XIII Congresso de ECOLOGIA
III International Symposium of Ecology and Evolution
Múltiplas ecologias: evolução e diversidade
08 a 12 de outubro de 2017 • UFV - VIÇOSA | MG

FACTORS INFLUENCING BIOLOGICAL SOIL CRUSTS DISTRIBUTION IN CAATINGA SEASONALLY DRY TROPICAL FOREST

Flávia Oliveira[1*], Artur Gonçalves[1,]

1. Centro de biociências, Laboratório de ecologia vegetal aplicada (LEVA), Universidade Federal de Pernambuco. Av. Prof. Moraes Rego, 1235 - Cidade Universitária, Recife - PE, 50670-901, Brazil. *Correspondence to flaviad.amorim@gmail.com

Tema/Meio de apresentação: Ecologia de ecossistemas/Pôster

Biological soil crusts (BSC) are communities of microorganisms and non-vascular plants that cover soil surfaces, primarily along arid and semi-arid regions of the planet. Formed as an intrinsic association between soil particles and organisms such as cyanobacteria, algae, lichen and moss, BSC can be the main source of primary productivity, soil fertility and energy balance locally. They also account for C and N inputs in the system, as well as reactive N emissions in the form of NO and HONO. This study aims to better understand the BSC cover in the Caatinga, analyzing predicting variables of its presence; thus, contributing to the global assessment of BSC distribution. Through the point-intercept methodology (n=41), the soil cover was analysed, with the quantification of the explanatory variables: (1) trampling area; (2) canopy openness; (3) litterfall; and (4) soil penetrability. The canopy openness was measured using hemispherical photographs ran in the software Gap Light Analyzer. The effects of all the variables were tested using a multiple linear regression test (R^2=0,458; P<0,001). The variable trampling area accounted for the distribution of crusts with great significance (p<0,001). The other variables could not explain the presence of BSC significantly. The disturbance variable was more important to predict BSC presence than the environmental ones. Therefore, the abundance of BSC in the studied area seems to have a stronger correlation with anthropic disturbance than with natural distribution variables. Thus, this study reiterates the reasonably well structured view that trampling acts as a pressure factor limiting BSC distribution. The BSC of the Caatinga may be under especially severe pressure, as the region counts with abundant flocks of goats that may be suppressing the fragile micro biota. This could be an alarming scenario, for the BSC are expected to influence the system's biogeochemistry and global climate regulation.

The authors thank FACEPE grants and scholarships;