

Impact of cow urine and composted cow dung on the incidence of seed borne Phytopathogenic fungi

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SUMMARY

There are five major substances obtained from cow. All these have medicinal properties against various diseases. Materials obtained from cow viz., cow urine and cow dung in non composted and composted form (vermicompost), respectively were used in varying concentration (0.5%, 2%, 3.5% and 5%) for observing the spore germination behaviour of four fungal species of phytopathogenic behavior. The conidia of *Alternaria alternata*, *Fusarium oxysporium*, *Colletotrichum capsici* and *Curvularia lunata* were used for their germination attributes. Both the cow products posed inhibitory impact towards germination, however, degree of inhibition increased with the improvement of concentration dose

Key words : *A. alternata*, Vermicompost, *Curvularia lunata*

Seed health is very important for the successful cultivation and yield exploitation of crop. Among various factors that affect seed health, the most important are seed borne fungi that not only lower the seed germination but also reduce seedling vigour. Surapala (1000 B.C.) in his text has stressed the use of suitable cultivars, use of good seeds, pre sowing treatment of seeds, use of suitable soils, growing intercrops, having optimum use of water, timely weeding, protection from disorders using herbal products/ dead animal wastes, harvest at right stage and seed drying and storage.

MATERIALS AND METHODS

Spore germination behaviour of chosen phytopathogenic fungi was assayed by cavity slide technique as followed by (Ganeshan, 1993). Four fungal species (phytopathogenic) were selected, which cause diseases in spice crops and its pure cultures were obtained from IARI, New Delhi. viz., *Alternaria alternata* Fr. Keissler, *Colletotrichum capsici* Syd. Bult, *Fusarium oxysporium* Schlechtendahl and *Curvularia Lunata* Boedijn. Aqueous extracts of chosen organic material were used for antifungal activity to evaluate the effect of extracts on spore germination behaviour. 0.5%, 2.0%, 3.5% and 5% (w/v) concentration of solution were made in sterilized distilled water.

Spore suspension of all the four selected cultures were made separately with sterilized distilled water in a test tube. The concentration of spore/ ml was adjusted with the help of haemocytometer. Two drops (0.2 ml) of extracts and one drop (0.1 ml) of spore suspension was placed in a clean cavity slide. The slides in duplicate were incubated in moist chamber. A suitable control in sterile water was also maintained. Germination count was made after 24 hrs of incubation.

RESULTS AND DISCUSSION

Effect of different concentrations of cow urine on the germination behaviour of spores of selected fungal species showed the decrease in percentage of germination with increase in concentration (Table 1, Fig. 1). It is evident from the Table 1 that the percentage germination was minimum (average with respect to concentration is 5.75%) at 5% concentration while it was maximum (87.5%) at 0.5% concentration of cow urine.

Fusarium oxysporum showed 100% germination at 0.5% concentration while it was 90% in the control condition. Which further reduced to 4% at 5% concentration. *Alternaria alternata* also showed 4% germination at 5% concentration of cow urine, which was minimum.

Data shown in Table 2 and Fig. 2 represent the effect of different concentrations of vermicompost extract on the germination behaviour of selected phytopathogenic fungi. The mean values shows that 5% concentration of vermicompost showed the 6.25% (minimum) of spore germination, while 0.5% concentration of vermicompost showed 37.5% (maximum) of spore germination, however, different fungal species did not show much significant

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