

ADOPTION LEVEL OF PRECISION AGRICULTURE FOR BRAZILIAN FARMERS - 2011/12 CROP YEAR

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ABSTRACT

Although Precision Agriculture (PA) concepts and technologies are widespread in Brazil, its application still little used in some important crop production regions. The purpose of this study was to survey the current adoption level of PA by printed and online questionnaire. We started making a specific questionnaire to farmers and PA service companies using some technology related to PA. The questionnaires were developed based on the methodology of Whipker and Akridge (2009), adapted to our regional conditions. In addition to printing the questionnaires, an informative email was created and available on-line. In this case, an email newsletter was prepared calling producers and technicians to access the questionnaire and reply spontaneously to the questions raised. Access to the questionnaire was done by the link: <https://docs.google.com/spreadsheet/viewform?formkey=dDNfcWhvSUdXUjh2NkM1VnBtT09NbWc6MQ>. The following information was raised: how long the growers started the PA in their farms, area with PA, considering lime, fertilizer and pesticides application; in which managements PA helps in decision making; conducting soil analysis georeferenced (chemistry and physics); grid sampling area; stratified sampling; how the work is done for PA (only for companies or have own equipment); PA equipment on the own machinery; which operations are performed on variable rate; observations after adoption the PA (reduction in costs production, e.g.); problems of equipment maintenance and software for use of PA; technical assistance, expected investment; observations of crop yield increase, barriers to implementation and use of

the PA in the region, or even the entire property. A number of 250 questionnaires were distributed by e-mail inviting farmers and PA service companies to answer; moreover, a technical meeting was held at the city of Guaraí, Tocantins State. After response analysis, results showed that 67% of the farmers reported that the adoption time of the PA ranged from 2 to 5 years. The soil grid size was 5 ha and the soil sampling was carried out by PA companies; however, equipment and data interpretation are done by technical team of farm. Although the growers cannot realize reduction on the production costs for using PA technologies, they disagree that PA costs can be more than the benefits observed. The farmers pointed out that software and equipment used in the PA are the main constraints for increasing the investment in this technology. Considering that the survey was applied to farmers and PA service companies from different crop production regions of Brazil, we observed that the use of PA is recent. Even aware that PA and its benefits, PA use is still restricted to a small group of farmers and is necessary a strong information access and training in order to achieve a more effective and efficient PA use. PA adoption is increasing in several Brazilian regions mostly based on PA profitability; however, in some cases, growers are having difficult to measure the real impact and profitability of PA use in crop production. PA increase adoption constraints in Brazil are mostly related to profitability, growers with limited knowledge to use software and equipment, and limited available training of field team.

Keywords: Agribusiness, producers, survey, adoption

ACKNOWLEDGEMENT

The authors thank Agrisus Foundation by the financial support of this research.

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