

Adaptive value for common wheat (*Triticum aestivum*) of the gene *Hl2^{aesp}* leaf hairiness introgressed from *Aegilops speltoides*

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Morphological features of leaf pubescence in common wheat have a significant impact on its photosynthetic activity (Pshenichnikova et al. 2019). The present study is devoted to the *Hl2^{aesp}* gene introgressed from *Aegilops speltoides* that forms rare trichomes over 400 µm long on the leaf surface. The gene was introduced into the line 102/00i (Arsenal collection) on chromosome 7B(7S) of cv. Rodina which lacks leaf pubescence. When crossing this line and the original variety the recombinant lines were obtained with and without pubescence. The selection was accompanied by a control for *Xgwm400* microsatellite marker associated with *Hl2^{aesp}* gene. It was shown that when grown under conditions of controlled drought, the line rec:Rodina *Hl2^{aesp}* the line evaporates water 20% less, but also absorbs carbon dioxide one third more slowly. With sufficient watering, the difference in CO₂ uptake and transpiration is not so contrasting. The germination-heading period is delayed by 3-4 days in the line with pubescence and it is more productive under normal watering and field growing. Financial support: Russian Science Foundation (23-24-10029) and Novosibirsk Region (p-63).

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

Pshenichnikova T.A., et al. Quantitative characteristics of pubescence in wheat (*Triticum aestivum* L.) are associated with photosynthetic parameters under conditions of normal and limited water supply // PLANTA (2019) 3(243): 839-847