

LEAVES OF FUNGUS RESISTANT WILD PEANUT (*Arachis cardenasii*, *A. stenosperma* and *A. hoehnei*) ACCUMULATED HIGHER HYDROXYCINNAMOYL-TARTARIC ACID ESTERS AND FLAVONOID THAN CULTIVATED PEANUT (*A. hypogaea*).

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Abstract: Leaves of genus *Arachis* accumulate phenolic compounds such as resveratrol [1] and hydroxycinnamoyl-tartaric acid esters [2]. The aim was to compare the phenolic profile of three fungus resistant wild peanut (*Arachis cardenasii*, *A. stenosperma* and *A. hoehnei*) [3] and the cultivated peanut (*A. hypogaea*). Extracts (80% ethanol) of leaves (before and after UV-induction) were analyzed by HPLC-PAD (high performance liquid chromatography and photodiode array detector) [1]. After UV induction, *A. cardenasii*, *A. stenosperma* and *A. hypogaea* accumulated higher contents of resveratrol that is a potent antioxidant and a phytoalexin induced by biotic and abiotic stress, while *A. hoehnei* accumulated very low resveratrol. However, besides resveratrol, *A. cardenasii* and *A. stenosperma* accumulated higher hydroxycinnamoyl-tartaric acid esters, such as derivatives of feruloyl tartaric acid, even before UV induction. Only *A. hoehnei* accumulated high contents of a non identified flavonoid (profile similar to derivative of kaempferol showing lambda max. at 263 and 346nm and shoulder at 293 and 323nm). These results can contribute to the understanding and use of wild species of *Arachis* in the pre-breeding of peanut.

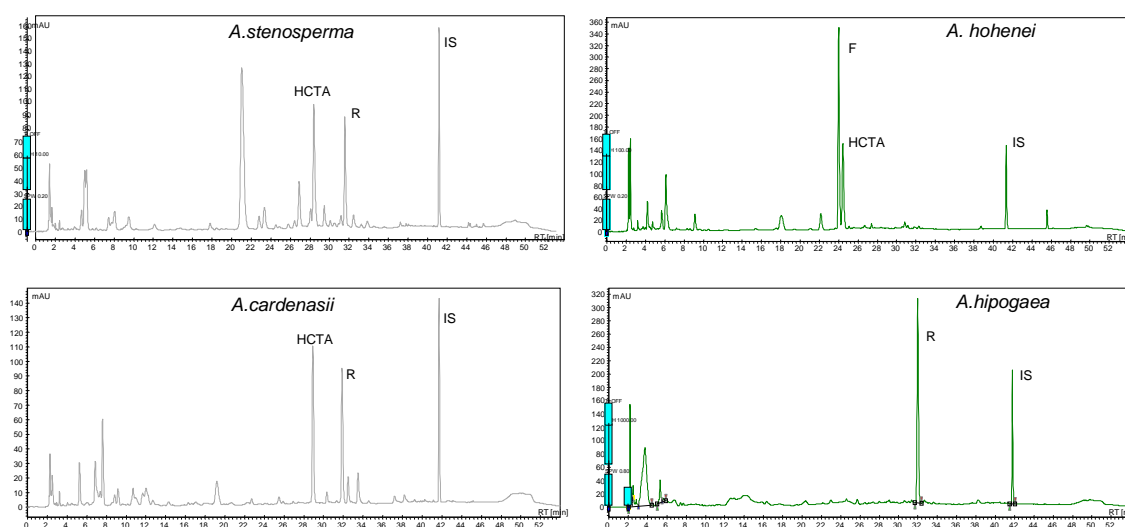


Figure 1. HPLC-PDA profile of *A. stenosperma*, *A. hoehnei*, *A. cardenasii* and *A. hypogaea*. HCTA: hydroxycinnamoyl-tartaric acid esters; R: resveratrol; F: flavonoid; IS: internal standard (phenolphthalein).

References:

- [1] Lopes, R.M., • Silveira, D., Gimenes, M.A., Vasconcelos, P.A., Alves, R.B.N., Silva, J.P., Agostini-Costa, T. S. 2013. Characterization of resveratrol content in ten wild species of genus *Arachis*. *Genet. Resour. Crop Evol.* 60:2219–2226.
- [2] Sullivan, M.L. 2014. Perennial peanut (*Arachis glabrata* Benth.) leaves accumulate hydroxycinnamoyl-tartaric acid esters. *Planta*, 239:1091–1100
- [3] Michelotto, M.D., Barioni, Jr., W., Resende, M.D.V., Godoy, I.J., Leonardecz, E., Fávero, A.P. 2015. Identification of fungus resistant wild accessions of the genus *Arachis*. *PLOS One USA*, June 19: 3-17.