



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

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

Field of Study: Forage Crops

## Fresh Matter Production of *Gliricidia* Intercropped with Forage Cactus in Different Planting Arrangements

Edes Torres da Silva <sup>\*1</sup>; Albericio Pereira de Andrade <sup>1</sup>; Fernando dos Santos Araújo <sup>1</sup>; Djalma Cordeiro dos Santos <sup>2</sup>; Maria da Conceição Silva <sup>2</sup>; Miguel do Espírito Santo de Sá Antunes Dias<sup>1</sup>

<sup>1</sup>Universidade Federal do Agreste de Pernambuco, Garanhuns - PE, Brasil; <sup>2</sup>Instituto Agronômico de Pernambuco (IPA), Arcoverde – PE, Brasil; \* edestorres@gmail.com

*Gliricidia* [*Gliricidia sepium* (Jacq.) Kunth ex Walp] is a versatile tree legume native to Central America. It grows rapidly and can be used for various purposes, including fodder, living fences, green manure, and reforestation. The plant is well adapted to semi-arid regions and can tolerate prolonged periods of drought. In the Brazilian semi-arid region, finding an adequate food source for livestock is highly challenging. This is due to various factors, including irregular rainfall, the use of non-adapted crops, improper management practices, and a lack of planning. The cultivation of *gliricidia* could be a promising solution to help improve animal nutrition, as this plant is recognized as an excellent protein source. Therefore, this study aimed to analyze the production of *gliricidia* intercropped with Mexican Elephant Ear cactus (*Opuntia stricta* [Haw.] Haw.) in different planting arrangements. These crops are adapted to and widely used as animal feed in the Brazilian semi-arid region, but their cultivation in an intercropping system is not yet fully understood. The field experiment was established in January 2023 at the experimental station of the Agronomic Institute of Pernambuco (IPA) in the Caruaru-PE unit. The experimental design consisted of four treatments, including the monoculture of *gliricidia* and intercropping with forage cactus in three different planting arrangements. The treatments were named as follows: T1 - monoculture; T2 - one row of *gliricidia* alternated with single rows of forage cactus; T3 - double rows of *gliricidia* alternated with one row of forage cactus; and T4 - double rows of forage cactus alternated with one row of *gliricidia*. The treatments were randomly distributed in three blocks. *Gliricidia* was harvested (60 cm above the ground) 365 days after planting. Fresh matter (leaves and herbaceous branches) was weighed in the field. Fresh weight data were subjected to analysis of variance followed by the Scott-Knott post-hoc test at a 5% probability level, using Assisat software version 7.7 beta (2014). Overall, the planting arrangements with lower *gliricidia* density (T2 and T4) showed higher fresh matter production (0.512 and 0.468 kg per plant, respectively). Consequently, the arrangements with higher *gliricidia* density (T1 and T3) showed lower fresh matter production (0.324 kg and 0.272 kg per plant, respectively), likely due to intraspecific competition. This indicates that *gliricidia* will have higher production in arrangements with lower plant density. The better performance of *gliricidia* in arrangements with higher cactus density (T2 and T4) also suggests that forage cactus does not seem to limit the growth of *gliricidia*. Therefore, intercropping *gliricidia* and forage cactus in lower *gliricidia* density arrangements can be an effective strategy to maximize fresh matter production and improve animal nutrition in the Brazilian semi-arid region.

**Keywords:** animal feed, intercropping, *gliricidia*, Brazilian semi-arid

Financial support: CNPq, CAPES, IPA