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CARBON FOOTPRINT OF THE LIFE CYCLE OF COMMERCIAL FOREST PLANTATIONS (EUCALYPTUS GRANDIS AND PINUS PATULA) IN COLOMBIA

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The life cycle analysis methodology was used to determine the carbon footprint for two commercial forest plantations (*Eucalyptus grandis and Pinus patula*) in Colombia. The forestry operations were divided into three processes: Seedling production, planting and soil preparation, and maintenance and control; without considering the felling process in the analysis. The density planted per unit area (ha) is established depending on each species. OpenLCA® software was used for free use to evaluate the emissions for the Global Warming Impact category (carbon footprint), and the Ecoinvent v3.2 database as input of life cycle inventory data for different processes; while the quantities that feed the processes were obtained from the management and commercial forestry plans of the evaluated species. The results of this work indicate that the variations depend on the tree species planted and their management that includes different levels of fertilization, as well as the intensity of forest operations. It is observed that the maintenance and control phase is the stage of the process with the greatest contribution to total CO2 emissions, being a value that counteracts the CO2 captured by the plantations. Currently, work is being done to compare these results with the carbon footprint of the life cycle of protective forest species.

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