

Evaluation of Indiangrass Genetic Lineage in Texas

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Activities conducted by the *Texas Native Seeds Program* (TNSP) present a unique opportunity for the study of the genetic lineages of Texas' native plant species and to further our understandings of ecotypic variation across the state. In early 2019, TNSP moved forward with a statewide evaluation of Indiangrass, which contained roughly 80 unique accessions collected from across Texas, as well as previously released varieties of the grass. We are collaborating with The University of Texas at Austin's Juenger Lab to complete these evaluations.

The Juenger Lab has significant experience in conducting genetic studies of switchgrass, Hall's panicum, and other native grasses. Since Indiangrass is one of the "big four" prairie grass species of the North American Tallgrass Prairies, it has been studied in-depth and has baseline genetic information available that makes it easier to work with than less-studied species. There is also significant conservation and restoration interest in the species.

In September, emerging leaf tissue samples were collected from roughly 80 accessions and immediately sent on ice to the lab for processing. Those samples underwent DNA extraction, PCR and chloroplast tagging, followed by DNA sequencing. Afterwards, sequencing data were cleaned and compiled by computer software, then organized into matriarchal lineage "tree" models where significant divergences in the genetic code among accessions can be observed. These results will be used to make regionally-appropriate seed selections of Indiangrass to benefit restoration efforts across Texas.

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