



**XII** Conferência Internacional  
do Arroz para América  
Latina e Caribe

# HORIZONTES PARA A COMPETITIVIDADE

PORTO ALEGRE, RS, BRASIL  
23 -26 DE FEVEREIRO DE 2015

## ANAIS



Realização



Promoção



Apoio



Patrocinadores



# XII CONFERÊNCIA INTERNACIONAL DE ARROZ PARA AMÉRICA LATINA E CARIBE

## ANAIS

**Horizontes para a competitividade**  
Porto alegre, RS, Brasil. 23 a 26 de fevereiro de 2015

Realização:



Promoção:



GOVERNO DO ESTADO  
RIO GRANDE DO SUL  
SECRETARIA DA AGRICULTURA,  
PECUÁRIA E AGRONEGÓCIO



Apoio:



Patrocinadores:



## NO-TILLAGE IRRIGATED RICE RESPONSES TO NITROGEN ON CONTRASTING COVER CROPS

<sup>1</sup>TERRA, J.A., <sup>1</sup>MENDEZ, R.

**Keywords:** rice-pasture rotations, N use efficiency.

In Uruguay rice rotate with perennial pastures that are terminated 7-9 month prior to crop seeding. This allows tillage, plane and land systematization in summer, but expose the soil to nitrogen losses during fall-winter. Cover crops between the summer tillage and the rice seeding may contribute to trap N and maintain it in the system for rice. We evaluated no-tillage rice grain responses to nitrogen on five winter covers during two years. Covers were implemented immediately after anticipated tillage (February) and consisted in red clover (RC: *Trifolium pratense*), annual ryegrass (AR: *Lolium multiflorum*), sweet sorghum (SS: *sorghum bicolor*), spontaneous vegetation (SV) and bare soil (BS) that were terminated 3 weeks before rice seeding (Oct. 10<sup>th</sup>). Nitrogen was applied to no-tillage rice at rates of 0, 62, 82 and 102 kg N ha<sup>-1</sup> split at planting, tillering and panicle initiation. In the first year, no cover x N interaction was observed in productivity. The highest mean yield was observed in RC and BS (11.06 Mg ha<sup>-1</sup>) and the lowest in AR (10.09 Mg ha<sup>-1</sup>). Unexpected, the highest productivity without N was obtained in BS (10.37 Mg ha<sup>-1</sup>) that had the lowest response to fertilizer (12%). The highest response to N was observed in SV (28.5 kggrain kg<sup>-1</sup> N). In the second year, rice N responses interacted with covers. The greatest rice yield without N was obtained in RC (9.21 Mg ha<sup>-1</sup>) and the lowest in AR and SV (6.95 and 6.63 Mg ha<sup>-1</sup>, respectively). However, rice in RC and BS adjusted quadratic models and reached maximum yield at 94 and 71 kg N ha<sup>-1</sup>, respectively (10.55 Mg ha<sup>-1</sup> and 9.60 Mg ha<sup>-1</sup>); other covers adjusted lineal models with similar slope but with higher productivity in SS (10.42 Mg ha<sup>-1</sup>) than AR ( 9.67 Mg ha<sup>-1</sup> ) and SV ( 9.59 Mg ha<sup>-1</sup>). The aggregate of data suggests for rice-pasture systems, AR and SV commonly used by farmers may not be the best option for no-tillage rice.

---

<sup>1</sup>Instituto Nacional de Investigación Agropecuaria. INIA Treinta y Tres. Ruta 8 Km. 281, Treinta y Tres – Uruguay.  
[jterra@inia.org.uy](mailto:jterra@inia.org.uy)