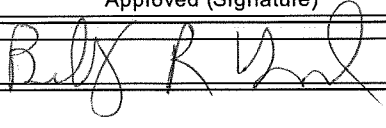


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| U.S. Department of Agriculture<br><b>Accomplishments Report AD-421</b><br>U.S. Dept. of Agriculture, State Agricultural Experiment Stations and Other Institutions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                               |                                                           | Date (Month, Day, Year)<br>01/11/2013 |
| 1. Accession<br>0213279                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Agency Identification No.<br>2. CSREES 3. LAB | 5. Work Unit/Project No.<br><b>LAB93888</b>               | 6. Status<br><b>Final Report</b>      |
| 7. Title<br>Soybean Breeding and Variety Development                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                               |                                                           |                                       |
| 12. Investigator Name(s) (Last Name and Initials)<br>Buckley, B.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                               |                                                           |                                       |
| 20. Termination Date 12/31/2012                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                               | 40. Period Covered (mo/da/year): 01/01/2008 TO 12/31/2012 |                                       |
| Outputs:<br><p>An overview of the Louisiana soybean breeding program was disseminated to producers at annual research station field days. The process of soybean variety development was described in Louisiana Agriculture Magazine articles. Results of soybean rust research were published in refereed journals. Project goals, progress, and accomplishments were presented to board members at annual meetings of the Louisiana Soybean and Grain Research and Promotion Board. Quarterly reports of funded research were submitted to the United Soybean Board. Interaction with fellow soybean breeders and scientists was achieved at annual soybean breeder's workshops and tours.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                               |                                                           |                                       |
| Outcomes/Impacts:<br><p>A breeding program was initiated to develop soybean material with resistance to Cercospora leaf blight (CLB) and other environmental stresses of importance to soybeans in Louisiana. Crosses and selection for disease resistance and agronomic traits was made in field trials. Breeding lines were evaluated for yield and disease resistance at the Red River Research Station in Bossier City, LA. Soybean plant introduction lines were evaluated in field trials for soybean rust (<i>Phakopsora pachyrhizi</i>). A majority of 94 plant introductions rated in 2009 were highly susceptible to the rust pathogen. Nine lines had a low disease index for rust and were considered resistant. A Regional Soybean Relative Maturity Test was used to validate soybean variety maturity classification. Collaborative research evaluated yield of 29 soybean lines derived from crosses between cultivated soybean (<i>Glycine max</i>) and wild soybean (<i>Glycine soja</i>). Yield of the lines ranged from 34-48 bu/A and was as great as 104% of yield of NC-Roy; 79% of NC-Raleigh; 92% of N7003; 89% of Woodruff; and 96% of yield of N7103. Eleven advanced breeding lines were evaluated for yield and CLB in 2012. Yield of lines ranged from 31-65 bu/A and was 67-116% of yield of two commercial control varieties. CLB was rated on a 1-5 scale with 1=no symptoms and 5=severe foliar symptoms and defoliation. CLB ratings for the breeding lines were 2-3. The control varieties were rated 4 for CLB severity. Development of cultivars with resistance to <i>Cercospora</i> leaf blight will provide soybean growers with solutions for economical control of the disease.</p> |                                               |                                                           |                                       |
| Publications:<br>No Publications Reported                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                               |                                                           |                                       |
| Participants:<br>Blair Buckley (PI), and Russell Anderson, LSU AgCenter.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                               |                                                           |                                       |
| Target Audiences:<br>soybean breeders, researchers, producers.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                               |                                                           |                                       |
| Project Modifications:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                               |                                                           |                                       |

Nothing significant to report during this reporting period.

| Approved (Signature)                                                              | Title | Date |
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