



## ORIGINAL ARTICLE

## Memory and Science: Reviewing 30 Years of the Pesquisa Agropecuária Gaúcha Journal

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**Abstract** – Regional scientific journals play a crucial role in the dissemination of locally relevant knowledge and the strengthening of research networks. For three decades, Pesquisa Agropecuária Gaúcha (PAG) has served as a central vehicle for publishing applied agricultural research in southern Brazil. This study investigates the co-authorship patterns and institutional affiliations of the most productive authors in PAG over its 30-year publication history. Drawing on scientometric indicators and Social Network Analysis (SNA), the research identifies the top 40 authors ranked by productivity, degree centrality, betweenness centrality, and PageRank. The results reveal that public research institutions, particularly SEAPI-RS, Fepagro, and Embrapa, play a dominant role in the journal's scientific output, with federal universities such as UFRGS also contributing significantly. Community detection reveals cohesive clusters, most notably those centered on SEAPI-RS and UFRGS, which reflect the structured and sustained nature of regional scientific collaboration. The analysis underscores PAG's role as a strategic platform for disseminating applied agricultural research in southern Brazil and demonstrates the value of network-based approaches for characterizing the dynamics of scientific collaboration in specialized journals.

**Keywords:** Agricultural research. Co-authorship networks. Scientific collaboration. Scientometrics. Social Network Analysis.

## Memória e Ciência: Revisando os 30 Anos da Pesquisa Agropecuária Gaúcha

**Resumo** – Periódicos científicos regionais desempenham um papel crucial na disseminação de conhecimento localmente relevante e no fortalecimento de redes de pesquisa. A Pesquisa Agropecuária Gaúcha (PAG) tem atuado, ao longo de três décadas, como veículo central para a publicação de pesquisas agrícolas aplicadas no sul do Brasil. Este estudo investiga os padrões de coautoria e as afiliações institucionais dos autores mais produtivos da PAG ao longo de sua história editorial. Com base em indicadores cientométricos e na Análise de Redes Sociais (ARS), a pesquisa identifica os 40 autores mais relevantes, ranqueados por produtividade, grau, centralidade de intermediação e PageRank. Os resultados revelam que instituições públicas de pesquisa, especialmente SEAPI-RS, Fepagro e Embrapa, desempenham papel predominante na produção científica do periódico, com significativa participação também de universidades federais, como a UFRGS. A detecção de comunidades identifica agrupamentos coesos, com destaque para aqueles centrados na SEAPI-RS e na UFRGS, refletindo a natureza estruturada e contínua da colaboração científica regional. A análise reforça o papel estratégico da PAG como plataforma para disseminação da pesquisa agrícola aplicada no sul do Brasil e evidencia a utilidade de abordagens baseadas em redes para caracterizar a dinâmica da colaboração científica em periódicos especializados.

**Palavras-chave:** Pesquisa agrícola. Redes de coautoria. Colaboração científica. Cientometria. Análise de Redes Sociais.

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## Introduction

A historical analysis of scientific communication is essential for understanding how knowledge is produced, disseminated, and anchored in specific regional contexts. Equally important is the identification of representative authors and institutions that have shaped these trajectories, as their contributions reveal the social and institutional dynamics underlying scientific advancement. Within this perspective, the history of Pesquisa Agropecuária Gaúcha (PAG) offers valuable insights into the evolution of agricultural research in Rio Grande do Sul. Established in 1995 under the auspices of the State Secretariat of Agriculture, Livestock, Sustainable Production and Irrigation (SEAPI/RS), PAG has completed three decades of continuous contribution to the field, culminating in its 30th anniversary in 2024. Throughout its history, the journal has mirrored the shifting priorities and challenges of the agricultural sector, serving both as a repository of applied research addressing local realities and as a record of broader transformations in agricultural practices, technological innovation, and public policy. The sustained participation of representative authors and institutions has not only strengthened the journal's scientific credibility but also ensured that the knowledge disseminated remained closely aligned with regional needs. Consequently, the trajectory of PAG exemplifies the consolidation of scientific communication in Rio Grande do Sul and highlights the critical role of institutional engagement in fostering open access dissemination while bridging researchers, extension agents, field professionals, and policymakers.

