

## **1887 Variation in transpiration efficiency among 100 cotton lines**

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Cotton is an important cash crop in the world. On the High Plains in the United States, over half of the cotton acreage is non-irrigated. Transpiration Efficiency (TE), defined as dry biomass produced for a given amount water transpired through the plant, could be a key trait to improve water use efficiency and yield of dryland cotton. To exploit this trait in cotton breeding, we developed a high throughput gravimetric method to determine TE at seedling stage. Twenty commercial varieties and 80 plant introduction (PI) lines were screened for transpiration efficiency under greenhouse conditions. Significant variation in TE was identified among these lines. The lines that display contrasting TE will be evaluated under field conditions to determine if the lines with high TE at seedling stage produce higher lint yield under limited irrigation.