

Diosgenin Contents and DNA Fingerprint Screening of Various Yam (*Dioscorea* sp.) Genotypes

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In addition to the importance of many *Dioscorea* species (yams) as starchy staple food, some representatives are known and still used as a source for the steroidal sapogenin diosgenin, which, besides phytosterols derived from tall-oil, is an important precursor for partial synthesis of steroids for pharmaceutical research and applications. While in edible yams the diosgenin content should be as low as possible, a high yield of the compound is preferable for cultivars which are grown for the extraction of sterols. In the past, miscalculations and insufficiently precise techniques for quantification of diosgenin prevailed.

Therefore we set out to re-evaluate the steroid content of a world collection of *Dioscorea* species, using leaves as sample material. We optimized diosgenin quantification techniques and fingerprinted the whole collection with the DNA amplification fingerprinting (DAF) technique. Total diosgenin contents ranged from 0.04 to 0.93% of dry weight within the collection. Several *Dioscorea* cultivars can be characterized via their DAF fingerprint patterns.

Key words: *Dioscorea*, Diosgenin Production, DNA Amplification Fingerprinting