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NATIVE NEWS

Spence Restoration Nursery

What is Local Genotype and Why is it Important

When working with native plants and seeds, you will often hear the terms local genotype or local ecotype. These terms refer to the genetic origin of the plants or seeds. Many species of native plants have very large natural ranges that encompass a variety of natural regions and hardiness zones. By selecting material with local genetics, you are more likely to end up with plants that will thrive on your site. The advantages of local genotype include adaptability to your geology and climate, coordination with local pollinators, and the exclusion of inappropriate grass cultivars.

The definition of "local" varies significantly between purists and pragmatists in the restoration business. Some purists demand genetic origins within 50 miles or less of the restoration site. This often presents availability issues as there may not be sufficient demand to support native plant nurseries at this density. Pragmatists tend to specify a radius of origin of 100 to 200 miles. Not only does this increase the number of available sources, it also recognizes the fact that seeds can be carried large distances by wind, floodwaters, and migrating fauna.

One of the best ways to guarantee local genotype is to specify yellow tag source-identified seeds and plants. Many states, including Indiana, have a yellow tag program administered by their crop improvement association. At Spence Restoration Nursery, we have kept detailed records of the locations of the native communities where we obtained our foundation seed collections. We have visited these locations accompanied by personnel from the Indiana Crop Improvement Association. They certify that the seed collections have come from a true remnant native plant community. Following this certification, they provide us with yellow tags listing the county and township of genetic origin of each species. Verbage for specifying tag material is found on our website.

I have witnessed a variety of issues with inappropriate genotypes in restorations. At one planting, I saw obedient plant that had finished blooming by late July. Our local genotype obedient plant flowers from mid August to late September. Obviously, such a variance may cause problems for plants that have specialized pollinators that may not be active when the distant genotype flowers.
I frequently pass by a DOT prairie planting containing the worst assortment of disparate genotypes that I have ever seen. There is a strain of Maxmillian's sunflower that does not start blooming until the end of October, about the time of our first hard freezes. Every year the tops are killed by subfreezing weather while in full bloom, never able to set seed. This species of sunflower is not even native to Indiana, making it even more inappropriate. This planting also contains a few clumps of a strange 7 foot tall strain of switchgrass. Finally, parts of the planting are dominated by western strains of indian grass selected for forage. These strains are easily recognizable by their broad bluish foliage, their aggressive habit, and their tendency to lodge (blow over) after flowering. Overall it bears little resemblance to our erect, slender green- leaved local genotype indian grass. I have dubbed this inappropriate planting the "Frankenstein Prairie" for its odd assortment of genetics.

Plant Feature: Prairie Blazing Star (Liatris pycnostachya)

One of our most impressive wildflowers, Prairie Blazing Star (Liatris pycnostachya) is native to wet and mesic prairies from western Indiana west through much of the tallgrass prairie region. It is our tallest species of liatris, typically reaching 5 to 6 feet in our seed nursery. Like all blazing stars, the flowers begin opening at the top of the long inflorescence, slowly working their way down the stem. This species blooms during the hot weather of July and August.
A dramatic addition to a rain garden, Prairie Blazing Star is remarkably tolerant of both shallow inundation and drought. In a restoration, appropriate associates may be found in our mesic and wet mesic prairie seed mixes.

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