



Tropentag, September 11-13, 2024, hybrid conference

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Bioeconomy and Brazilian agribusiness: Perspectives and challenges of the national bioinputs program

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Abstract

The utilisation of bioinputs has gained prominence in both conventional and organic agricultural systems. In this context, this paper discusses sustainable development in Brazilian agribusiness through the National Bioinputs Program, aiming to reduce dependence on chemical inputs and increase sustainability in agricultural production. It addresses the bioeconomy as a new paradigm for agribusiness, highlighting the importance of technological innovations and the regulation of the sector to promote the use of bioinputs. From documental research and literature review, the study analyses the challenges and perspectives of this program. So far, there are 526 bioinputs registered in Brazil for phytosanitary control against various pests and diseases across different agricultural crops. These bioinputs span eleven classes, with only two lacking bioproducts suitable for organic agriculture: microbiological bactericides and pheromones. Despite the availability of bioinputs, their practical adoption remains limited. Factors contributing to this include financial constraints, inadequate awareness of their existence, and unfamiliarity with their application methods. As main challenges, we identified the need for public policies that encourage research and development, as well as regulation mechanisms that ensure the efficacy and safety of new bioinputs. Additionally, many farmers face financial limitations, hindering their ability to invest in bioinputs and their insufficient knowledge about bioinputs and their benefits impedes their widespread adoption. Farmers need guidance on the proper use of bioinputs to maximise their effectiveness. We conclude that, despite these identified challenges, the bioeconomy and associated development and use of bioinputs represents a significant opportunity for Brazilian agribusiness, promoting sustainability and competitiveness in the global scenario. Therefore, there is a need for increased awareness, financial support, and targeted education to fully harness potential of bioinputs.

Keywords: Bioeconomy, bioinputs, Brazilian agribusiness, public policy, sustainability