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Biochemical activity in forest soils repopulated with different species of *Pinus.*

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In recent decades the autochthonous vegetation in Galicia (NW Spain) has been replaced with other allochthonous forest species of rapid growth habit, mainly of the genera *Eucalyptus* and *Pinus*. The species of *Pinus* most commonly used are *P. pinaster* Aiton, *P. sylvestris* L. and *P. radiata* D. Don. In the present study, several biochemical properties were determined in soils in reforested stands (all more than 20 years old) of these three species, to determine whether the type of pine species result in differences in soil biochemical activity. A total of 43 soils *(Umbrisols)* were selected for study, 27 of which were under *P. pinaster*, 11 under *P. radiata* and 5 under *P. sylvestris*. As well as biochemical characterization, the soils were also characterized in terms of general properties.

The results were analyzed by a Student's$t-$test for independent samples and by discriminant analysis. In general, the properties of the soils developed under the three different species of *Pinus* were very similar. Of the biochemical properties studied, those related to N mineralization and P cycle (phosphomonoesterase) and C cycle (ß-glucosidase) enzymes were most affected by the species of pine in the stand, although the only significant differences in the three groups of soils were in the amount of nitrates derived from mineralization of organic nitrogen. The phosphomonoesterase activity was significantly higher in the soils under *P. pinaster* than in soils under *P. sylvestris*. The discriminant analysis was only capable of correctly classifying 60% of the soils under *P. sylvestris* and 50% of the soils under *P. radiata*, and the properties related to N mineralization and ß-glucosidase activity were those that best indicated

the differences established in the level of biochemical activity in relation to the type of pines under which the soil was developed.