SELECTIVITY OF BISPYRIBAC-SODIUM AND PENOXULAM ON TROPICAL *japonica* RICE VARIETIES IN EASTERN URUGUAY

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INTRODUCTION

Application of bispyribac-sodium, an ALS inhibitor herbicide as well as penoxulam, can reduce shoot and root growth of rice plants depending on vegetative stage and variety type (Zang and Webster, 2002). Currently, climate change is going on and occurence of lower temperature than normal will be more common in the early growing season of the eastern Uruguay.

OBJECTIVE

To study bispyribac-sodium and penoxulam selectivity on tropical *japonica* rice cv. INIA Tacuarí and cv. Parao.

MATERIALS AND METHODS

A field experiment was conducted at Experimental Unit of Paso de la Laguna (UEPL) in 2011 and 2012. Two tropical *japonica* rice varieties were seeded:INIA Tacuarí (Newbonnet/NewRex L79) released by 1992 and Parao (INIATacuarí/L1844(Bluebelle/Leebonnet)/(Lemont/L143tx)) recently released by 2012.

The treatments assessed were: a check, without herbicide spraying, one for INIA Tacuarí and another for Parao. Bispyribac-sodium at 40 and 80 g a.i. ha^{-1} and penoxulam at 36 and 72 g a.i. ha^{-1} were sprayed. Treatments evaluated were randomly assigned to plots and were displayed in a RBCD with three replications.

Treatments were sprayed at 2 to 3-leaf stage of rice plants using a CO_2-backpack sprayer, delivering 140 L ha^{-1}. Rice yields were adjusted by head and milled yield, chalky and stained grain percentages and they were expressed on 13% moisture content.

Table 1. Crop management. UEPL, 2011 and 2012.

	Year	
Agronomic practices	2011-2012	2012-2013
Seeding date	oct-06-11	oct-04-12
Density	650 viable seeds m^{-2}	
Fertilization	130 kg ha^{-1} de 18-46-0	
Date of spraying	nov-04-11	nov-01-12
Flush date	not used	nov-09-12
Flooding date	nov-17-11	nov-12-12
Urea over the top		
Before flooding	50 kg ha^{-1} nov-17-11	50 kg ha^{-1} nov-12-12
Internode elongation	50 kg ha^{-1} dec-23-11	50 kg ha^{-1} dec-14-12

RESULTS AND DISCUSION

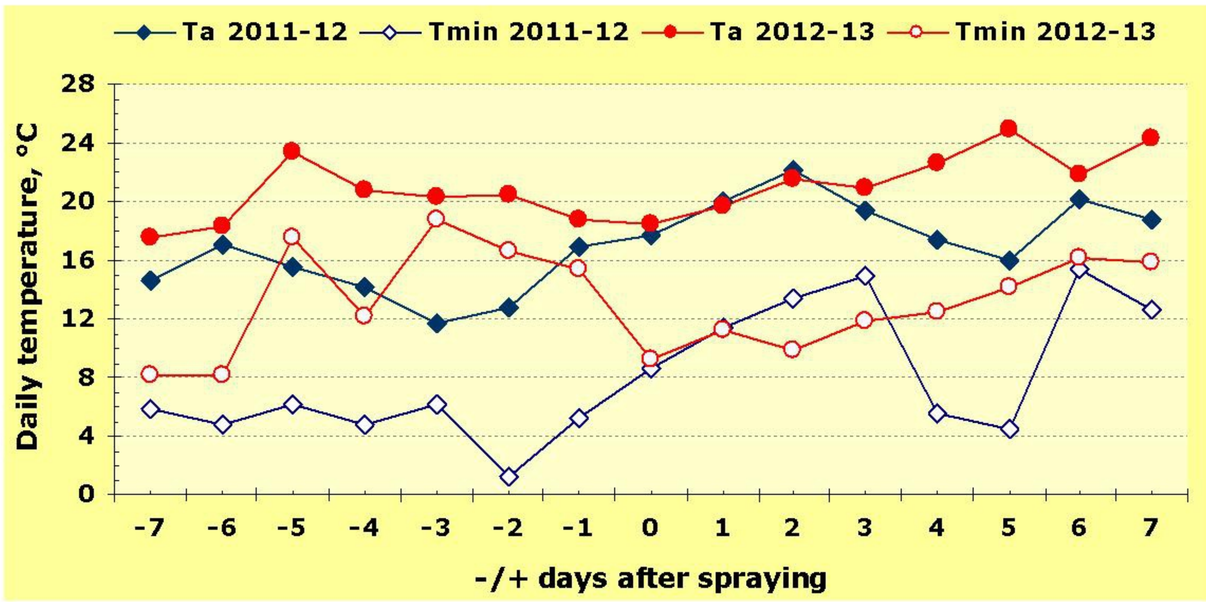

Figure 1.- Daily air temperature ± 7 days around spraying date. UEPL, 2011 and 2012. Ta=average temperature under shelter, Tmin= minimum temperature outside over 5 cm height of sward. UEPL, 2011 and 2012.

