

GROWTH AND OXALIC ACID PRODUCTION IN LIQUID CULTURE BY ISOLATES OF *SCLEROTINIA MINOR*:

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A previous study of *Sclerotinia minor* reported correlation between aggressiveness on susceptible peanut and colony size. A color change on pH indicator plates two to three days after transfer was also observed (Hollowell *et al.*, 2001). The authors reported that lesion size on leaves was correlated with mycelial growth in broth culture, but not oxalic acid production after two or three days in culture. We have undertaken further studies to examine growth characteristics and oxalic acid production of the fungal isolates during two weeks in liquid culture. In addition, we have compared different detection methods for quantifying oxalic acid levels in culture medium. Our comparison of different isolates of *Sclerotinia minor* confirmed that mycelial growth in potato dextrose broth is correlated with aggressiveness. However, levels of oxalic acid in culture medium over the same time period varied considerably and could not be used as reliable predictors of aggressiveness. Culture medium from the moderately aggressive isolate NC22 contained 3 times the amount of oxalic acid compared to NC13 based on mycelial dry weight after ten days (4.08 mg/g vs. 1.38 mg/g, respectively). To investigate whether oxalic acid detection methods influenced the accuracy and reproducibility of these findings, we compared two different protocols for measuring oxalic acid in culture medium. We tested high performance liquid chromatography (HPLC) and a commercially available kit, designed for detection of urinary oxalate, for characteristics such as sensitivity, accuracy, cost, and ease of use. HPLC (Shodex RSpak KC-811 column) accurately quantifies oxalic acid over a broader range of concentrations than the spectrophotometric assay in the kit (0.1 - 200 mg for HPLC vs. 0.1 - 20 mg for the kit). Although reagents for the spectrophotometric assay are more expensive, HPLC is more labor intensive, requires the availability of the appropriate instrumentation, and involves extraction with organic solvents.