In recent years, increasing attention has been directed toward understanding patterns of scientific collaboration in agricultural research. Brum, Lampert, and Camargo (2019) offered a comprehensive

bibliometric analysis of the application of Business Intelligence (BI) and Data Warehouse (DW) technologies within the agrarian sector over a decade, from 2001 to 2010. Their study revealed countries which are leading contributors to this field and the most frequently cited authors. Similarly, Settle *et al.* (2020) examined articles published over a decade in the Journal of Agricultural Education, identifying the most prolific contributors often held central positions within the co-authorship network.

Popp *et al.* (2018), in a study of articles from the Food Policy journal (2006–2015), reported that a limited number of researchers accounted for the majority of publications. Interestingly, network centrality does not always align with publication volume, suggesting that productivity alone does not determine influence in scientific collaboration. In the Brazilian context, Vanz *et al.* (2023) examined collaborative strategies in agronomy research. Their findings emphasized how institutional profiles shape patterns of co-authorship. Similarly, Romero-Riaño, Guerrero-Santander and Martínez-Ardila (2021) mapped co-authorship networks in Colombian agronomy publications, identifying key individuals and institutions that function as central nodes for knowledge dissemination.

More recently, Kohli *et al.* (2025) conducted a scientometric analysis of articles published from 2014 to 2024, retrieved from the Scopus database, to map the main challenges in food supply chain management and assess the role of emerging technologies in addressing them. Complementarily, Mahat (2025), through a bibliometric analysis of articles published between 2014 and 2023, documented significant transformations in agribusiness research, emphasizing sustainability practices, technological innovation, and socioeconomic dimensions.





Building upon this body of research, the present study aims to identify the most influential authors in the history of PAG by analyzing its co-authorship network. The objective is to assess the contributions of these individuals to the journal's consolidation as a key platform for disseminating agricultural research at both regional and national levels.

## Material and Methods

This study is classified as applied research with a descriptive objective, quantitative approach, and documentary procedure. Data collection was conducted using publicly available content from the PAG journal's website, without any interference in editorial processes. The analytical focus lies in identifying co-authorship patterns and the structure of the scientific collaboration network established throughout the journal's history. The methodological framework is grounded in concepts from scientometrics and Social Network Analysis (SNA) (Ullah *et al.*, 2022; Schäfermeier; Hirth; Hanika, 2022).

Data extraction was performed using a web scraping technique, which enables the automated and structured collection of data from web pages (Aydin, 2018). A script written in the R programming language was developed using the *rvest* and *httr* packages to systematically navigate the PAG website (<https://revistapag.agricultura.rs.gov.br/ojs/index.php/revistapag>) and extract metadata from articles published between volume 1, issue 1 (1995), and volume 30, issue 1 (2024). The script was executed in May 2025.

Following the collection of 578 articles, data preprocessing was conducted to standardize author names. Initially, 2,327 unique author name entries were identified. The Levenshtein distance algorithm was applied to measure string similarity, allowing the detection of orthographic variations in names referring

to the same author (e.g., “Henrique Pereira dos Santos”, “Henrique Pereira Santos”, and “HENRIQUE PEREIRA SANTOS”). In accordance with the request of the journal's editorial board, the authors' names have been partially anonymized, with only their initials being used.

A threshold of five or fewer character differences was adopted to flag potentially equivalent names. Ambiguous cases were manually reviewed to prevent the incorrect merging of homonyms. After this disambiguation process, the final dataset consisted of 1,422 distinct authors and 3,840 co-authorship interactions. This disambiguation protocol has been successfully applied in previous studies in the field (Camargo; Camargo, 2018; Camargo *et al.*, 2020; Afolabi; Ayo; Odetunmbi, 2021).

