Science Societies

Seed weight–determining loci in soybean

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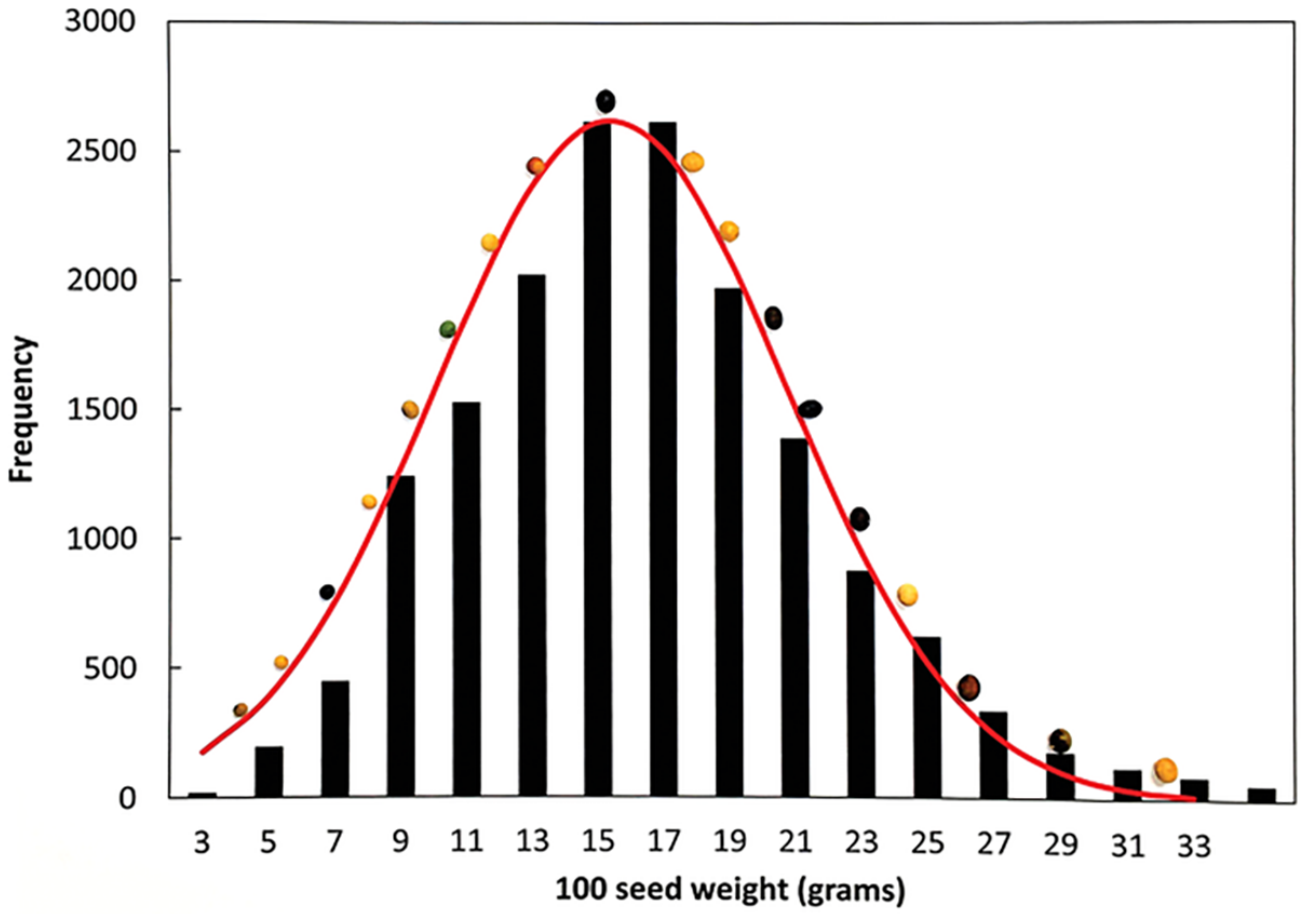

Distribution of soybean seed weight of 15,527 genotypes in the Soybean Germplasm Resources Information Network. Seed from representative genotypes are shown across the different classes. Graph courtesy of Larry Purcell.

Seed weight is a component of soybean yield and a determinant of quality in soy foods. Although seed weight of most commodity soybean cultivars ranges between 13 and 18 g per 100 seeds, the full range of seed weight among genotypes extends from less than 2 to greater than 35 g per 100 seeds.

In an article recently published in *Crop Science*, researchers used data from more than 15,000 genotypes found in the Germplasm Resources Information Network (GRIN) to identify loci determining seed weight using association mapping. Data were divided into 36 panels, and association mapping identified ($P \leq .0003$) 47 loci present in at least three independent panels that were closely associated with seed weight. The effect of individual alleles on seed weight ranged from −7.8 to 6.9 g per 100 seeds. This information was used to describe the number of favorable alleles of all 19,651 accessions in the USDA germplasm collection, which breeders can use as a resource for breeding for soybean weight.

Dig Deeper

Kaler, A.S., and Purcell, L.C. (2020). Association mapping identifies and confirms loci for soybean seed weight, *Crop Science*, *61*.
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