

Studies on Antifungal Properties of Essential Oil of *Semecarpus anacardium* Against Seed Mycoflora

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SUMMARY

In the present studies evaluation of essential oil from *Semecarpus anacardium* was used for seed treatment which showed maximum efficacy against seed mycoflora. 3 % extract was found to be significantly effective against various fungi associated with groundnut seeds.

Key words :

Essential oil,
Semecarpus anacardium, Seed mycoflora.

The indiscriminate use of pesticides all over the world in general and India particular has badly damaged the environment for the last forty years. Use of non-target pesticides has caused severe damage to our biodiversity and damage to soil microflora. This ultimately affected the fertility of soil, moreover the use of bulk pesticides and chemical fertilizers have polluted the environment beyond repair.

A wide variety of fungicides used for seed treatment are being produced in India. These include organomercurial, thiram, mancozeb etc. These fungicides applied to crop are long lived and residues persist in soil causing pollution.

Time has come to avoid the use of fungicides and opt for management of diseases by biological control and by the use of biopesticides, which are target oriented and biodegradable. Hence, in view of the alarming present situation, we need to embrace alternative natural therapy for controlling the crop diseases. Use of essential oils from plants would be an alternative (Deans and Ritchie, 1987). Therefore, the studies were focused on evaluation of oil from *Semecarpus anacardium* showing inhibitory effect against seed mycoflora of groundnut. The nuts of *S. anacardium* contain a variety of phenols like, anacardic acid, cardol, catechol, anacardol, semecarpol and a fixed oil.

MATERIALS AND METHODS

The ripe fruits of *Semecarpus anacardium* were collected from Ahmedpur area of Latur District (M.S.). The seeds of plant

were subjected to Soxhlet extraction separately and successfully with methanol (50° - 85° C). The fractions obtained were evaporated and essential oil was obtained, which were preserved in suitable glass vials at room temperature.

In order to study the seed mycoflora the seed samples were obtained from authentic sources like Oilseed Research Station, Latur. Surface and internal mycoflora of different groundnut varieties were worked out (Fig. 1). The pathogenic fungi after isolation were cultured for their sensitivity tests towards essential oil of *Semecarpus anacardium*.

One hundred seeds were taken randomly in a plastic pouch and the essential oil was added. In this case of seed treatment, the concentration of oil was adjusted to 1% (w/w). During the process of seed treatment, seeds were thoroughly agitated with oil taken in plastic



Fig.1: Growth of mycoflora on seeds of groundnut

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