

**Division-3-05**

**Selective Allele Stacking of a Novel Quantitative Trait Locus Facilitates the Enhancement of Seed Epicatechin Contents in Soybean (*Glycine max* (L.) Merr.)**

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**[Abstract]**

(-)-Epicatechin (EC), a primary form of flavan-3ol and a building block of proanthocyanidins, has health benefits as it is a potent antioxidant. So far, no quantitative trait loci (QTLs) associated with EC have yet been identified in soybean. In this study, QTLs for EC and hilum color were identified in recombinant inbred lines (RILs) derived from the varieties Jinpung and IT109098 using high-resolution single nucleotide polymorphism linkage mapping. This revealed two major QTLs for EC content, *qEC06* and *qEC08*. *qEC06* spanned the *T* Locus encoding flavonoid 3'-hydroxylase. *qEC08*, located near the *I* locus on Chr08, was also a major QTL for hilum color; however, allelic stacking of *qEC08* and *I* revealed no relationship between *I* and EC content. RILs with IT109098 alleles at both *qEC06* and *qEC08* had higher EC content than other lines. These results will enable the production of soybean varieties with high EC content *via* marker-assisted selection.

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