Based on the normalized data, a co-authorship network was constructed and modeled as an undirected graph, where nodes represent authors and edges denote co-authorships in PAG articles. The analysis was guided by classical graph theory metrics (Gross; Yellen; 2023), including the following indicators:

- Publications (Pub): Total number of articles in which the author appears as a co-author.
- Degree: Number of distinct co-authors with whom the author has collaborated.
- Betweenness Centrality (BC): Measures the author's influence as a bridge between different subgroups within the network (Umadevi, 2013).
- PageRank (PR): Assesses the structural importance of the author within the network, taking into account the relevance of their connected co-authors (Wang *et al.*, 2013).
- Community (Com): Groups of authors with high internal connectivity, identified using the Louvain community detection algorithm (Blondel *et al.*, 2008). Community 1 refers to



the largest group identified.

- Institutional affiliation: Determined based on the most recent publication by each author.

The scripts for data collection, preprocessing, and network construction were developed in R (R Core Team, 2025), version 4.4.2 (2025-02-28), using the following packages: stringr (v. 1.5.1) and stringi (v. 1.7.6) for string manipulation; dplyr (v. 1.1.4) for tabular data manipulation; rvest (v. 1.0.4) and xml2 (v. 1.3.3) for web data extraction.

The construction and visualization of the co-authorship network, as well as the computation of PageRank, betweenness centrality, and community detection metrics, were conducted using Gephi software (version 0.10.1) (Bastian; Heymann; Jacomy, 2009). The network layout was generated using the Fruchterman–Reingold algorithm.

To ensure transparency and reproducibility, all data used and generated in this study are publicly available in the following repository: <https://github.com/Sandrocamargo/publications/tree/main/pag25>.

Results and Discussion

Table 1 presents the ranking of the 40 most productive authors over the 30-year history of the PAG Journal. The table is organized in descending order by number of publications, degree, betweenness centrality, and PageRank. Due to space constraints, only the authors with the top three values for each metric were included in the discussion, and their corresponding values were highlighted in bold to facilitate the identification of the most prominent contributors in each network dimension. To ensure the inclusion of the top three authors for each metric, a minimum publication threshold was established. This threshold, set at seven publications, resulted in a final ranking of the 40 most

productive authors, filtered from a total of 1,422 contributors.

The analysis of this ranking of the PAG Journal history reveals significant insights into the collaborative landscape of agrarian research in southern Brazil. H. P. S. (Rank 1) of Embrapa Trigo leads with 21 publications, underscoring Embrapa's pivotal role in regional agricultural research. Following closely are R. M. (Rank 2) from the former State Foundation of Agricultural Research (Fepagro), currently integrated into the Department of Agriculture, Livestock, Sustainable Production and Irrigation of Rio Grande do Sul (SEAPI-RS), and R. F. (Rank 3), from the Department of Agricultural Research and Diagnostics (DDPA), also a division of SEAPI-RS. Both authors have 19 publications, highlighting the strong and sustained contributions of state-level public research institutions to the journal’s scientific output.

Beyond publication count, the degree metric, which represents the number of distinct co-authors, offers valuable insight into the breadth of a researcher’s collaborative network. P. V. D. S. (Rank 5) from the Federal University of Rio Grande do Sul (UFRGS) and B. G. B. (Rank 20) from DDPA/SEAPI-RS, both with a degree of 37, exemplify highly collaborative profiles, having engaged with a wide range of colleagues over time. L. S. C. (Rank 25), also from DDPA/SEAPI-RS, similarly displays a high degree of 35, reinforcing her central role in fostering diverse research partnerships. These highly connected authors serve as bridges across institutional and disciplinary boundaries, enhancing knowledge exchange and promoting the advancement of regional agricultural research.

Centrality measures further illuminate the influence of these researchers within the co-authorship network. For instance, A. T. (Rank 18) from SEAPI-RS exhibits the highest betweenness centrality (0.047845),





indicating his role as a key connector among different research groups. Similarly, M. D. (Rank 33) from UFRGS and F. I. F. C. (Rank 11) from UFPel show notable centrality scores, reflecting their significant positions within the collaborative network.

