


Original Paper | Published: 02 April 2021

Nitrogen Stocks in Soil Classes Under Different Land Uses in the Brazilian Semiarid Region

[Uemeson José dos Santos](#) , [Everardo Valadares de Sá Barretto Sampaio](#), [Eunice Maia de Andrade](#), [Alexandre de Siqueira Pinto](#), [Bruno de Oliveira Dias](#), [Kennedy Nascimento de Jesus](#), [Mônica da Silva Santana](#), [Tiago Diniz Althoff](#), [Milton Marques Fernandes](#) & [Rômulo Simões Cezar Menezes](#)

Journal of Soil Science and Plant Nutrition **21**, 1621–1630 (2021)

56 Accesses | 1 Altmetric | [Metrics](#)

Abstract

Estimates of soil nitrogen (N) stocks are important for assessing potential nitrogen oxide emissions due to land-use changes and agricultural practices. No comprehensive data set exists for N stocks for the 850,000 km² of the semiarid Brazilian northeastern region, according to land use and soil classes. Changes in N stocks due to the conversion of caatinga to pasture or agriculture, in different soil classes, were quantified in 201 soil profiles down to 1 m deep, except in shallower soils (Leptosols, 50 cm; Luvisols, and Planosols, 80 cm). Acrisols, Arenosols, and Regosols had the larger N stocks (8.07 to 9.72 Mg ha⁻¹) than Ferralsols (6.10 Mg ha⁻¹), whose stocks were similar to those