04.01 Prospection and extraction of critical and strategic raw materials in Europe

Experience from Plant-Based Exploration in Europe: Reduced Impact, Enhanced Results

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Our research evaluates and optimizes using plants as a geochemical sampling medium, aiming to enhance its applicability and effectiveness in European geological surveys. We share our experience in applying this low-impact, fast, and cost-effective exploration tool gained as part of the EU-funded project SEMACRET, which focused on sustainable exploration for orthomagmatic deposits in Europe.

Biogeochemical exploration has proven particularly valuable in areas with limited geological information, such as those with unknown lithologies, coarse geological maps, and blind deposits. By conducting surveys in typical European settings (from Portugal via Central Europe to Finland), we've gained insights into the effectiveness of biogeochemical exploration in a variety of contexts, including temperate and boreal forests where remote sensing capabilities are limited due to extensive sediment and/or vegetation cover as well as areas with monoculture agriculture. Our work demonstrates how biogeochemical exploration can complement standard geological mapping techniques, providing valuable information for national exploration programs while promoting environmentally and socially responsible practices in domestic exploration.