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Chemical composition of forage cactus *Nopalea cochenillifera* Salm-Dyck subjected to post-harvest storage for up to 56 days

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Forage cactus is an important food source for livestock in semi-arid Brazil. However, managing daily cut-and-carry and manual harvests increases usage costs. The objective of this study was to determine the effect of post-harvest storage on the chemical composition of cactus cladodes *Nopalea cochenillifera* Salm-Dyck cv. 'Miuda'. The experiment was carried out at 'Prof. Antônio de Pádua Maranhão Fernandes' Didactic Farm of URFPE, located in Garanhuns - PE, Brazil. The cactus cladodes were harvested in October 2022, with approximately one year old and piled up whole into mounds weighing approximately 120 kg. Storage was carried out in a laterally open and ventilated warehouse, and the cladodes were placed on wooden pallets. A completely randomized design was used, with repeated measurements over time, in which the treatments being different post-harvest storage periods (0, 8, 16, 24, 32, 40, 48 and 56 days), with four replications. In the warehouse, an average internal temperature of 24.9 °C was recorded, with the maximum and minimum being 27.1 and 23.2 °C, respectively. Relative air humidity ranged from 64 to 79%. The sample for determining the chemical composition was composed of cladodes of different orders and collected from different positions in the mounds. The content of dry matter (DM), crude protein (CP), neutral detergent fiber (NDF) and acid detergent fiber (ADF) was evaluated in samples ground in 1 mm. The analyses were carried out at the Laboratory of forage – UFRPE. The data were subjected to analysis of variance and regression. The significance level used was 5%. There was a positive quadratic response for DM, NDF and ADF, and a negative quadratic response for CP. The coefficients of determination were 0.55, 0.39, 0.84, and 0.61 for DM, CP, NDF, and ADF, respectively. A decrease in DM and NDF levels was observed, with stabilization between 24 and 32 days of post-harvest storage, and a subsequent increase. The ADF content increased over the storage period, while there was a higher CP content at time 0, followed by an initial increase, and a decrease at 40- and 56-days post-harvest. The chemical composition of the 'Miuda' cultivar presented average of 88 to 77 g kg^{-1} of DM, 57 to 66 g kg^{-1} of CP, 534 to 615 g kg^{-1} of NDF and 122 to 161 g kg^{-1} of ADF, during post-harvest storage periods. The forage cactus cultivar 'Miuda' can be stored for up to 56 days with minimal variation in chemical composition levels.

Keywords: Cactaceae, Forage quality, Semiarid

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