

Genomic DNAs of pigweed and Johson grass samples from different Tennessee counties.

The subject of this investigation involves genomic access to Johnsongrass and pigweed samples, both categorized as problematic weeds prevalent in various counties in Tennessee. Per primary purpose of this research, this study can elucidate the challenges posed by both weeds in agriculture, particularly their increasing resistance to herbicides. The methodology used in the collection of plant samples involved the reporting of the herbicide use to indicate potential resistance exhibited by different weed specimens. For genomic plant DNA extractions, 0.4 mg of leaf tissue from a specific weed sample were grounded in liquid nitrogen resulting in a fine powder. Subsequently, the DNeasy Plant Mini Kit was employed to extract DNA from the flash-frozen samples, ensuring the preservation of genetic materials. The samples' extracted DNAs were quantified using an instrument called nanodrop, to measure DNA in concentrations in ng/ μ l. Later, the extracted DNAs were subjected to gel electrophoresis, a technique leveraging electricity for forcing DNA fragments to migrate and separate per size. The resultant gel patterns were then examined on an UV-illuminator to discern the quality of DNA bands, indicating successful extraction. This approach will yield genome DNAs from plant samples to enhance our understanding of herbicide resistance by contributing to the exploration of weed genetic mechanisms.

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