

Influence of allelic variability of photoperiod genes on soybean maturity time in central Russia and West Siberian

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Soybean is a short day crop with a strong sensitivity to photoperiod. Under the long daylight, the flower-ing and maturity time of soybean is greatly delayed. The *E1-E4* genes have the strongest effect on photoperiod sensitivity. Recessive alleles of the *E1-E4* genes reduce sensitivity to photoperiod, resulting in early flowering and maturity. How these genes affect the growing season of soybeans in field conditions of Russia is still un-known. To clarify this issue, we studied the flowering and maturity time of 180 soybean accessions under natu-ral daylight in the Novosibirsk and Orel regions. Also, for all accessions the *E1-E4* genotype was established. As a result, accessions with genotypes *e1-as/e2/e3/e4* and *e1-nl/e2/e3/e4* had the shortest flowering and maturity time in both regions.

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The main publications of authors on the subject of the abstract:

Perfil'ev, R.N.; Shcherban, A.B.; Salina, E.A. Development of a Marker Panel for Genotyping of Domestic Soybean Cultivars for Genes Controlling the Duration of Vegetation and Response to Photoperiod. Vavilov J. Genet. Breed. 2021, 25, 761–769, doi:10.18699/VJ21.087.

Take-home message:

- 1) Recessive alleles *E1-E4* provide adaptation of soybean to northern latitudes.
- 2) The *E4* gene has a different effect on the flowering time in the Novosibirsk and Orel regions.