



GENETIC FINGERPRINTING of

GOLDENSEAL

Hydrastis canadensis

USING AFLP MARKERS: an update

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ABSTRACT

Our earlier publication indicated 3 accessions of goldenseal (*Hydrastis canadensis* L. [Ranunculaceae]) originated in Florida, although our results indicated they were more closely related to Tennessee and Georgia genotypes. After further investigation with our plant supplier, it appears that 2 of the 3 accessions purportedly from Florida were indeed from Tennessee and Georgia—AFLP is a robust method for correctly identifying the source of goldenseal genotypes.

Zhou S, Sauvé RJ. 2006. Genetic fingerprinting of goldenseal (*Hydrastis canadensis*) using AFLP markers: an update. *Native Plants Journal* 7(3):284–285.

KEY WORDS

genetic diversity, molecular marker, plant DNA profile

NOMENCLATURE

USDA NRCS (2006)

Photo by Joseph G Strauch Jr

Earlier in 2006 we reported on differentiating among genotypes of goldenseal (*Hydrastis canadensis* L. [Ranunculaceae]) using a DNA analysis (fluorescent-based amplified fragment length polymorphism [AFLP]) (Zhou and Sauvé 2006). Based on information provided to us by the plant supplier, we believed our analysis used plant materials native to Tennessee, Georgia, and Florida. During the analysis, however, our results indicated that the 3 accessions purportedly from Florida were odd, and we concluded in our paper that the close relationship of 2 Florida accessions to accessions from Tennessee and Georgia suggested these plants initiated from those states rather than Florida.

After publication and queries from other researchers, we further investigated the source of the plants supposedly from Florida and discovered they were actually collected from a nursery in Georgia. The first Florida accession, SHF1, which we found was nearly identical (88% confidence level) to 4 other Georgia accessions (HCGA1, HCGA2, WCGA1, WCGA2), was most likely indeed a Georgia genotype. Similarly, the second Florida accession, SHF2, which we determined was nearly identical (96% confidence level) to the 2 Tennessee isolates (OCTN1 and OCTN2), was indeed most likely a Tennessee accession. The third Florida accession (SHF3), which in our earlier work was a unique genotype, remains a mystery as to its source, although we are certain it is not from Florida.

Our earlier work incorrectly showed goldenseal native to Florida based on faulty information from the plant provider (Zhou and Sauvé 2006). The robustness of the AFLP technique, however, showed the proper relationships between genotypes—with the new information provided by the plant supplier, our original conclusions are now even clearer. As we summarized in our original paper, AFLP molecular markers can be used to track the original source of goldenseal accessions.

REFERENCES

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- Zhou S, Sauvé RJ. 2006. Genetic fingerprinting of goldenseal (*Hydrastis canadensis* L. [Ranunculaceae]) using AFLP markers. *Native Plants Journal* 7(1):72–77.

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