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# Abstract Submission Form

**Title: The "CNRT BioTop" project: the biological potential of New Caledonian ultramafic topsoils and its management for ecological restoration of degraded mining areas.**

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**Abstract**

"CNRT BioTop" is a multidisciplinary project aiming to study the variations of biological characteristics of New Caledonian ultramafic topsoils and their management to improve ecological restoration methods. Two mine sites have been chosen for field experiments on the evolution of stored topsoils and on the effects of mycorrhizal fungi combined or not with organic amendments, on the adaptation and growth of endemic plant species.

We present some results obtained in this context. Only 15 to 30 % of the initial plant diversity of the area were represented in the seed bank of the topsoil after it have been stripped off and moved to be stored. The evolution of the topsoil seed bank during the storage varied a lot depending on the plant species. Seeds of *Alphitonia neocaledonica* (Rhamnaceae), characterized by a physic dormancy stayed alive after 1 year on stored topsoil, even in deep horizons; but non-dormant seeds of *Gymnostoma deplancheanum* (Casuarinaceae) loosed their viability after 2 months.

The density of viable AMF spores in the 2 studied topsoils were 2 times lower after 1 year storage. The mycorrhizal potential, measured by growing sorghum plants in samples of stored topsoils, was reduced significantly after 6 months storage.

Experiments on coating endemic plant seeds with AMF spores for their use in ecological restoration with hydroseeding method were also performed. Coating seeds with 10% alginate containing a minimum of 100 AMF spores present the better advantages: AMF spores germination was reduced but stayed sufficient to induce mycorrhizal colonization.