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Antifungal Activity of Plant Extract of *Acacia Nilotica* (L) Del. On Seed Mycoflora, Germination and Vigour Index of Bengal Gram

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Abstract

A study was carried to assess antifungal activity of leaf extract of Acacia nilotica (L) Del. On seed mycoflora, germination and vigour index of Bengal gram. Bengal gram is major pulse crop grown in marathwada region. The seeds of Bengal gram are associated with many fungi like Aspergillus flavus, Fusarium moniliformae, Penicillium species, Rhizopus species etc. The leaf extract of acacia nilotica is most effective showed more fungitoxic property. As conc. of Acacia nilotica increases, decreases the seed mycoflora, germination percentage increases, vigour index increases as compared as compared to control.

Keywords: antifungal activity, *Acacia nilotica*, Bengal gram

Introduction

Pulse crop constitute a very important daily diet. The seeds of legumes are found to be mostly infected with variety of mycoflora. These fungi deteriorate the seeds and seed contents. The fungi associated with seeds brings about several undesirable changes making them unfit for the consumption (Bhikane,1988). The seeds of Bengal gram are associated with many fungi. Usually the fungal diseases of plants are controlled by chemical fungicides the seeds shows effect on contents and it is hazardous to seed health. During the present investigation the antifungal activity of leaf extract of *Acacia nilotica* against seed mycoflora isolated from the Bengal gram seeds.

Material And Methods

1. Isolation of seed mycoflora: The Bengal gram seed mycoflora were isolated by using Agar plate method.

2. Assessment of seed mycoflora: The seed borne fungi of Bengal gram seeds were detected by Agar plate and blotter paper tests recommended by ISTA (1966).

3. Selection of medicinal plants: Medicinal plant i.e. leaf extract of *Acacia nilotica* have been used as biological control agents to control plant pathogenic fungi like *Fusarium moniliformae, Penicillium, Rhizopus* etc.

The medicinal plant *Acacia nilotica* collected and identified using the flora of Marathwada region written by V.M. Naik.

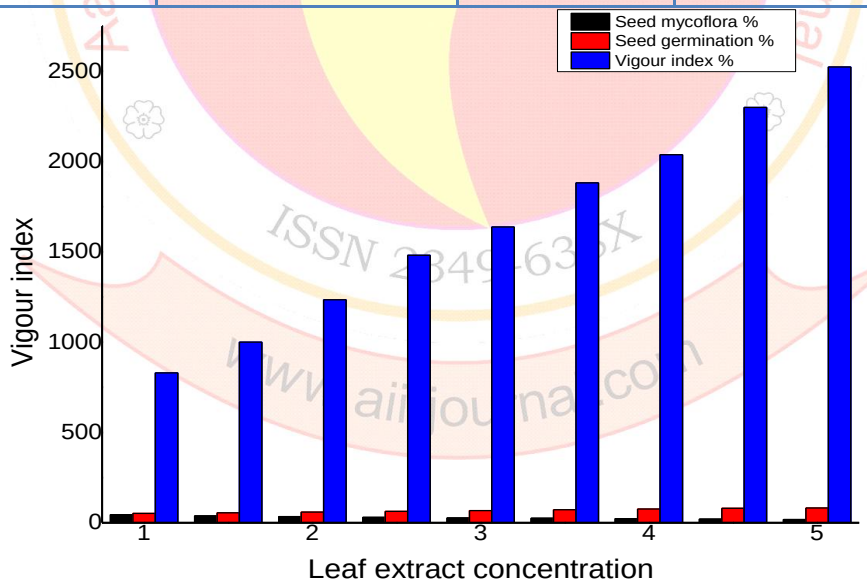
4. Seed treatment: During present investigation Acacia nilotica was selected. These plants were sterilized with 1% $HgCl_2$, washed repeatedly with sterile distilled water for three times. The 10 gms of leaves were added in 10 ml distilled water. Separately for each plant extract and and filtered through musclin cloth and centrifuged for 15 minutes at 3000 rpm. After that clean supernatant solution was removed in vial tube for further treatment of pathogens. Antifungal activity of leaf extract was tested by poisoned food technique method (Biswas Subrata *et al* 1995).

Result And Discussion

Results in table no.1 indicates that Acacia nilotica (L)Del. Found to be effective in controlling seed mycoflora and increasing the percent of seed germination and vigour index at the rate of 5% concentration. Seed mycoflora seems to be increase at this concentration which was 18% has compared with control having 81.00%. at the same time it was noticed that the seed germination percentage and vigour index was remarkably increase up to 82% and 25.24 % respectively. In the control it was 35% and 77.8% respectively as shown in Table no.1 and Graph 1.

Table no. 1: Effect of *Acacia nilotica* (L.)Del. on seed mycoflora, germination and vigour index of Bengal gram

Leaf extract concentration %	Seed mycoflora %	Seed germination %	Vigour index %
1.0	45	52	830
1.5	38	55	1000
2.0	34	59	1235
2.5	30	63	1481
3.0	27	67	1638
3.5	25	72	1882
4.0	23	76	2038
4.5	20	80	2300
5.0	18	82	2524
Control	81.00	35.00	778
S.E.+	5.44	4.34	184.08
C.D. at 5%	12.29	9.80	416.02



Graph.1. Showing Effect of *Acacia nilotica* (L.) Del. on seed mycoflora, germination and vigour index of Bengal gram

Conclusion

The leaf extract of *Acacia nilotica* showed the significant result in controlling seed borne mycofora in Bengal gram. So the seed treatment by biofungicide should be widely explored to the country.

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