Amounts of nitrogen absorbed by palisade grass as affected by methods of intercropping corn and palisade grass

Rodrigo Estevam Munhoz de Alemida*[1]; Silas Maciel de Oliveira[2]; Bruno Cocco Lago[2]; Clovis Pierozan Junior[3]; José Laércio Favarin[2]; Rodrigo Veras da Costa[4] and Leonardo José Motta Campos[5]

[1]*Embrapa Pesca e Aquicultura, 77008-900, Brazil*
[2]*ESALQ/USP 13418-900, Brazil*
[3]*IFPR 85555-000, Brazil*
[4]*Embrapa Milho e Sorgo 35701-970, Brazil*
[5]*Embrapa Soja 86001-970, Brazil*

Background:

Intercropping corn (C) and palisa degrass (P) is used in Crop-livestock integration system (CLI). This technique enhanced land use efficiency and allows forage production for cattle during dry season and straw to no till system. Due to the diversity of implements and size of farms, P. seeding can be performed before or simultaneously to C. sowing, broadcasted, mixed with corn fertilizer or in a furrow. There is no information if the methods of intercropping would change the Nitrogen (N) nutrition of C. and the amounts of N absorbed by P.

Methods:

C. and P. N fertilizer efficiency (NUE) using 15^N for three methods of intercropping was investigated. Methods of intercropping are described in Fig. 1.

Results:

The methods of intercropping doesn't affected C. grain yield, N uptake and NUE, which were 8.7 t ha-1, 205 kg ha-1 and 37% respectively. P. produced on average 1.9 t of dry mass, absorbing a maximum of 6 kg ha-1 of N fertilizer during corn growing.

Conclusion:

P. did not affect C. N uptake in any of intercropping methods. P. absorbs at most 5.5% of N-fertilizer applied in C. and P. intercropping system.

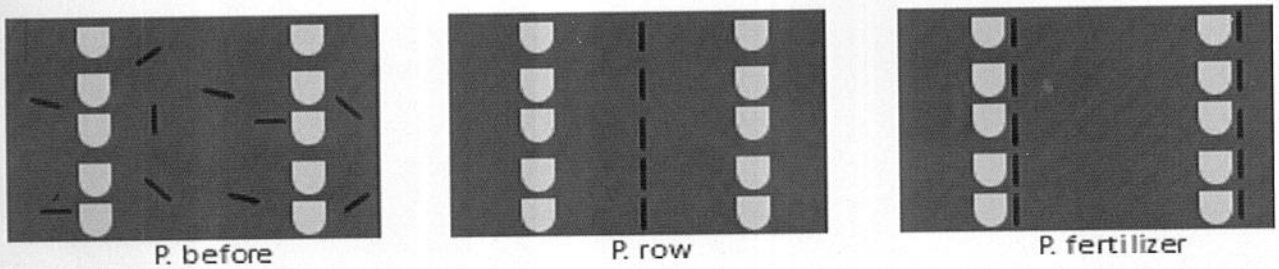

Fig. 1- Methods of intercropping Corn and Palisadegrass: P. broadcasted before sowing C. (P. before); P. sowed in furrow between C. rows (P. row); P. seeds mixed with fertilizer at C. sowing (P. fertilizer).

Biography:

Rodrigo Estevam Munhoz de Almeida has completed his PhD in 2014 from "Luiz de Queiroz" College of Agriculture (ESALQ), University of São Paulo (USP), Brazil. Thesis Title: Nitrogen fertilization in intercropping corn and palisadegrass at weathered soils in crop-livestock integration system. He is the researcher at Embrapa Fisheries and Aquiculture at sustainable cropping systems department.