladiolus, i.e., Her Majesty, Vinks Glory and Oscar were planted on six planting dates at monthly intervals from mid August, 1992 to mid January 1993. This experiment was laid out in a factorial randomised block design with three replications. The usual cultural operations were followed uniformly for all the treatments till the harvesting of corms. The number of plants effected with corm rot per plot was observed and recorded. The data were subjected to square root transformation before analysis of variance.

The study revealed that the differences in planting dates had no significant influence on the degree of incidence of corm rot in gladiolus (Table 1). However, the correlation studies indicated significant negative correlation between weather parameters like relative humidity and number of rainy days and the weight of corms obtained (Table 2). Therefore, it can safely assumed that wet and humid conditions are more conducive for the high degree of incidence of conn rot rather than dry climate.

Table 1. Effect of different planting dates and cultivars on number of affected plants per plot

Planting dates	Her Majesty	Vinks Glory	Oscar	Mean
Mid August	8.67 (3.11)	0.67 (1.24)	1.33 (1.52)	3.56 (1.97)
Mid September	4.00 (2.02)	0.00 (1.00)	1.33 (1-52)	1.78 (1.51)
Mid October	3.00 (2.00)	1.67 (1.55)	2.33 (1.82)	2.33 (1.79)
Mid November	10.00 (3.31)	0.67 (1.28)	2.33 (1.80)	4.33 (2.13)
Mid December	5.67 (2.55)	1.67 (1.63)	1.67 (1.63)	3.00 (1.93)
Mid January	7.67 (2.94)	2.00 (1.72)	2.33 (1.79)	4.00 (2.15)
Mean	6.50 (2.65)	1.11 (1.40)	1.89 (1.68)	-

CD (0.05)
Planting dates : NS; Cultivars : 0.287; Interaction : 0.704
Note: Figures in parentheses denote transformed [$\sqrt{(x+1)}$] values

Table 2. Correlation between weather parameters and corm weight

	Weight of corm
Relative humidity	-0.9115
Total rainfall	-0.5809
No. of rainy days	-0.9024*

*Significant at 5 per cent level

Cultivars exerted significant influence on the degree of incidence of corm rot. Vinks Glory registered the least degree of incidence among the three varieties. Her Majesty exhibited the maximum susceptibility rendering it unsuitable for commercial cultivation under local conditions. Interaction effect between planting dates and cultivars was also found to be

significant. Experiments on the evaluation of gladiolus cultivars and hybrids for resistance of *Fusarium* wilt by Chandra *et al.* (1985) also revealed that the different cultivars varied significantly in their susceptibility. About 50 cultivars of gladiolus were tested by Kaur *el al.* (1989) and it was found that susceptibility of cultivars varied from highly susceptible to tolerant, though none was found to be totally resistant.

College of Agriculture
Vellayani, Trivandrum 695 522, India

S. **Suneetha**
K. Vasanthakumar

REFERENCES

Chandra, K. J., Negi, S. S., Raghava, S. P. S. and Sharma, T. V. R. S. 1985. Evaluation of gladiolus cultivars and hybrids for resistance to *Fusarium oxysporum* f. sp. *gladioli. Indian J. Hort.* 42 : 304-305

Kaur, S., Arora, J. S. and Khanna, K. 1989. *Fusarium* wilt is a limiting factors in commercial cultivation of gladiolus. *Indian Hort.* 36 : 21-22

Singh, R. N. 1969. A vascular disease of gladiolus caused by *Fusarium oxysporum* f. *gladioli* in India. *Indian Phytopath. 22* : 402-403