Identification of QTL for Seed Isoflavone Concentration in Soybean. (C07-lee204442-Poster)

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Abstract:

Isoflavone in soybean is known to have the important physiological functions such as anti-cancer activities. Therefore, the interests have been increased to develop isoflavone quality and concentration. The objective of this study was to identify quantitative trait loci (QTL) associated with isoflavone concentration using various markers in 90 recombinant inbred lines (RIL) from Pureunkong X Jinpumkong 2. Isoflavone concentration was determined by high performance liquid chromatography (HPLC). The result of analysis for isoflavone concentration in population indicated the presence of only seven isoflavones out of a possible twelve isoflavones. A total of 104 markers (85 SSR markers, 15 AFLP markers, 2 SNP markers and 2 classical markers) were used for construction of genetic map and QTL analysis to identify the association between markers and isoflavone concentration. Eighty-one markers were mapped to 13 linkage groups, for a total of about 870.1cM, and with an average distance of 10.7cM between markers. Also, thirteen of used markers were significantly associated with isoflavone concentration. Especially a region on linkage group O identified by the microsatellite marker Satt358 was significantly (P=0.0059, R2=19.2) associated with daidzein concentration. This region had a strong effect on soybean seed daidzein concentration and could be a useful position for marker-assisted selection.

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