

## **Genomic Analysis of Common Texas Native Grasses**

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*Texas Native Seeds Program* (TNSP) personnel are involved in the collection and evaluation of native plant material for developing plants adapted to specific regions in Texas. In our previous field research, plant differences have been found. However, the impact of seed origin in relation to these differences is poorly understood. The objective of this study is to compare native plant populations of little bluestem, silver bluestem, and blue grama to plants already available by looking at differences in genetic sequences.

We have conducted genetic sequencing on different plant populations consisting of 53 little bluestem, 12 silver bluestem, and six blue grama plants. The project produced 508 million sequences for an average of 5.6 million sequences per plant. Sequence analysis is currently being conducted at Texas A&M University.

We will use the data to identify plant population structures that will help guide decisions for future plant releases based on geographic location. We have also begun to look at the microbiome of little bluestem while isolating microbial genetics from little bluestem populations. We created sequencing libraries from 40 sequenced bacterial communities and 40 fungal communities from the plants. These microbial community samples are being processed in labs at Texas A&M AgriLife in Stephenville. Results from this research should improve plant selection and restoration success throughout Texas.

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