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Adoption and tendencies of precision agriculture technologies in the Tocantins State, Brazil.

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Although precision agriculture is widely used throughout Brazilian crop production, it has not been used to increase the efficiency use of agricultural inputs. Besides, technologies available have not been applied in its optimum potential. Tocantins, Maranhão, Piaui and Bahia states are the last frontier for agricultural expansion. Considering the soybean, corn and cotton yield levels in these states are close to the average of the "Cerrado" region; however, there are knowledge gaps that must be filled out. Nowadays, Tocantins is responsible for about 46% of soybean production in the Northern Brazil. In the State, precision agriculture technologies are restricted to the use of grid soil sampling to produce soil fertility and nutrient status maps. The use of precision agriculture in this region is restricting applying lime at variable rate application. Moreover, even with machineries equipped with GPS and yield monitors, most farmers do not use all the potential of precision agriculture management strategies and equipment. The understanding of barriers to adoption of precision agriculture in Tocantins might increase crop yields, and project further needs in research, development and innovation. The objective of this research is to diagnose the adoption level and the barriers of precision agriculture technologies use available in Tocantins. This will be carried out by the application and analyses of a survey based on the annual CropLife/Purdue University Precision Ag Survey. Data were collected through interview and with both paper and digital based questionary with farmers and agronomists consultants, across 10,000 km in the Tocantins State. It is expected indentify the mains barriers, risks and opportunities for the precision agriculture adoption and strategies to increase adoption that could be elaborated. This pilot project can be replicated across Brazilian crop production areas to compare adoption and perceptions of precision agriculture.

Keywords: Adoption, Barriers, Technology, Survey

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