



Effect of waste biomass (WBM) of some common vegetable plants on spore germination, growth and sporulation of *Curvularia lunata* (Wakker) Boedijn.

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ABSTRACT

Vegetables are essential for health, it contain Carbohydrates, protein, lipids, fiber, potassium, folate, vitamins, minerals phytochemical etc. Which support immune function, heart health, digestion and provide essential antioxidants. The present research paper work for the study of vegetables produce a huge waste biomass (WBM). The waste biomass of the vegetable plants may be utilized as the source of fungicides. On utilization of waste biomass (WBM) of plants and spore suspension of *Curvularia lunata* (Wakker) Boedijn. in relation to spore germination, growth and sporulation have been studied.

Keywords: *Curvularia lunata* (Wakker) Boedijn., Spore suspension, Spore germination, Sporulation, Waste biomass. (WBM).

INTRODUCTION

Vegetables are edible parts of plants that are consumed by humans as food. Vegetables are good sources of minerals, especially calcium iron, and vitamins, principally A and C. When vegetables are included in the diet, there is found to be a reduction in the incidence of cancer, stroke, cardiovascular disease, and other chronic ailments. Leafy greens like spinach and kale are abundant in vitamin K and antioxidants, promoting cardiovascular health and reducing inflammation. Cruciferous vegetables such as broccoli, cauliflower and Brussels sprouts contain sulforaphane and indole-3-carbinol, compounds known for their cancer-preventive properties. (Behera *et al.* 2024). All vegetables benefit from proper post-harvest care. A large proportion of vegetables and perishable foods are lost after harvest during the storage period. The main causes of loss include spoilage caused by moisture, moulds, micro-organisms and vermin. Most of the fungi was decay and rots (Kunte and Yawalkar 1991). The vegetables associated with the fungi found to be useless the vegetables their seeds associated with the fungi found to be unable to germinate. The fungi like *Aspergillus*, *Fusarium*, *Penicillium* and *Curvularia* were found to be associated on vegetables and their seeds. *Curvularia lunata* (Wakker) Boedijn were found to be common and dominant on test vegetable. Seed mycoflora of Methi (Iqbal *et al.*,1973). The present studies the Utilization of WBM of vegetable for spore germination, growth & sporulation of vegetable mycoflora was studied.

The test vegetables by using different methods and conditions. The important conclusion is drawn and reported in table.

MATERIALS AND METHODS

Composition of Media, Reagents used During the Present Studies

1. Potato Dextrose Agar (PDA)

Potato (peeled)-200 gm
Dextrose-20 gm
Agar-20 gm
Distilled water-1000 ml

2. Glucose Nitrate Medium (GN Medium)

Glucose 10 gm
KNO₃- 2.5 gm
KH₂PO₄- 1gm
MgSO₄.7H₂O- 0.5 gm
Distilled water- 1000 ml

During the present studies borosil glass conical flasks containing 25 ml of liquid GN medium supplemented separately with 1 gm of powder of WBM of common vegetable plants like Carrot (*Daucus carota* L.), Radish (*Raphanus sativus* L.), Onion (*Allium cepa* L.), Methi (*Trigonella foenum-graecum* L.), Palak (*Spinacia oleracea* L.), Cabbage (*Brassica oleracea* var. *capitata* L.), Cauliflower (*Brassica oleracea* var. *botrytis* L.), Tomato (*Lycopersicon esculentum* L.) and Bhendi (*Abelmoschus esculentus* L.) were autoclaved at 15 lbs pressure for 15 minutes. On automatically cooling, the flasks were inoculated with 1 ml of spore suspension of *Curvularia lunata* (Wakker) Boedijn. prepared from seven days old cultures grown on PDA slants. The flasks were incubated at room temperature. The spore germination of *Curvularia lunata* (Wakker) Boedijn. was studied after 24 hours of incubation period. The growth in terms of dry mycelial weight and sporulation of the fungus was studied after seven days of incubation.

RESULTS

It is clear from the results presented in Table - 1 that the WBM of all the test vegetable plants was found to be inhibitory for spore germination, growth and sporulation of *Curvularia lunata* (Wakker) Boedijn. It is also evident from the results that the test WBM of *Brassica oleracea* var. *capitata* L. was found to be more inhibitory for the spore germination (20%), growth (5 mg) and sporulation (+) of *Curvularia lunata* (Wakker) Boedijn. whereas the WBM of *Raphanus sativus* L. was

found to be very less inhibitory for the same as compared to the WBM of other test Vegetable plants.

CONCLUSION

The WBM of all the test vegetables was found to be inhibitory for the incidence of seed mycoflora in more or less degree. The WBM of all the test vegetable plants was found to be inhibitory for spore germination, growth and sporulation of *Curvularia lunata* (Wakker) Boedijn. The test WBM of *Brassica oleracea* var. *capitata* L. was found to be more inhibitory for the spore germination (20%), growth (05 mg) and sporulation (+) of *Curvularia lunata* (Wakker) Boedijn.

Conflict of interest

The authors declare no competing interests.

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