The PageRank (PR) metric offers a more nuanced assessment of an author's structural importance within the co-authorship network. Unlike degree, which measures the number of direct connections, PR accounts for the influence and connectivity of those co-authors, thus highlighting authors who are embedded in strategically significant positions. For example, P. V. D. S. (Rank 5) from UFRGS stands out with the highest PR scores (0.004342), indicating that his collaborations are not only numerous but also well-connected within the network. Similarly, R. M. (Rank 2) from Fepagro/SEAPI-RS and F. I. F. C. (Rank 11) from UFPel display high PR values, reflecting their integration within influential clusters of collaboration. High PageRank authors tend to act as hubs within the scientific community, facilitating the flow of information and strengthening the cohesion of the research ecosystem.

The institutional affiliations of the 40 most productive authors in PAG highlight the predominant role of public research and extension institutions based in southern Brazil. Notably, the Department of Agriculture, Livestock, Sustainable Production and Irrigation of Rio Grande do Sul (SEAPI-RS), including its subordinate units, the Department of Agricultural Research and Diagnostics (DDPA) and the former State Foundation of Agricultural Research (Fepagro), accounts for 22 of the top-ranked authors. This reflects SEAPI-RS's central and sustained contribution to the development of applied agricultural research in the region. Embrapa is also a major contributor, with seven authors, reaffirming its strategic role in cereal and

temperate-climate research. Federal universities are significantly represented, particularly the Federal University of Rio Grande do Sul (UFRGS), with eight affiliated authors, while the Federal University of Pelotas (UFPel) and the Federal University of Santa Maria (UFSM) each contribute one. This distribution illustrates the synergistic collaboration between federal academic institutions and state-level public research bodies in advancing agricultural science and fostering regional innovation.

Additionally, units of the Brazilian Agricultural Research Corporation contribute a significant number of authors, reinforcing their relevance in research. Other important contributors include Santa Catarina Agricultural Research and Rural Extension Company (EPAGRI-SC) and Rio Grande do Sul Zoobotanical Foundation (FZB-RS), reflecting collaborative ties that span institutions. This distribution of affiliations emphasizes the interconnected nature of the agricultural research landscape in southern Brazil, where cooperation between federal, state, and academic entities plays a critical role in scientific advancement.

The community detection analysis, using the Louvain algorithm, identifies distinct clusters of collaboration. Community 1 is the largest, comprising 82 authors. Among the top 40 authors, three members of this community are affiliated with UFRGS, indicating a cohesive group of academics who have collaborated consistently over time. Community 2, comprising 71 members, is the most prominently represented among the top-ranked authors, including eight researchers: five affiliated with the DDPA, two with SEAPI-RS, and one with the former Fepagro. This cluster reflects strong internal collaboration within state-level public research institutions and underscores their pivotal role in the journal's history. SEAPI-RS, in particular, stands out as the most frequently represented institution overall,







indicating a sustained institutional commitment to both publishing in PAG and advancing regional agricultural research. Community 3, which includes five top-ranked among its 59 authors, is primarily composed of researchers affiliated with Embrapa Clima Temperado, UFSM, FZB-RS and Fepagro. Although smaller in size compared to other groups, this community reflects a meaningful collaborative link between federal research institutions and state-level entities. The presence of Embrapa Clima Temperado, a key branch of Brazil's federal agricultural research network, highlights the integration of national research agendas with regional needs.

Figure 1 presents the core authors of PAG over its 30-year history. Node size reflects the number of publications per author, while link thickness indicates the frequency of co-authorships. Node colors represent the eight largest co-authorship communities identified, and gray nodes correspond to authors from smaller communities beyond the ninth in size. Community 1 is represented in lilac, community 2 in green, community 3 in blue, community 4 in dark gray, community 5 in orange, and community 7 in dark green. The only author of community 6 is represented in pink, and the only author of community 8 is in light brown.

