

## Soil and Water Science Department Seminar

**Speaker:** **Ann Couch**  
**M.Sc. Thesis Degree Candidate**

**Advisor:** Dr. George Hochmuth & Dr. Diane Rowland

**Title:** **Plant Morphology, Yield, and Nitrogen Accumulation by Sesame (*Sesamum Indicum* L.) Grown in North Central Florida under Standard Agronomic Practices**

**Date:** Monday, August 3rd

**Time:** 3:15 pm

**Location:** McCarty Hall A Room G186

Sesame is a new crop to north central Florida with commercial production beginning in 2012. Little was known about its yield potential, plant characteristics, biomass accumulation, or nitrogen uptake. The objectives of this project were to evaluate 12 sesame breeding lines to determine which were best suited for this region, to correlate phenological characteristics to yield to help evaluate future varieties as they are being developed in breeding programs, to determine biomass and nitrogen accumulation patterns, and to develop a partial nitrogen budget. Research took place in the 2013 and 2014 growing seasons at the University of Florida Plant Sciences Research and Education Unit near Citra, FL. Results from this study suggest that production of sesame in north central Florida can produce comparable yields to Texas, Oklahoma, and Kansas, with average yields of 1147 kg.ha<sup>-1</sup> in this trial. The results from this study also suggest that s36 should be promoted as the highest performer with average yields of 1487 kg.ha<sup>-1</sup>. When developing new varieties specific to north central Florida, breeders should focus on using breeding lines with increased plant height, LAI, and hundred-seed weight important for making indirect selections for improved seed yield, since these characteristics were strongly correlated to yield. At the end of the growing season, shorter season varieties, s30 and s32, produced less biomass than the full season varieties, s36 and s39, 5152, 5116, 8739, and 8242 kg.ha<sup>-1</sup> respectively. However, there was no significant difference in the total N uptake at the end of the growing season between varieties with an average N uptake of 81 kg.ha<sup>-1</sup> N. The partial N budget showed 14.7 kg.ha<sup>-1</sup> N were unaccounted for and lost to leaching, volatilization, or denitrification.

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