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Chemical composition of cactus forage and legumes in monoculture and intercropping, Agreste of Pernambuco

Daniel B. do Nascimento*[1]; Mércia Virginia F. dos Santos[2]; Márcio V. da Cunha[2]; Alexandre C. L. de Mello[2]; André Luiz R. de Magalhães[3], Tuany N. E. de Amaral[4]

[1]Universidade Federal Rural de Pernambuco, Recife/PE, Brasil, PPGZ - bolsista Capes; [2]Universidade Federal Rural de Pernambuco, Bolsista CNPq; [3]Universidade Federal do Agreste de Pernambuco, Garanhuns/PE, Brasil; [4]Universidade Federal do Agreste de Pernambuco, Graduação em Zootecnia, Bolsista PIBIC-CNPq. * danielbnascimento17@gmail.com

Cactus forage is a strategic food for animals, especially in the dry season. The presence of legumes in the system contributes to the addition of nitrogen to the soil, as well as a greater supply of crude protein for animal feed. The farming system can affect the production and nutritional value of forage. The objective was to evaluate the chemical composition of cactus forage and legumes in different cultivation systems. The experiment was carried out at the Experimental Farm of UFRPE 'Professor Antônio de Pádua Maranhão Fernandes'. The experimental design was randomized blocks, with four replications. The experimental treatments were: *Nopalea cochenillifera* ('Miúda'); *N. cochenillifera* + *Desmanthus pernambucanus* ('Miúda' + 'Jureminha'); *N.cochenillifera* + *Clitoria ternatea* ('Miúda' + 'Cunhã''); *Opuntia stricta* ('Orelha de Elefante Mexicana'); *O. stricta* + *D. pernambucanus* ('Orelha de Elefante Mexicana + 'Jureminha'); *O.stricta* + *Clitoria ternatea* ('Orelha de Elefante Mexicana' + 'Cunhã'); *D. pernambucanus* ('Jureminha') and *C. ternatea* ('Cunhã'). The cactus samples were composed of different orders of cladodes, with the plants being harvested at one year of age and preserving the mother cladode. The legumes were harvested every 90 days at a height of 20 cm above the ground, and the nutritional value of the legumes was evaluated for the rainy and dry periods. The means were compared using the Scott-Knott test at a 5% probability level. In the rainy season, 'Cunhã' in monoculture had a higher crude protein (CP) content (181.41 $g.kg^{-1}$ DM), compared to those in intercropping (148.59 and 152.98 $g.kg^{-1}$ DM) with 'Miúda' and 'Orelha de Elefante Mexicana', respectively. In the dry period, higher protein (160.23 and 150.58 $g.kg^{-1}$ DM) was observed in 'Cunhã' in intercropping with 'Miúda' and 'Orelha de Elefante Mexicana' + 'Cunhã', compared to the other cultivation systems. There were no differences ($P>0.05$) in the chemical composition between the monoculture and the cactus forage intercropping. However, a significant difference ($P<0.05$) was observed for the contents of dry matter (DM), mineral matter (MM), organic matter (OM) and CP between the cactus cultivars, with the 'Orelha de Elefante Mexicana', regardless of the cultivation system, presented higher DM content with an average of 94.74 $g.kg^{-1}$ MN and MO 868.89 $g.kg^{-1}$ DM, when compared to 'Miúda'. However, systems with 'Miúda' obtained higher MM content, with an average of 167.69 $g.kg^{-1}$ DM and CP of 71.89 $g.kg^{-1}$ DM. Therefore, it is concluded that intercropping systems affected the chemical composition only of forages legumes.

Keywords: Cactus forage; cropping system; crude protein and native legume.
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