Research Note :

Influence of different carbon compounds on vegetative growth and sporulation of *Colletotrichum gloeosporioides* causing anthracnose of anthurium

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SUMMARY

***Colletotrichum gloeosporioides* was found to cause anthracnose of Anthurium. Studies on various carbon sources revealed that *C. gloeosporioides* produced maximum vegetative growth on dextrose followed by starch and lactose. Vegetative growth on remaining carbon sources was in the order of maltose, fructose, sorbitol, mannitol, citric acid and control. Profuse sporulation was recorded in the media in presence of starch and dextrose. Mannitol, sorbitol, lactose and fructose supported moderate sporulation. Poor sporulation was observed on maltose and citric acid sources.**

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Anthurium (*Anthurium* sp.) is a popular modern cut-flower having export potential. Anthurium is a tropical plant of great beauty and grown either for the showy cut flowers or for unusually attractive foliage. It is very popular with flower arranger because of bold effect and lasting qualities of cut flowers. These contribute to the elegance and attractiveness which are the prerequisites for a quality

In Maharashtra, mostly it is cultivated near urban cities like Mumbai and Pune as there is increasing demand for cut-flowers.

This wonder crop of 20th century is affected by a number of diseases incited by fungi, bacteria and viruses (Bhatt and Desai, 1989; Dilbar, 1992). It was observed that due to anthracnose disease, quality and quantity of the leaves and flowers are reduced, leading to economic losses. During the disease survey in October-November, 1995 *Colletotrichum gloeosporiodes* was observed to cause the anthracnose disease on the leaves and spikes of Anthurium at the Department of Horticulture, College of Agriculture, Dapoli.

Looking to the destructive nature of the pathogen and importance of the disease, systematic investigation was carried out on the effect of carbon sources on the growth and sporulation of the pathogen .

In order to study the effect of various carbon sources on the growth and sporulation, the amount of carbon present in fifty grams of sucrose in the selected basal medium was replaced with an equivalent amount of other carbon compounds. Richard's broth of 100 ml. quantity was prepared by replacing sucrose with each carbon source. Twenty five ml. medium was distributed in each 100 ml. conical flask. Four replications per treatment were maintained. One additional treatment was kept as control without adding any carbon source. These flasks after sterilization were inoculated with the test fungus of 10 days old culture and incubated at room temperature (27 $\pm$ 1^{0}C) for 10 days.

Of all the elements essential for growth of fungi, carbon occupies an unique position. It forms almost 50 per cent of the total dry weight of the fungal cells. Fungi differ in their ability to utilize various carbon compounds for growth. It was considered desirable to work out the

Table 1 : Effect of various carbon sources on growth and sporulation of *C. gloeosporiodes*.

Sr. No.	Carbon sources	Average dry weight of mycelium (mg)	Sporulation
1.	Dextrose	332.5	Profuse
2.	Mannitol	132.5	Moderate
3.	Sorbitol	143.0	Moderate
4.	Fructose	216.5	Moderate
5.	Maltose	226.0	Poor
6.	Lactose	251.0	Moderate
7.	Citric acid	94.0	Poor
8.	Starch	285.5	Profuse
9.	Control	43.0	Nil
S.E. ±		16.51	
C.D. (P=0.05)		48.21	

effect of different carbon compounds on growth of *Colletotrichum gloeosporiodes*. In the present investigation, the test fungus was grown on eight different carbon compounds. Basal medium without carbon source served as control. The data obtained on the effect of different carbon sources on vegetative growth and sporulation of the test fungus are presented in Table 1. From present investigation, it is revealed that the maximum vegetative growth was obtained in dextrose which was closeiy followed by starch and lactose. Vegetative growth on remaining carbon sources was in the order of maltose, fructose, sorbitol, mannitol, citric acid and control (without carbon).

The profuse sporulation was recorded in the media in presence of starch and dextrose. Mannitol, sorbitol, lactose and fructose supported moderate sporulation. Poor sporulation was observed on maltose and citric acid. The test fungus could not sporulate in the treatment where 'C' was deleted from the medium indicating that, 'C' is essential for sporulation of *Colletotrichum gloeosporiodes*.

These results are in conformity with the findings of Prasad (1965), Roy *et al*. (1975), Rajak (1983), Mehendale (1994) and Korade (1995).

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