IN VITRO ANTIFUNGAL ACTIVITY OF PLANT EXTRACTS
ON ALTERNARIA ALTERNATA (Fr) KEISSLER, A
POTENTIAL PATHOGEN OF ONION

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Abstract. Effect of fifteen plant extract on Alternaria alternata (Fr) Keissler, a potential pathogen isolated from onion (Allium cepa L.) was determined in vitro. Plant extracts at the 50 and 100 percentage concentrations were mixed with growth medium and percentage growth was observed. In general all the plant extracts were found to be effective individually against Alternaria alternata as compared to control. Annona Squamosa L. leaf extract gave 91.13% and 68.35% at 50% and 100% concentration extract respectively and Withania somnifera L. gave less effect 54.09% and 36.60% when compared to other plant extracts. Mixture of three plant extract (Cassia, Argemone, Parthenium) shows good results as compared to the individual plant extracts.

Keywords: Plant extracts, Alternaria alternata, Allium cepa L.

1. Introduction

Onion (Allium cepa L.) is one of the important vegetable crop grown in Maharashtra and number of diseases has been recorded on this crop in Maharashtra. Late blight disease of onion is caused by Alternaria alternata is the most important disease of onion in Maharashtra. This disease is severe in all most all Onion growing areas of Maharashtra. In view of the commercial importance of the crop and losses caused by the disease in detail, present study deals with the effect of different biopesticides has been used to control the late blight disease of onion other than fungicides.

2. Material And Methods

In present study pure isolated Altnaria alternata strain was used to see the effect of plant extract on Alternaria alternata using food poisoned technique. (Nene, 1971). Czapek –Dox medium was added to requisite quantity of the plant extract so as to get a certain final concentration. Eighth day old culture of the Alternaria alternata was inoculated at the center of the petriplate and linear diameter of the colony was measured at different intervals.

3. Observation & Discussion
A total of 15 plant extracts were used in the present study, plant extracts at the 50 and 100% concentrations were mixed with growth medium and percentage growth were observed, on 12th day after incubation period. (Table-1) Out of 15 plant extracts Adhatoda vasica extract gave 89.02 and 69.51% growth while Annona squamosa at 50% (91.13%) and (68.35%) growth at 100% extract Argemone mexicana extract gave 86.07% and (65.82%) growth at 50 and 100% concentration respectively. The mixture of plant extract like Calatropis procera and Callistemon rigidus gave more or less same growth observed at 50 and 100%. While in Catharanthus roseus (65.38%) and (50.51%) of growth was observed at 50 and 100% respectively. In Cassia balsamia at 50% extract (74.68%) and at 100% extract (46.83%) was observed. The mixture of Nicotian tobacum, Ocimum sanctum, Parthenium histeriforus showed (74.28%) growth at 50% and (57.14%) growth at 100% plant extract. Withania somnifera showed good 54.09% and 36.06% growth at 50 and 100% pant extract respectively. The mixture of three plant extracts like (Cassia balsamia, Argemone mexicana, Parthenium histerifora) showed good results as compared to individual plant extracts.

Table 1. The effect of plant extracts on the growth of Alternaria alternata on 12th day incubation period.

<table>
<thead>
<tr>
<th>Name of the plant (extract)</th>
<th>Percentage growth</th>
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<tbody>
<tr>
<td></td>
<td>50%</td>
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<tr>
<td>Adhatoda vasica Nees,</td>
<td>89.02</td>
</tr>
<tr>
<td>Annona squamosa L.</td>
<td>91.13</td>
</tr>
<tr>
<td>Argemone mexicana L.</td>
<td>86.07</td>
</tr>
<tr>
<td>Azadirachta indica A.Juss A.Juss.</td>
<td>75.67</td>
</tr>
<tr>
<td>Calatropics procera(Ait) R.Br</td>
<td>88.88</td>
</tr>
<tr>
<td>Catharanthus roseus (L.) G.Don</td>
<td>65.38</td>
</tr>
<tr>
<td>Callistemon rigidus R.BR.</td>
<td>88.60</td>
</tr>
<tr>
<td>Cassia balsamia L.</td>
<td>74.68</td>
</tr>
<tr>
<td>Derris indica Bennett.</td>
<td>84.14</td>
</tr>
<tr>
<td>Ipomia fistula Mart.ex. Choisy</td>
<td>79.96</td>
</tr>
<tr>
<td>Nicotiana tobacum.</td>
<td>74.28</td>
</tr>
</tbody>
</table>
### Oscimum sanctum L. | 71.42 | 64.93
---|---|---
### Parthenium histeriforus L. | 86.95 | 77.17
---|---|---
### Mixture of Cassia, Argemone & Parthenium | 69.31 | 36.06
---|---|---
### Withania somnifera | 54.09 | 36.06
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**Fig 1:** Linear Growth of Alternaria alternata against Biopesticide (Withania Somnifera)

**Fig 2:** Linear Growth of Alternaria alternate against Biopesticide (Argemone, Parthenium, Cassia Sp.)

### 4. References

