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Research

### Assessment of Pathogenicity in *Helminthosporium maydis* causing Southern Corn Leaf Blight Disease in the Region of Karnataka

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#### ABSTRACT

Maize (*Zea mays* L) is the one of the most beneficial crops, adapted to various ecological and climatic states. It grades this Based on the research determinations for the last few years under the leadership of All India Coordinated Maize Improvement 61 diseases harmful affecting this crop. One of the major diseases is Southern corn leaf blight (SCLB). The causative agent recognized as the fungus *Helminthosporium maydis*. Research was carried out for pathogenicity assay. Pathogenicity assay two methods, by collecting spores ( $2 \times 10^5$ /ml), spraying on one month old maize plant. After 24 - 48 hours, it was found from Davanagere (HMS3) and Kodagu (HMS5) region shows more yellow to brown lesion compare to all other regions. Toxin by methanol - chloroform method, purification by adsorption on charcoal and separated by using column chromatography. The R<sub>h</sub> values, FTIR and UV absorption spectrum of purified toxin reveals the production of H.maydis. Determination minimum toxic concentration required to satisfy the conditions as a host specific toxin.

**Keywords:** Survey, Pathogenicity, Extraction, Host specific Toxin, Southern Corn Leaf Blight.

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#### INTRODUCTION

Southern Corn Leaf Blight (SCLB) caused by *H. maydis*. This disease primarily develops serious effect to maize plant when maize crop grown under very humid and warm regions<sup>1</sup>. SCLB has now revolved out to be the most pervasive and serious ailments in, China, Philippines, Indonesia, Nepal, Kampuchea, Pakistan, Vietnam and India. In India it is well identified as 'Maydis Leaf Blight' and crops influenced by this condition are Corn (*Zea mays*) and

Formation spore is affected by temperature. If temperature is high, the spores are broadly secured with spores, rendering them non-profitable. It is an advanced saprophytic capacity and sub-inoculum level will almost certainly be a great infection event. SCLB infection causes calamities in cultivars created from germplasm profitable from 9.7% to 100% under climate conditions<sup>4</sup>.