

## Effect Of *Ocimum Sanctum* On Seed Mycoflora, Seed Germination And Vigour Index Of Green Gram

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### Abstract –

The effect of a leaf extract of *Ocimum sanctum* containing the chemical compound on the seed mycoflora, seed germination and subsequent seedling vigour of pathogen-infested Green Gram seeds, was tested. Plants make many chemical compounds that have biological functions, including defense against seed-borne fungi. The effect of *Ocimum santctum* on seed mycoflora, seed germination and vigour index of Green gram was observed. It can be concluded that *Ocimum sanctum* at a 10% concentration decreases the seed mycoflora up to 5.00%. At this concentration, the percentages of seed germination and vigour index were found to be increased up to 88.00% and 800, respectively. On the other hand, in the control seed mycoflora, seed germination and vigour index were 70%, 55.00% and 150 respectively.

**Key wards** – Medicinal plant, *Ocimum sanctum* and Green gram (Cv. BPMR- 145)

### Introduction –

Mung bean (*Vigna radiate*) is also known as green gram. It is one of the important pulse crops in India. Green gram is high nutritional value, a short duration, adaptability to all seasons, and suitability for various cropping systems. Green gram is highly nutritious, containing 24 percent of protein, 1.3 percent fat, 56.6 percent carbohydrates and 3 percent dietary fiber. It is rich in minerals, having 140 mg of calcium, 8.4 mg iron and 280 mg phosphorus. In order to overcome such problems, alternative methods that are safe, eco-friendly and economically feasible are used for pathogen control. One such control measure is the use of botanicals or plant extracts that may be toxic to a specific seed-borne pathogen (Dwivedi and Shukla 1989). Botanicals are easily available, cost-effective, or economically achievable and are easy to prepare, even farmers can prepare them easily. (Suleiman and Omafè 2013). Hence, botanicals (plant extracts) obtained from plants that are active against plant pathogens are used for the present research work

### Materials and Methods –

During the present study, *Ocimum sanctum* L. was selected. These plants were surface sterilized with 0.1% HgCl<sub>2</sub> and washed repeatedly with sterile distilled water three times. The different concentrations of Medicinal plants prepared for seed treatment ranged from 1 to 10%. The effect of plant extracts on seed mycoflora, seed germination and vigour index was recorded. The identification of plants was confirmed using the flora of Marathwada (Naik, 2012). The root and shoot length (cm) of the green gram of the selected 10 normal seedlings from each blotter paper were measured, and the seedling vigour index was calculated.

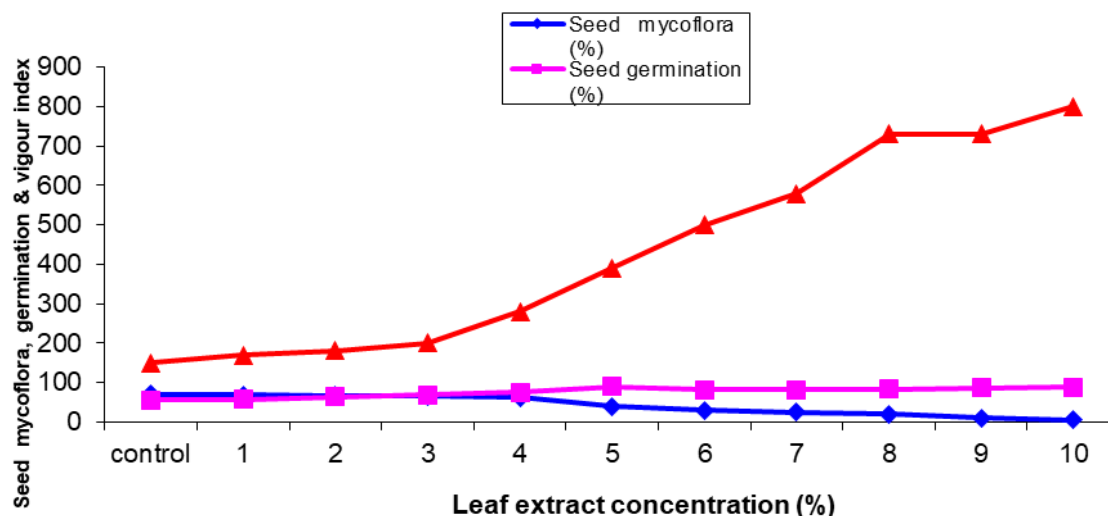
### Seedling vigour index (SVI)=

[Mean root length (cm) + mean shoot length (cm)] X percentage germination (%)

### Result and Discussion -

**Table 1 : Effect of *Ocimum sanctum* L. on seed mycoflora, seed germination and vigour index of Green gram (Cv. BPMR -145).**

Leaf extract Conc. (%)	Seed mycoflora (%)	Seed germination (%)	Vigour index
0.0 (Control)	70	55	150
1.0	68	57	169
2.0	67	63	180
3.0	65	68	200
4.0	62	75	280
5.0	40	89	390
6.0	30	81	500
7.0	25	82	580
8.0	20	84	730
9.0	10	86	730
10.0	05	88	800
S.E. ±	7.34	3.56	64.22
C.D. at 5%	16.14	7.93	143.21



**Fig.1. Effect of *Ocimum sanctum* L. on seed mycoflora, seed germination and vigour index of Green gram Cv. BPMR -145.**

From the Table 1, it can be concluded that *Ocimum sanctum* at 10% concentration decreases the seed mycoflora up to 5.00.00%. At this concentration, the percentage of seed germination and vigour index were found to be increased by 88.00% and 800%, respectively. On the other hand, in control, seed mycoflora, seed germination and vigour index were 70%, 55.00% and 150 respectively.

#### Discussion:

Barnett and Barry (1972) published a book on the illustrated Genera of Imperfect fungi, Abdul Baki and Anderson (1973) studied vigour determination in soybean seed by multiple criteria. Neergaard, P. (1977), published a book on Seed Pathology. Dwivedi and Shukla (1989) observed the effect of seed treatment on seed mycoflora and germination in *Cassia hirsute*. Abdul (2006) observed Efficacy of some plant extracts in controlling seed-borne fungal infections of mustard. Parekh and Chanda (2007) screened *in Vitro* antimicrobial activity and phytochemical analysis of some Indian medicinal plants. Talgo et al. (2010) observed seed-borne fungi on *Abies* spp.) Damale and Raut (2011) studied the efficacy of chemicals and bioagents on Mungbean seed germination, vigour index and association of fungi in storage. Naik (2012) published a book on Common Indian Medicinal Plants. Suleiman and Omafè (2013) studied the activity of three medicinal plants on fungi isolated from stored maize seeds. Rajendra et al. (2015) studied the effect of Seed Mycoflora on the seed germination of some Medicinal Plants.

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