

UTILIZATION OF MEDICINAL PLANTS TO CONTROL SEED BORNE PATHOGENS OF SELECTED LEGUMES SEEDS

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ABSTRACTS –

The different leaf extract were used like *Azadirachta indica* A. Juss., *Ocimum sanctum* L., *Polyalthia longifolia* (Sonner.) Thw, *Tridax procumbens* L., *Catharanthus roseus* (L.) G. Don., *Vitex negundo* L. Among these *Azadirachta indica* A. Juss. was more effective than other plants. All these plant extracts showed inhibitory effect on linear growth of dominant fungi.

Keywords: - Medicinal plants, *Fusarium oxysporum*, *Polyalthia longifolia*, *Tridax procumbens*, *Vitex negundo*, *Catharanthus roseus*, extracts

INTRODUCTION:

The Legumes or pulses belong to the family Leguminosae. The legumes are next in importance to cereals as source human food. They contain more protein materials than any other vegetable product. The pulses form an important item in India where the majority of the population consists of vegetarian carbohydrates and fats are also present in the legumes. The proteins occur as aleurone grains in the same cells with the starch grains. The use of traditional medicine and medicinal plants in most developing countries, as a normative basis for the maintenance of good health, has been widely observed [1]. Furthermore, an increasing reliance on the use of medicinal plants in the industrialised societies has been traced to the extraction and development of several drugs and chemotherapeutics from these plants as well as from traditionally used rural herbal remedies[2].

The high protein content is correlated with the presence nodules containing

nitrogen fixing bacteria. These bacteria are able to utilize free atmospheric nitrogen and convert it into nitrates, thus augmenting the supply of nitrogenous material available for the plant. The pulses are also important from the point of view of animal nutrition, to which they contribute by their seeds, hulls and the green parts. The legumes have been cultivated and used for food for centuries all over the world. The pulses figure prominently in crop rotation and in the mixed cropping commonly practiced in Indian agriculture. Of this about 37% is occupied by gram and 13% by the Pigeon pea. The other important Indian pulses are Black gram (Urd), Green gram (Moong) & Pigeon pea (Tur) etc. Aspects of policy and research concerning the cultivation of non-tropical and tropical medicinal plants and their genetic improvement; their conservation in botanical gardens; their storage in liquid nitrogen; their economic potential in international pharmaceutical trade; and their vulnerability to over-exploitation and extinction have been dealt with authoritatively[3, 4].

MATERIALS AND METHODS –

The effect of plant leaf extract was studied against the *Fusarium oxysporum* (Schlecht).

The leaves of these plants were separated and washed with sterile distilled water. 100 g of leaves were crushed by using mortar and pestle using 10% alcohol. The extract was filtered using muslin cloth. The plant extract is added in 100 mL of 10% ethyl alcohol. The plant extract was boiled till the alcohol is evaporated.

The required concentrations of plant extracts were obtained by taking 2.0, 4.0,

6.0, 8.0 and 10.0 mL in 100 mL of warm agar PDA /GNA media.

The different concentrations of plant extracts prepared in agar media were 2.0, 4.0, 6.0, 8.0 and 10.0 %. The media were poured in sterilized petriplates and allowed to solidify. These plates were inoculated by 4mm disc of *Fusarium oxysporum* (Schlecht) and in the center aseptically. These plates were incubated at $28 \pm 1^{\circ}\text{C}$. The observations were recorded in the form of linear growth of fungal pathogen in millimeter (mm). The linear growth was measured upto the growth in control plate when filled completely.

RESULT AND DISCUSSION:–

Leaf extract Conc. (%)	Linear growth (mm)							
	Incubation period (Days)							
	1	2	3	4	5	6	7	8
0.0 (Control)	20	25	30	35	40	45	55	70
2.0	16	17	19	20	30	42	50	52
4.0	15	16	18	19	21	24	27	37
6.0	14	15	16	17	18	22	24	26
8.0	00	00	00	00	7	8	9	11
10.0	00	00	00	00	00	00	00	00
S.E ±	3.32	3.76	4.40	5.00	5.47	6.63	7.70	9.70
C.D. at p=0.01	12.97	15.15	17.73	20.15	22.04	26.92	31.03	39.09
C.D. at p=0.05	8.27	9.66	11.30	12.85	12.85	17.16	19.55	24.92

Table1: Effect of *Azadirachta indica* L. on linear growth of *Fusarium oxysporum* Schlecht.

Azadirachta indica L.

Results indicate that linear growth of *Fusarium oxysporum* in millimeter takes place. The growth of *Fusarium oxysporum* on control plate on 8th day of incubation was 70 mm. At the different

concentrations ranging from 2.0% to 8.0%, the linear growths of fungus on the 8th day were 52 mm, 37 mm, 26 mm and 11 mm respectively. This means that at 8.0% concentration the maximum inhibition occurred and growth was just 11 mm. At 10.0% concentration there was complete inhibition of the fungus.

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