Ana Alonso

Project Title
Biomass Composition of Soybean Seeds

Biography
Ana Paula Alonso obtained her B.S. in Biochemistry in 1998 and M.S. in Biological and Medical Sciences in 2000 from the Université Victor Segalen in Bordeaux, France. She received her Ph.D. in 2003 from this same university, discovering a new substrate cycle in plants. After four years of postdoctoral training in seed metabolism (Michigan State University), and microbial metabolism (Institut National des Sciences Appliquées, Toulouse, France), she joined the Great Lakes Bioenergy Research Center in 2008 as a Visiting Assistant Professor to work in the exciting field of biofuel research. In 2010, Dr. Alonso moved to The Ohio State University and is currently Assistant Professor in the Department of Molecular Genetics as well as the Scientific Director of the Targeted Metabolomics Laboratory.

Project Description
The market value and use of soybean seeds depends upon their biomass composition (content in proteins, oils, and carbohydrates). Factors including, but not limited to, genetics, fertilization, climatic conditions, and disease pressure, can modify biomass composition and consequently impact soybean price. Research challenges for improving soybean seeds currently aim at increasing the protein and oil content as well as modifying the essential proteinogenic amino acids and fatty acid composition. The goal of this project is to quantify biochemical traits that are particularly important for the market value of soybean. The levels of proteins, the content in proteinogenic amino acids, as well as the quantity and composition in oil are being determined. These traits are measured in diverse cultivars, grown in different locations, with or without disease pressure. Therefore, this project not only provides a comprehensive biochemical characterization of Ohio-adapted soybean lines, but also determines the impact of location and disease pressure on traits that influence the market value of food-grade soybean. This project concludes in 2015.