



ISBN 978-85-66836-16-5

ANTAGONISM OF *Azospirillum brasilense* TO LEAF PATHOGENS OF RICE IN THREE PRODUCTION SYSTEMS IN MARANHÃO<sup>1</sup> /Antagonismo de *Azospirillum brasiliense* a patógenos foliares de arroz obtidos em três sistemas de produção no Maranhão. P. BITU<sup>2</sup>; L. SILVA<sup>2</sup>; A. RODRIGUES<sup>2,3</sup>; G. FONSECA<sup>2</sup>; J. NETO<sup>2</sup>; R. RIBEIRO<sup>4</sup>/ <sup>2</sup>POSTGRADUATE PROGRAM IN AGROECOLOGY/ <sup>3</sup>DEPARTMENT OF PHYTOTECHNICS AND PHYTOSANITY/ <sup>4</sup>STATE UNIVERSITY OF MARANHÃO, SAO LUIS, 65055-310, BR. STATE UNIVERSITY OF MARANHÃO, SAO LUIS, 65055-310, BR. E-mail: menezesbitu@hotmail.com

Diazotrophs bacteria can improve plant growth and nutrient cycling not only for the supply of nitrogen, but other mechanisms such as production of plant hormones and substances that help the root growth as indoleacetic acid, phosphate solubilization and promoting antagonism to plant pathogens. This project evaluates the potential of *Azospirillum brasiliense*, against the main pathogens of rice of three distinct rice production systems of Maranhão state: 'vazante' (transplanting o lakeshores), irrigated and upland rice. Rice fields were visited to collect leaves of healthy plants and subsequent isolation and identification of the isolate of *Azospirillum brasiliense*, rice endophytic microorganism, through selective culture medium. The main pathogens found in the field (*Bipolaris oryzae*; *Curvularia lunata* and *Nigrospora oryzae*) were used in the evaluation of the *in vitro* capacity of antagonism against the field isolated and a commercial product based on *A. brasilense*. To evaluate the antagonism, two methods of bacterial disposal were also used in the culture medium: three stripes and circle, in which the fungi were inoculated by means of discs containing 5 mm mycelia. The culture medium used to allow the growth of fungi and bacteria was nfb-potato. In the three-striped method, three parallel stripes of 9cm were made around the mycelial disc and in the circle method, circles of 9cm in diameter were made, both to prevent the natural growth of the fungi. There was no difference between the circle and streak methods (3.75 and 3.93cm, 3.16 and 3.3cm, 3.26 and 3.7cm), respectively, for *B. oryzae*; *C. lunata* and *N. oryzae*, as to mycelial growth; as well as between the native isolate (3.5, 3.4 and 3.7cm) and commercial product (3.3, 3.7 and 3.79cm) respectively against the same pathogens. The isolate used presented antagonism to pathogens in rice. This way we conclude that the occurrence of diseases in rice plants in the three cropping systems is common and wild isolates presented antagonism to pathogens in rice, not differing from commercial product.

**Key words:** Biological control; Diazotrophs bacteria; Foliar diseases; *Oryzae sativa*.