Assessing the Consistency of Soybean Quantitative Trait Loci for Seed Traits. (C01-fasoula155829-Oral)

Authors:

- V.A.Fasoula* - *University of*
- H.R.Boerma - *University of Georgia*

Abstract:

In soybean and other crops, there is limited and conflicting information confirming the previously reported QTL. The objective of this study was to utilize an independent F2-derived soybean population to confirm previously reported RFLP markers associated with seed protein, seed oil, and seed weight, mapped in a F2-derived population created from the same parents. Single-factor analysis of variance was used to confirm the RFLP loci that are significantly associated with seed composition and seed weight. Two out of four previously described QTL for seed protein, two out of three QTL for seed oil, and one out of three QTL for seed weight were confirmed in the independent population. Thus, 50% of the QTL detected in the original mapping study were verified in the new population. The confirmed QTL were detected based on the mean phenotypic data across three environments as well as within each environment. Some of the previously reported QTL that were not detected in this study may have been erroneously declared significant in the original population (Type I error) or they may have been specific for the sample of lines or environments used in the original population.

Corresponding Author Information:

Vasilia Fasoula
University of Georgia-Center for Applied Genetic Technology
111 Riverbend Road
Athens, GA 30602-6810

phone: 706-542-0915
fax: 706-583-8120
e-mail: vfasoula@uga.edu

Presentation Information:

Presentation Date: Wednesday, November 13, 2002
Presentation Time: 2:45 pm

Keywords:

Soybean, Quantitative trait loci, Seed composition, Seed weight