Figure 1 also highlights the most frequent co-authorships among the top authors. H. P. S. (Rank 1) and R. S. F. (Rank 9), as well as J. G. B. (Rank 16) and R. P. S. (Rank 17), co-authored 10 publications each. Notable collaborations with nine joint publications include R. M. (Rank 2) and J. R. T. M. (Rank 23); R. F. (Rank 3) and J. G. B. (Rank 16); and R. F. and R. P. S. (Rank 17).

Web scraping techniques were employed to extract affiliation data from all articles to investigate the institutional affiliations of all authors. However, it was

only possible to automatically retrieve author affiliations for articles published from volume 22 (2016) onwards, totaling 120 out of 578 articles. For earlier publications, this information was not available on the individual article webpages.

Figure 2 illustrates the collaborative relationships between institutions, based on the affiliations reported by the authors from volume 22 onwards. To enhance the interpretability of the network, only institutions that appeared two or more times across the dataset were included in the visualization. This threshold effectively filtered out approximately 50% of the institutions with single occurrences, thereby improving the clarity and overall readability of the figure by reducing visual noise and emphasizing the most recurrent institutional connections. Links between different institutions represent inter-institutional collaborations within the same paper, whereas self-links indicate collaborations among authors affiliated with the same institution.

Over this nine-year period, SEAPI was the most frequent institutional affiliation, appearing 157 times. It was followed by UFRGS with 78 mentions and UFPEL with 37. DDPA, a division of SEAPI, was cited 33 times. UCS appeared 29 times, UFSM 25 times, Unipampa 24 times, and Embrapa 21 times. UERGS and FURG were mentioned 14 and 11 times, respectively, thus completing the list of the ten most frequently cited institutional affiliations.

With respect to internationalization, some foreign institutions were declared as affiliations. The Federal University of Technology Minna (Nigeria) was cited six times, while three other institutions, the University of Benin (Benin City, Nigeria), University of Ilorin (Nigeria), and University of Cape Town (South Africa), were each mentioned twice.

