GRADUATE RESEARCH ASSISTANTSHIP AVAILABLE
Soybean breeding: Development of Genetically Engineered Soybean Varieties and Germplasm with High Protein Digestibility

Soybean meal has been widely used in animal feed including swine, poultry, cattle, horse, sheep and even fish. However, soybean has several anti-nutritional factors to prevent animals’ protein digestibility such as trypsin inhibitors, phytic acid, raffinose family of oligosaccharides, and antigenic factors. Processing of soybean meal requires control of moisture content and temperature in order to denature those anti-nutritional factors. Those extra processing steps add cost to soybean meal production. The most economic and reliable way to improve animals’ protein digestibility is to feed them with soybean meals containing low concentration of anti-nutritional factors. However, no such commercial soybean variety is available for growers and end users. The overall goal of this project is to develop genetically engineered soybean varieties and germplasm with low anti-nutritional factors. This final goal is to help to increase Virginia soybean growers’ feed market share.

Ph.D. assistantship support is available for one highly motivated doctoral student focusing on soybean molecular biology and breeding to improve animals’ protein digestibility. Support is available to start in spring or fall 2016. The student will reside on campus in Blacksburg and be affiliated with the Crop & Soil Environmental Science (CSES). The student will gain molecular lab experience in screening molecular markers, designing primers, fine mapping, etc., and seed composition analysis such as protein, oil and sugar content as well as field experience working on parental crosses, breeding line selection, variety releasing, etc.

Students will work under the advisement of Dr. Bo Zhang. A background in agronomy, crop & soil science, environmental science, or other agricultural related field is required. A M.S. degree that includes college level training and work experience with agronomic and/or molecular techniques is preferred. Research experience working in crop breeding, molecular work, strong written and oral communication skills and ability to interpret and analyze results are highly preferred. For more information about this position, please contact: Dr. Bo Zhang. E-mail: bozhang@vt.edu or Phone: (540) 231-1731.

To formally apply for this position, go to https://gradapp.stl.vt.edu/pages/login.php and supply the following materials and documentation: (a) copies of transcripts of all graduate and undergraduate coursework, (b) contact information for three references, (c) GRE scores, (d) a written personal statement and (e) a short personal vita. International students will also need to provide TOEFL scores. Information about our department and research programs is available at http://www.cses.vt.edu/. General inquiries about graduate studies should be directed to W. Lee Daniels (wdaniels@vt.edu; 540-231-7175).

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