Evidence for Reciprocal Hybridization Between Aegilops tauschii and Ae. markgrafii in the Formation of Jointed Goatgrass (Ae. cylindrica). (C01-gandhi191146-Oral)

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Abstract:

Jointed goatgrass (*Aegilops cylindrica*), a major weed of winter wheat (*Triticum aestivum*), is an allotetraploid (2n=4x=28, CCDD) that resulted from interspecific hybridization between two diploid species - *Aegilops tauschii* (2n=2x=14, DD) and *Aegilops markgrafii* (2n=2x=14, CC). Previous studies suggest that *Ae. tauschii* was the maternal parent and cytoplasmic donor during the formation of jointed goatgrass. A recent evaluation of plastome (chloroplast genome) diversity with 20 chloroplast SSR (simple sequence repeat) markers suggests that one accession collected in Turkey, TK-116, contained a plastome that was derived from *Ae. markgrafii* . An evaluation of nuclear SSRs, chromosome number and morphology, and awn characteristics suggests that TK-116 possesses a nuclear genome typical of other *Ae. cylindrica* accessions. These results indicate that *Ae. markgrafii* in addition to *Ae. tauschii* has served as the maternal parent and cytoplasmic donor during the creation of some jointed goatgrass accessions. Chondriome (mitochondrial genome) diversity analysis is currently underway.

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