

# Glandular Trichome Evaluation through Scanning Electron Microscopy and the Modified Enzymic Browning Assay.

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## Glandular Trichome Evaluation through Scanning Electron Microscopy and the Modified Enzymic Browning Assay




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### Abstract

Potato (*Solanum tuberosum* L.) ranks fifth in the USA in comparison with other countries regarding potato production. Colorado potato beetle (*Leptinotarsa decemlineata* Say) is a devastating insect pest affecting potato in Canada and USA. Several researchers demonstrated that glandular trichomes on potato leaves provided CPB resistance. The

experimental approach consisted of using Scanning Electron Microscope to assess the presence of glandular trichomes, the Modified Enzymic Browning Assay to screen leaves for the presence of glandular trichomes, and a two-year field trial to evaluate CPB defoliation effects on potato genotypes. The SEM provided a closer look at the morphology and quantity of glandular trichome on potato leaves. The MEBA protocol needs further refinement prior to adoption by NDSU or other potato breeding programs. The two-year field trial results indicate Ebt 6-21-3 is resistant to CPB defoliation, and combines high yield, making it an excellent genotype for parental use in cultivar development.

Degree

Master of Science

URI

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