

NATIONAL PEANUT BOARD/SOUTHEAST PEANUT  
RESEARCH INITIATIVE  
FINAL REPORT FOR WORK  
DONE UNDER RESEARCH AGREEMENT

Final Report

4/4/1318  
2014

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INSTITUTION: University of Georgia

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PROJECT TITLE: Nutsedge Tubers: the Worst Foreign Material in Peanut

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RES. AGR. NO.: PROJECT LEADER: Grey/Webster

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EXPIRATION DATE: June 30, 2015 NPB CONTACT: Bob Parker/Maria Mehok  
NPB Control NO.:

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### FINAL REPORT:

Purple nutsedge is among the most difficult to manage weeds in the Southern US, ranking #1 in GA and FL Fruiting Vegetables and Cucurbits, and number six in peanuts. It has a fibrous root system which is extensively branched. Most of the success of this troublesome weed is due to its ability to survive and reproduce from tubers during adverse conditions. It grows well in almost every soil type, over a wide range of soil moisture, pH and elevation, and can survive the highest temperatures encountered in agriculture. Imazapic is currently applied early post emergence in peanuts for broad spectrum control of weeds, including purple nutsedge. The weed killing activity involves uptake of the herbicide by weed roots and/or foliage and rapid translocation to the growing points. However, under adverse conditions, Cadre may induce an adverse crop response.

The study of the natural purple nutsedge tubers that were transplanted into microplots and treated with imazapic were exhumed, processed, and separated into different classes: 1) tubers with shoots that were emerged at the time of imazapic application, 2) tubers with shoots that emerged following imazapic application, and 3) tubers without emerged shoots. Shoot foliage was then dried and biomass determined.

Results showed that harvested purple nutsedge tubers and foliar biomass decreased as the result of increased rates of imazapic. Tubers were then evaluated for viability, characterized by the ability to produce a vegetative shoot (1.5 mm), every three days. Buried purple nutsedge tubers lost 50% viability after 17 months in Tifton, GA, with 99% mortality occurring after 36 months.

For the peanut field trial, purple nutsedge tubers were planted as peanut emerged from the soil and then treated with different rates of Cadre. Subsamples from each plot were taken for shelling to quantify grade and foreign material. Results showed no statistical difference in stand counts taken throughout May and June. There were also no statistical differences in yield or weight of pods in relation to different rates of imazapic (0.01, 0.03, & 0.06 lb ai/a). This indicates that there were no adverse effects of Cadre on peanut growth and yield at various rates.