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Abstract

(300 words or less, in Times New Roman text 11 point, right justified, no indent, single spaced)

Although many near infrared (NIR) spectrometric calibrations exist for a variety of components in soy, current calibration methods are often limited by either a small sample size on which the calibrations are based or a wide variation in sample preparation and measurement methods, which yields unreliable results [1]. Over the past two years our lab has used defined analytical methodology to measure 1) isoflavones and saponins in soy samples, and 2) the soluble carbohydrates (sucrose, raffinose, stachyose, verbicose, glucose and fructose) and "insoluble" carbohydrates (such as starch, cellulose, pectin and other structural carbohydrates) by hydrolysis to the monomer form and derivation to measure total insoluble monomers and total uronic acids. This analysis was done in triplicate on over 500 crop samples from the 2011 harvest and over 600 samples from the 2012 harvest. NIR calibrations have been developed from scans performed on the ground whole soy meal on three different NIR instruments using three different calibration development packages.

References

[1] Einstein, A., 1906. A new determination of molecular dimensions. Ann. Phys. 324, 289–306.