

TIMING OF *Xcm* BROTH INOCULUM FOR FIELD EVALUATION

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Abstract

Field evaluation of disease resistant lines is critical in cotton cultivar development. The objective of this study was to determine if growing the *Xanthomonas campestris* pv. *malvacearum* (*Xcm*) bacteria in broth cultures would ensure as effective an inoculum source as growing it in petri dishes for field trials. Four virulent races were tested. Cultures were streaked both on petri dishes containing PDCA, and started in broth using PDCB. Cultures were allowed to grow on the petri dishes for 7-10 days. Cultures were allowed to grow in broth for 12, 24, 36 and 48 hrs and turbidity measurements were recorded on a spectrophotometer. Serial dilutions were made to relate bacterial concentrations to optical densities. Growth rates of cultures were reported. Results of this preliminary investigation revealed that the 12 and 24 hr broth cultures compared favorably with the petri dish method of preparing inoculum. Field ratings for blight infection were 6.00 for the petri dish method, 6.04 for the 12 hr broth culture and 3.83 for the 24 hr broth culture. The stability of the broth cultures, however, was not tested and further replicated trials are needed. This method does have the potential to save time and energy if preparation of cultures was reduced from the current 5-10 days for the petri dish method, to 24-48 hrs for the broth.