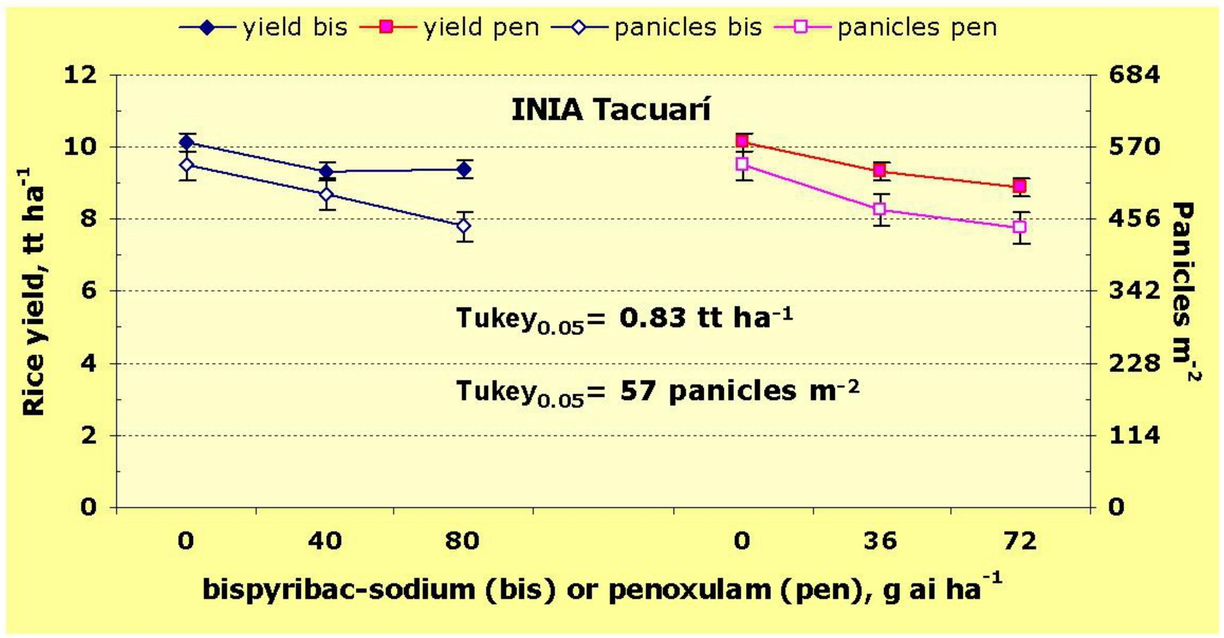

Figure 2.- Rice yield and panicles as affected by bispyribac-sodium and penoxulam rates when postemergence apllied over INIA Tacuarí. UEPL, 2011 and 2012.

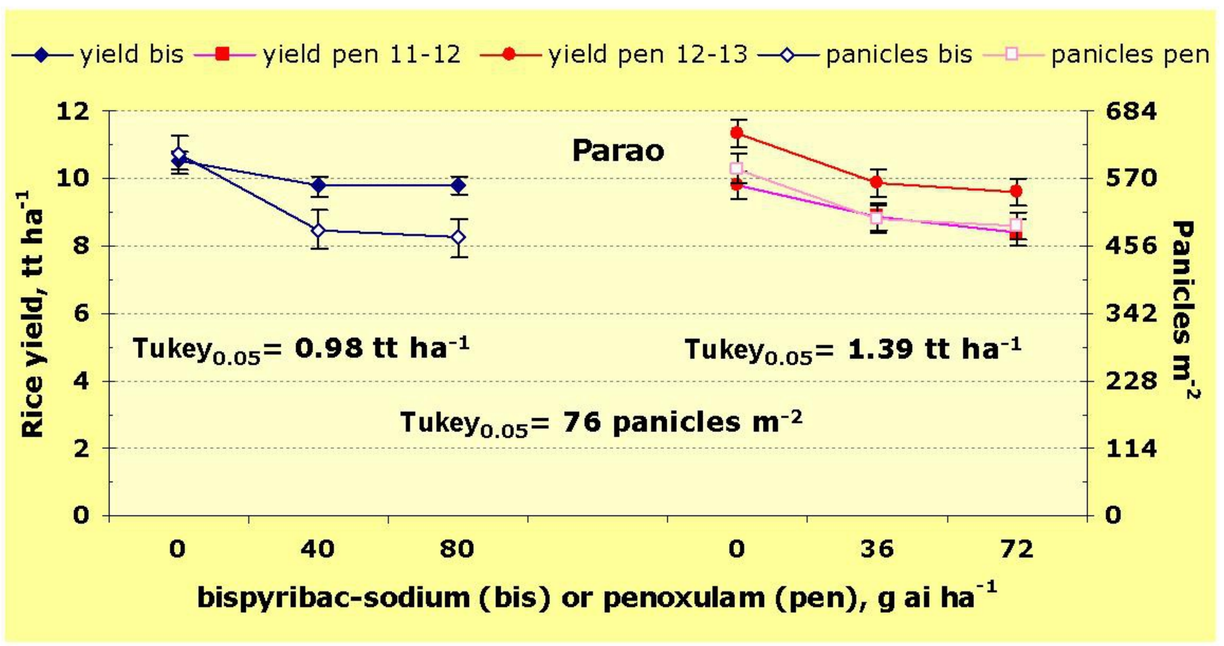

Figure 3.- Rice yield and panicles as affected by bispyribac-sodium and penoxulam rates when postemergence apllied over Parao. UEPL, 2011 and 2012.

CONCLUSIONS

When bispyribac-sodium and penoxulam had been applied at early vegetative stage under lower temperature than normal, growth was stunt compared to check. Bispiribac-sodium may be safely used at 40 g ha^{-1} on INIA Tacuarí as well as Parao, just showing a slight flowering delay in INIA Tacuarí. Penoxulam did not reduced rice yield on INIA Tacuarí but it did on Parao, looking more sensitive at the highest rate. Penoxulam application on Parao should be used at the lower rate specially when air temperature was below 21 °C.

LITERATURE CITED

Zhang, W. and Webster, E. 2002. Shoot and root growth of rice (*Oryza sativa*) in response to V10029. Weed Technology, vol 16:768-772