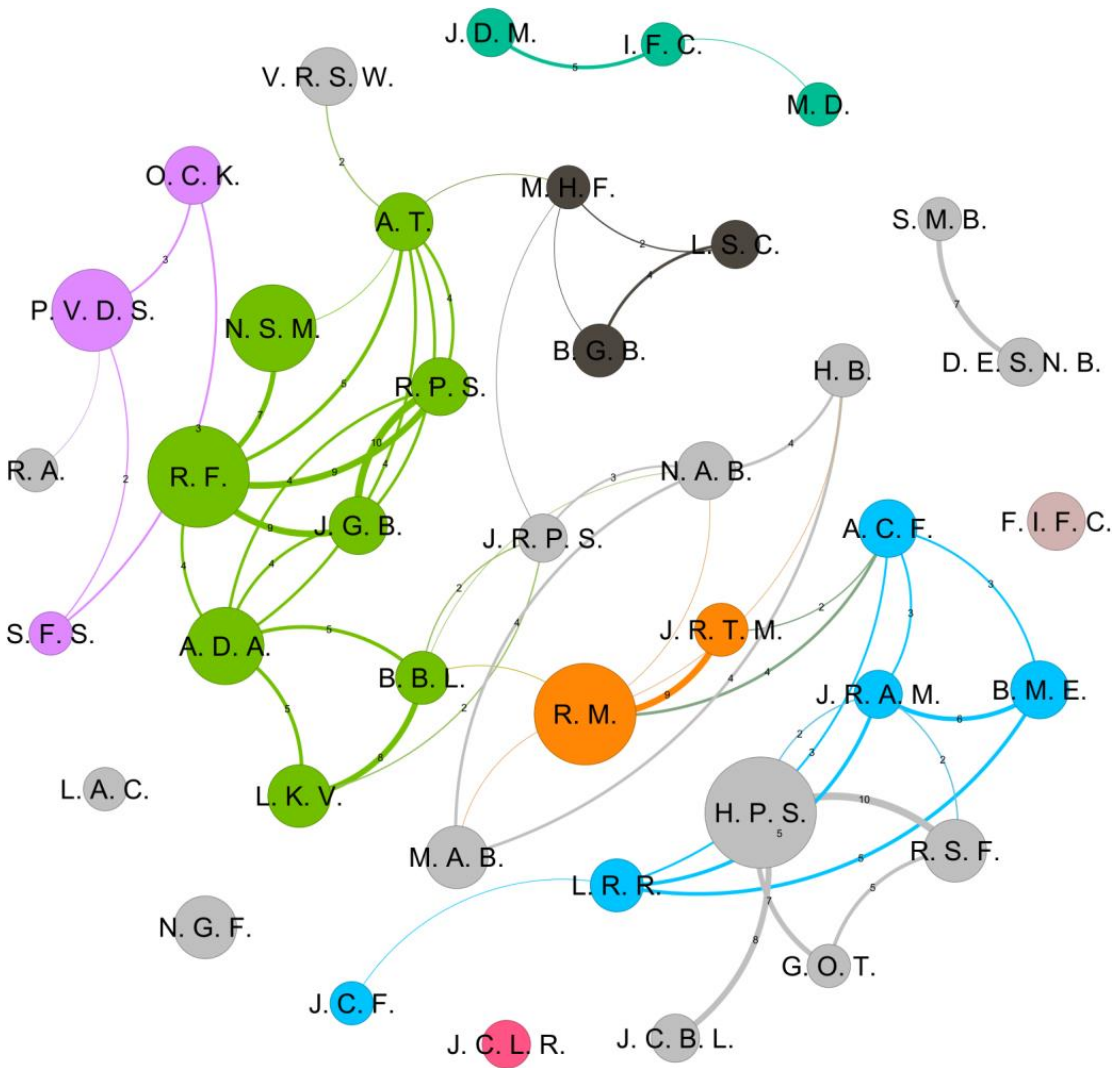


**Table 1.** Top 40 authors in the history of the *Pesquisa Agropecuária Gaúcha* Journal (1995–2024), along with their bibliometric indicators and institutional affiliations.

