

**“Evaluation of Some plant extracts in the management of leaf spot
of *Lycopersicum esculentum*”**

**MINOR RESEARCH PROJECT
(COMPLETION REPORT)**

SUBMITTED TO,

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BY

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Abstract of Project

1) Leaf spot of tomato is a common and severe disease of tomato caused by *Alternaria solani* (Ell & Mart) Jones & Grout.

2) Commonly available eighteen plants are screened for their antifungal activity viz., *Allium cepa* L., *Allium sativum* L., *Withania somnifera* L., *Zingiber officinale* L., *Oscimum gratissimum* L. and *Calotropis gigantea* Linn., *Launaea nudocaulis* Caut. Plur., *Punica granatum* Linn., *Tridax procumbens* Linn., *Riccinus communis* Linn., *Datura stramonium* Linn., *Euphorbia hirta* Linn., *Brayophyllum calycinum* Salish. parad. Lond., *Helianthus annuus* Linn., and *Aloe vera* Linn.

3) The effect of plant extract was studied by spore germination method (Hanging drop technique) and dry weight method.

4) Among these plants *Oscimum sanctum* L., *O. gratissimum* L. and *Azardirachta indica* A. Juss. were found to be inhibitory at 20% concentration after 2.5 hrs. against the tomato leaf spot pathogen by Spore germination method.

5) While *Aloe vera* Linn., *Calotropis gigantea* Linn., and *Euphorbia hirta* Linn. were found to be inhibitory after inoculation of 15 days by Dry weight method.

6) It is clear from the result obtained, that disease incidence can be reduced or further spread can be prevented by spraying concentrated leaf extracts of *Oscimum sanctum* L., *O. gratissimum* L., *Azardirachta indica* A. Juss. *Aloe vera* Linn., *Calotropis gigantea* Linn., and *Euphorbia hirta* Linn.

It is evident from the result presented in the table for spore germination method that the leaf extracts of *Oscimum sanctum* L. (Krishna Tulas), *Oscimum gratissimum* L. (Ram tulas), and *Azardirachta indica* A. Juss. (Neem) was found to be more effective than any other plants. *Zingiber officinale* L. and *Adhatoda vasica* Mill. also shown very good results.

It was clear from the result that the leaf extracts of *Oscimum* sps. and *Azardirachta indica* A. Juss. was found to highly inhibitory against test pathogen of Tomato leaf spot after 2.5 hrs. of incubation

The efficacy was comparatively higher in 20% conc. than 10% conc.

From the table of the dry weight method it is clear that the highest % of inhibition against pathogenic fungi is shown by *Aloe vera* Linn. (Korphan) while another plants *Calotropis gigantea* Linn. (Ruhki) and *Euphorbia hirta* Linn. (Dudhani) also shown efficacy against causal agent *Alternaria solani* (Ell and Mart). Jones and Grout.

Similar type of studies were also carried out by various workers. Gohil V.P. and D.G. Vala (1996), studied the leaf extracts of Garlic and soap-nut were found inhibitory against *Fusarium moniliforme*. Gourinath A&C, at all dilutions were found to be more toxic than stem to *Curvularia lunata* & *Cylindrocarpon lihenicola*.

Dubey R.C. & O.S. Dwivedi (1991), studied antifungal property *Acacia arabica* they showed that *Vinca rosea* leaf extract reduce the wilt incidence of Safflower caused by *Fusarium Oxysporium* on more extent. Bhowick B.N. and B.K. Choudhary (1982), showed that antifungal activity of *Acalypha indica* was most successful extract for inhibition of *Alternaria alternata*.

Sureshkumar M. & Ugam Kumari Chauchan (1992), studied the antifungal activity of *Calotropis procera* leaf extract, they evident that fungla species were very much sensitive to extract as compared to bacterial pathogen.

Avdesh Narain & J.N. Satapathy (1977), were found that all the plant extract of *vinca rosea* appreciably reduced spore germination of five test fungi viz : *Helminthosporium nodulosum*, *Pestalotia* sps., *Fusarium oxyporium*, *Collectotrichum* sps. & *Aspergillus niger*.

Bhowmkick B.N.& V.Vardhan (1981), Showed the fungicidal properties of leaf extract of *Cinnamomum camphora* & *Catharanthus roseus* were most successful extract for inhibition of test fungi i.e. *Curvularia lunata*.

Misra S.B. *S.N. Dixit (1981), showed the fungicidal properties of leaf extract of *Clematis gourina* was ompletely inhibited the growth of test fungi i.e. *Alternaria tenuis*, *Curvularia lunata*. *Fusarium nivale* & *Helminthosporium gramineum*.