



An integrated research programme on radiocarbon as a tracer for carbon cycling in New Zealand soils.

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An integrated research programme has recently been established using bomb-radiocarbon as a tracer to assess the uptake and metabolism of carbon in New Zealand soils. This requires technical development of innovative sample preparation procedures for AMS-radiocarbon analysis including individual biomarkers in soils, based on HPLC, Soxhlet extraction and preparative capillary gas chromatography.

Archived samples from New Zealand soils, the oldest dating back to the 1930s, will have a crucial role in this context as they provide the baseline “natural” conditions before human bomb spike interference. The derived quantitative data will provide important input into models regarding the exchange of carbon between different global reservoirs.

The research programme will focus on the role of organic carbon fractionation and soil respiration, residence times of organic matter derived from different New Zealand soil types and the bio-availability of dissolved and eroded carbon derived from soil organic matter.