

I-INTERNATIONAL MEETING OF ANIMAL SCIENCE IN SEMI-ARID REGIONS

Universidade Federal do Agreste de Pernambuco – UFAPE
July 03rd to 05th, 2024, Garanhuns-PE

Animal Welfare

Quantification of Biomass in Compartments of the Herbaceous Layer in a Network of Long-term Research Sites in the Caatinga Biome

Andressa Silva de Oliveira*¹, Edilândia Farias Dantas Autor², Regina Maria Barreto Campello Sampaio¹, Pedro Vitor Bezerra Venus², Ana Dolores Santiago de Freitas³, Rômulo Simões Cezar Menezes¹.

¹Universidade Federal de Pernambuco, Recife/PE, Brasil; ²Instituto Federal de Pernambuco, Recife/PE, Brasil; ³Universidade Federal Rural de Pernambuco, Recife/PE, Brasil.

The Caatinga covers an area of 912,529 km² and is one of the six major ecological regions of Brazil. The amount of biomass present in this biome is still not well known, mainly due to its phytophysiological differences. Interest in biomass quantification has been growing alongside concerns about global warming, due to carbon storage in the different plant fractions. In the Caatinga, these studies are particularly important because much of its territory has already been converted to other land uses, mainly agriculture and livestock. Thus, the objective was to quantify the biomass of different land uses in different compartments of the herbaceous layer in a network of long-term research sites in the Caatinga biome. Evaluations were carried out in plots located in the municipalities of Arcoverde, Pernambuco. These included the following types of vegetation cover used for livestock purposes in the Caatinga Biome: dense Caatinga, open Caatinga, and herbaceous. In each land use system, two plots of 25 x 25 m (625 m²) were delimited. Within each plot, a 5 m wide border was separated around the entire perimeter, leaving a useful study area of 20 x 20 m (400 m²). These plots were divided into areas with exclusion and inclusion of animals. In each of the four vertices of the useful plot, a sub-plot of 1 x 1 m was delimited, and within these, data were collected on herbaceous and regenerative biomass, necromass, litter, and other life forms. These samples were organized and their estimates interpreted. In the open Caatinga, 0.203 kg/m² of litter was quantified in the exclusion plot and 0.092 kg/m² in the inclusion plot. The herbaceous layer varied from 0.073 kg/m² to 0.064 kg/m² with exclusion and inclusion, respectively. Necromass on the soil was quantified from 0.038 to 0.106 kg/m². In the dense Caatinga, litter, herbaceous, and necromass on the soil varied from 0.112, 0.035, and 0.147 kg/m², respectively, in the exclusion plot, to 0.152, 0.032, and 0.114 kg/m² in the inclusion plot. In the pasture plot with animal inclusion, herbaceous biomass production was quantified at 0.167 kg/m². Quantifying this herbaceous production is essential for understanding the biogeochemical cycling of the ecosystem and for food production and livestock.

Keywords: seasonally dry tropical forest, phytosociology, land use.