



CO₂ Production by Soils of Lazovskiy Reserve, South-East Primorye

Viktoriia Semal (1,2), Lyudmila Purtova (2), Nikolay Kostenkov (2), Olga Nesterova (1), Valentina Tregubova (1), Alla Derbentseva (1), Elena Tyurina (3), Alla Kravchenko (4), Elena Glotova (5), Olesya Sergeeva (4), and Ekaterina Korshenko (3)

(1) the Department of Soil Science, Far Eastern Federal University, Vladivostok, Russian Federation, (2) Institute of Biology and Soil Science, Far Eastern Branch of Russian Academy of Sciences, Vladivostok, Russian Federation, (3) the Department of Management, School of Economics and Management at Far Eastern Federal University, (4) the Department of World Economics, School of Economics and Management at Far Eastern Federal University, (5) the Department of Marketing, Commerce and Logistics, School of Economics and Management at Far Eastern Federal University

CO₂ is practically the only volatile compound in automorphic soils, in the form of which carbon is lost. So the investigation of the carbon dioxide production rate dynamics makes it possible not only to judge the biological processes intensity but also to estimate the organic substance losses due to mineralization.

Lazovskiy Reserve holds a unique geographic location: its territory occupies both biologically rich coastal marine area and continental part of Sikhote Alin south-east branches, including both typical mountainous areas and wide intermountain river valleys. Specific conditions of the organic substance formation and transformation, its seasonal dynamics are due not only to the features of the monsoon climate but also to the availability of unique primeval coniferous broadleaved liana forests in the central part of the Reserve and coastal post-fire successions of the secondary oak forests.

CO₂ emission was observed in the laboratory setting (*ex. situ*), at 100% maximum water holding capacity (MWHC) and at 60% MWHC. It was found that the CO₂ production extensive indicators are typical for Cambisol containing high level of humus. CO₂ mean values at 60% MWHC ranged into a following series: Mollic Cambisol – Cambic Fluvisol – Dystric Cambisol.