Disomic Chromosome Addition Lines of Thinopyrum bessarabicum in Bread Wheat. (C01-mujeebkazi111400-Poster)

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Abstract:

Thinopyrum bessarabicum (2n=2x=14, JJ or EbEb); syn. Agropyron junceum; is a grass species with multiple stress resistances of which salt tolerance and Fusarium head scab are our current agricultural priorities for wheat production. One utilization strategy of alien genetic diversity in wheat is to produce a complete set of alien chromosome addition lines in wheat which becomes the basis of introgressing the alien beneficial characters from the desired additions into wheat by cytogenetic manipulation. We report here on the production and characterization of a complete set of 7 disomic Th. bessarabicum chromosome addition lines (1J or 1Eb to 7J or 7Eb) in a spring wheat background that is a mix of cultivars Chinese Spring (12.5%) and Prinia (87.5%). Validation protocols for each addition line involved FISH, Giemsa C-banding, phenotype, biochemical markers, meiosis with inter-addition line cross derivative analysis (21 bivalents + 2 univalents), and molecular diagnostics. From each disomic addition line its doubled haploid derivative was produced to possibly add to greater stability.

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