A CUMULATIVE TRANSGRESSIVE SEGREGATION IN WHEAT

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While transgressive segregation in wheat has been noted on several occasions (1, 4, 5, 6, 7), the case here reported is regarded as being of evolutionary interest.

Utac wheat is a pure-breeding segregate from a cross between the varieties Sevier and Dicklow. These two parent varieties are of intermediate spike density, the length of 10 internodes in Sevier being $33.7 \pm 0.81$ mm and in Dicklow $50.5 \pm 0.64$ mm. Approximately one-fourth of the progenies were distinctly more dense than either parent, while another one-fourth was distinctly more lax than either parent. After some years of nursery yield tests one of the dense progenies gave considerable economic promise and was advanced to the plat tests in the Utah Agricultural Experiment Station. Continuing to yield well, it was given the name “Utac”, as an abbreviation of “Utah A. C”. Its spike density for 10 spikelet internodes was $25.2 \pm 0.296$ mm. In order to unite the winterhardiness and the smut resistance of Ridit wheat with the high yield and standing ability of Utac, a cross was made between these varieties. The spike density for 10 spikelet internodes of Ridit was found to be $44.5 \pm 0.234$ mm. Out of these came another transgressive segregation which is cumulative over the one obtained in Utac as compared with its two parents. One-fourth of the offspring was more dense than even the dense Utac and the lax fourth more lax than lax Ridit. Statistical study shows the transgressive differences to be distinct, as they are 10 and 26 times the respective probable errors.

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3 Reference by number is to “Literature Cited,” p. 764.