

NCR - 101 Committee on Controlled Environment Technology and Use
West Lafayette Indiana, March 11-14, 2000
Tuskegee University - Station Report
George Washington Carver Agricultural Experiment Station, 100 Campbell Hall, Tuskegee
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Facilities

•Renovation of two greenhouses completed in December, 1999. Glass was replaced by Exolite Nodrip double-skinned insulated Acrylic sheets and installation of a Wadsworth Step50A temperature control systems.

Unique Plant Responses

- TU-82-155 sweetpotato canopy height averaged < 30 cm when grown under inverse light dark temperatures of 18/24, 20/26 or 22/28C but storage root yields were reduced by one-half. Photobleaching under HPS lamps was magnified under cool days and warm nights and was reflected in much lower chlorophyll contents. In fact these plants never recovered and remained yellow for the duration of the study, apparently due to low temperature stress.
- 'Georgia Red' peanut plants inoculated with *Rhizobia spp.* in NFT produced innumerable, but small active nodules which supplied N to the plants for for the 110 day growth cycle.

Cooperative/Interdisciplinary Projects.

- Plant group collaborated with NASA JSC to conduct a series of successful sweetpotato experiments using the TU protocol in reach-in or the Variable Pressure Growth chambers.
- Continued cooperative work with USDA/CSREES sweetpotato, biotechnology, and breeding as well as food processing and human nutrition programs
- Student internships at JSC and KSC.

Workshops/Colloquia/Symposia

- Attended and presented 2 papers at the Intl. Symposia on Growing Media and Hydroponics, Aug. 31-Sept. 6, 1999.

Committees and Sub-committees Served

- The Dean and Research Director, and the coordinator of the NASA University Center serve on (1) Division Subcommittee of the Life and Microgravity Sciences and Applications Advisory Committee, and (2) NASA Advanced Life Support Program Advisory Committee.
- NASA and USDA/CSREES peer review proposal panels (A. Trotman).

Publications

Goins, G.D., N.C. Yorio, R.M. Wheeler, D.G. Mortley, and P.A. Loretan. 1999. Hydroponic nutrient solution management strategies for optimizing yield of sweetpotato storage roots in controlled environments. SAE Technical Paper Series No.1999-01-2022 Warrendale, PA 5pp.

Patrick, N., H. Aglan, Y. X. gan, G. Jones, and J. Y. Lu. 1999. Effect of plasticizer type on the mechanical behavior and microstructure of edible peanut protein films. SAE Technical Paper Series No.1999-01-2064 Warrendale, PA 12pp.

Rowell, T., D.G. Mortley, P.A. Loretan, C.K. Bonsi, and W.A. Hill 1999. Continuous daily light period and temperature influence peanut yield in nutrient film technique. Crop Sci. 39:1111-1114.