



POSTER: Non-Destructive Analysis of Vegetable Leather Tannins: Viable or Fallible?

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Vegetable-tanned leather is at risk for severe degradation, but not all vegetable leathers are created equal: the choice of tannin impacts aging and deterioration mechanisms. Identifying tannins, therefore, contributes to preservation and conservation decisions, in addition to strengthening an understanding of the process and historic context. Analysis and identification of hydrolyzable, condensed, or mixed tannins has traditionally been a destructive process requiring significant samples.

Conservation professionals prefer minimal to non-destructive methods, and this research intends to contribute to such efforts. Studies by Sebestyén et al. and Vyskocilová et al. published in 2022 introduced a non-destructive analytical technique for the identification of vegetable leather tannins utilizing attenuated total reflectance Fourier transform infrared spectroscopy (ATR-FTIR). The present investigation expands upon their research by assessing their method's reproducibility.

Modern leather samples with known tannins were subjected to microchemical spot tests, ATR-FTIR analysis of sampled extractions, and non-destructive contact ATR-FTIR analysis of the grain and corium. When the contact analysis had consistent data with the extraction method but left marks on the leather, a single fiber ATR-FTIR technique was employed. Spot tests and fiber ATR-FTIR analysis were applied to the case study of a 19th-century leather trunk.

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