Predicting the amount of Amino Acids in Soybeans using High Performance Liquid Chromatography (HPLC) and Near-Infrared Reflectance (NIR). (C01-orf171451-Poster)

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Abstract:

As interest increases in the nutritional quality of food for both humans and animals, breeding programs require more efficient methods for determination and selection of nutritional quality traits. Soybean (Glycine max (L) Merr.) is an excellent high-quality protein source due to its overall amino acid balance. However breeding cultivars for enriched amino acid levels is limited due to the lack of a practical method for determining amino acid content in the seed. High performance liquid chromatography (HPLC) is an analytical technique capable of producing excellent separation between amino acids, but sample preparation and analysis is expensive and very labor intensive. Near infrared reflectance spectrometry (NIRS) is another analytical method that has the ability to analyze a large number of samples for one or more amino acids quickly, inexpensively and with minimal sample preparation. NIRS calibration requires HPLC laboratory values for the conversion of absorption information into analytical values. These analytical values can then be used for selection in breeding programs.

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