

## **BIOTECHNOLOGY RESEARCH IN AGRIBUSINESS: an analysis of co-authorship networks**

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Agradecimento à orgão de fomento:

This research was funded with Scientific Initiation Scholarship grant #2023/11455-0, São Paulo Research Foundation (FAPESP).

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### **Introdução**

Biotechnology can be explained as “any technological application that uses biological systems, living organisms or their derivatives, to make or modify products or processes for specific use” (UN, 1992, Art. 2). In the context of agribusiness, the use of biotechnology focuses on genetic applications that aim to improve processes in cultivation, production, and the genetic improvement of animals or plants. In this way, co-authorships were analyzed. Glänzel and Schubert (2004) define that co-authorship represents one of the most evident and detailed forms of scientific collaboration.

### **Problema de Pesquisa e Objetivo**

The problem of this research is: what are the structural characteristics of the co-authorship network in Biotechnology research applied to agribusiness, including its density, centralities and gaps in scientific collaboration? The aim of this work is to map and analyze the co-authorship network in Biotechnology research applied to agribusiness, identifying collaboration patterns, main influencers and opportunities to strengthen scientific cooperation, based on the articles available in the main Web of Science database.

### **Fundamentação Teórica**

Biotechnology is an area of disciplinary science associated with innovation networks, and is extremely important due to the complexity of the topic and its great potential (Lourenço, 2021). Scientific collaborations are important to understand the levels of interinstitutional or international collaboration generated by co-authorship networks, therefore, there is a need to verify technical-scientific collaborations (Katz; Martin, 1997), at the same time as in previous analyses, Florêncio et al. (2020) find fragmented networks under a Social Network Analysis (SNA).

### **Discussão**

The analysis of 805 articles, 395 journals can be seen, of which the largest number of publications refer to 3 main publishers, while the countries are concentrated in the USA, China and India. The sample presented fragmented networks, with 0.2% density and 0.15% centralization, it is possible to notice some groups with a large number of collaborations. The maximum distance between any pair is 9 actors, that intermediates co-authors, centralizes information and consequently reflect the measure of the network's diameter, representing the greatest geodesic distance between the co-authors.

### **Conclusão**

As demonstrated, among 805 selected articles, 4,237 actors with 34,928 connections were verified and it was possible to reliably verify the collaborations between the actors, represented by the co-authorships, although the network is very fragmented, indicating small groups that worked by themselves and that could have more collaborations between the authors and between the research groups. Future studies should consider investigating the reasons for the spikes in publications in 2021 and 2022, in addition to understanding how researchers were collaborating during the pandemic period.

### **Referências Bibliográficas**

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