| Rank | Autor Initials | Pub | Deg | BC              | PR              | Com | Institution             |
|------|----------------|-----|-----|-----------------|-----------------|-----|-------------------------|
| 1    | H. P. S.       | 21  | 20  | 0,007120        | 0,003160        | 15  | Embrapa Trigo           |
| 2    | R. M.          | 19  | 34  | 0,025778        | <b>0,004048</b> | 5   | Fepagro/SEAPI-RS        |
| 3    | R. F.          | 19  | 24  | 0,033068        | 0,003697        | 2   | DDPA/SEAPI-RS           |
| 4    | N. S. M.       | 16  | 9   | 0,017026        | 0,001485        | 2   | Fepagro/SEAPI-RS        |
| 5    | P. V. D. S.    | 15  | 37  | 0,032213        | <b>0,004342</b> | 1   | UFRGS                   |
| 6    | A. D. A.       | 14  | 31  | 0,022840        | 0,003276        | 2   | DDPA/SEAPI-RS           |
| 7    | L. K. V.       | 11  | 33  | 0,011647        | 0,003296        | 2   | DDPA/SEAPI-RS           |
| 8    | M. A. B.       | 11  | 17  | 0,006983        | 0,002185        | 10  | UFRGS                   |
| 9    | R. S. F.       | 11  | 15  | 0,003552        | 0,001930        | 15  | Embrapa Trigo           |
| 10   | N. G. F.       | 11  | 12  | 0,000211        | 0,002577        | 11  | UFRGS                   |
| 11   | F. I. F. C.    | 10  | 34  | <b>0,041839</b> | <b>0,003795</b> | 8   | UFPeI                   |
| 12   | B. M. E.       | 10  | 32  | 0,011612        | 0,003201        | 3   | Embrapa Clima Temperado |
| 13   | A. C. F.       | 10  | 30  | 0,038435        | 0,002948        | 3   | UFSM                    |
| 14   | O. C. K.       | 10  | 26  | 0,013751        | 0,002903        | 1   | UFRGS                   |
| 15   | V. R. S. W.    | 10  | 21  | 0,013465        | 0,002791        | 9   | SEAPI-RS                |
| 16   | J. G. B.       | 10  | 18  | 0,006544        | 0,002507        | 2   | DDPA/SEAPI-RS           |
| 17   | R. P. S.       | 10  | 18  | 0,006544        | 0,002507        | 2   | DDPA/SEAPI-RS           |
| 18   | A. T.          | 10  | 17  | <b>0,047845</b> | 0,002371        | 2   | SEAPI-RS                |
| 19   | N. A. B.       | 10  | 14  | 0,004208        | 0,001861        | 10  | Fepagro/SEAPI-RS        |
| 20   | B. G. B.       | 9   | 37  | 0,012764        | 0,003274        | 4   | DDPA/SEAPI-RS           |
| 21   | B. B. L.       | 9   | 27  | 0,012741        | 0,002611        | 2   | SEAPI-RS                |
| 22   | L. R. R.       | 9   | 26  | 0,021205        | 0,002698        | 3   | FZB-RS                  |
| 23   | J. R. T. M.    | 9   | 18  | 0,000531        | 0,002024        | 5   | Fepagro/SEAPI-RS        |
| 24   | H. B.          | 9   | 14  | 0,002807        | 0,001924        | 10  | UFRGS                   |
| 25   | L. S. C.       | 8   | 35  | 0,014354        | 0,003061        | 4   | DDPA/SEAPI-RS           |
| 26   | J. R. A. M.    | 8   | 25  | 0,017038        | 0,002624        | 3   | Embrapa Clima Temperado |
| 27   | J. D. M.       | 8   | 19  | 0,013828        | 0,002062        | 7   | DDPA/SEAPI-RS           |
| 28   | J. R. P. S.    | 8   | 19  | 0,012912        | 0,002155        | 10  | Fepagro/SEAPI-RS        |
| 29   | J. C. L. R.    | 8   | 17  | 0,007684        | 0,002223        | 6   | Embrapa Clima Temperado |
| 30   | D. E. S. N. B. | 8   | 11  | 0,000023        | 0,002151        | 24  | Fepagro/UFRGS           |
| 31   | J. C. B. L.    | 8   | 7   | 0,000007        | 0,001105        | 15  | Embrapa Trigo           |
| 32   | M. H. F.       | 7   | 26  | 0,036590        | 0,002022        | 4   | DDPA/SEAPI-RS           |
| 33   | M. D.          | 7   | 24  | <b>0,044115</b> | 0,002358        | 7   | UFRGS                   |
| 34   | S. F. S.       | 7   | 24  | 0,037286        | 0,002378        | 1   | UFRGS                   |
| 35   | I. F. C.       | 7   | 24  | 0,026321        | 0,002364        | 7   | SEAPI-RS                |
| 36   | R. A.          | 7   | 13  | 0,007140        | 0,001818        | 31  | SEAPI-RS                |
| 37   | S. M. B.       | 7   | 11  | 0,000023        | 0,001967        | 24  | Fepagro/SEAPI-RS        |
| 38   | J. C. F.       | 7   | 8   | 0,002639        | 0,001181        | 3   | Fepagro/SEAPI-RS        |
| 39   | G. O. T.       | 7   | 6   | 0,000003        | 0,001182        | 15  | Embrapa Trigo           |
| 40   | L. A. C.       | 7   | 3   | 0,001440        | 0,001072        | 22  | EPAGRI-SC               |

Rank: Position in the ranking. Pub: number of publications of the author. Deg: degree. BC: Betweenness Centrality. PR: Pagerank. Com: Community ordinal number.





**Figure 1.** Collaborative network illustrating co-authorship relationships among the 40 most productive authors in *Pesquisa Agropecuária Gaúcha*.

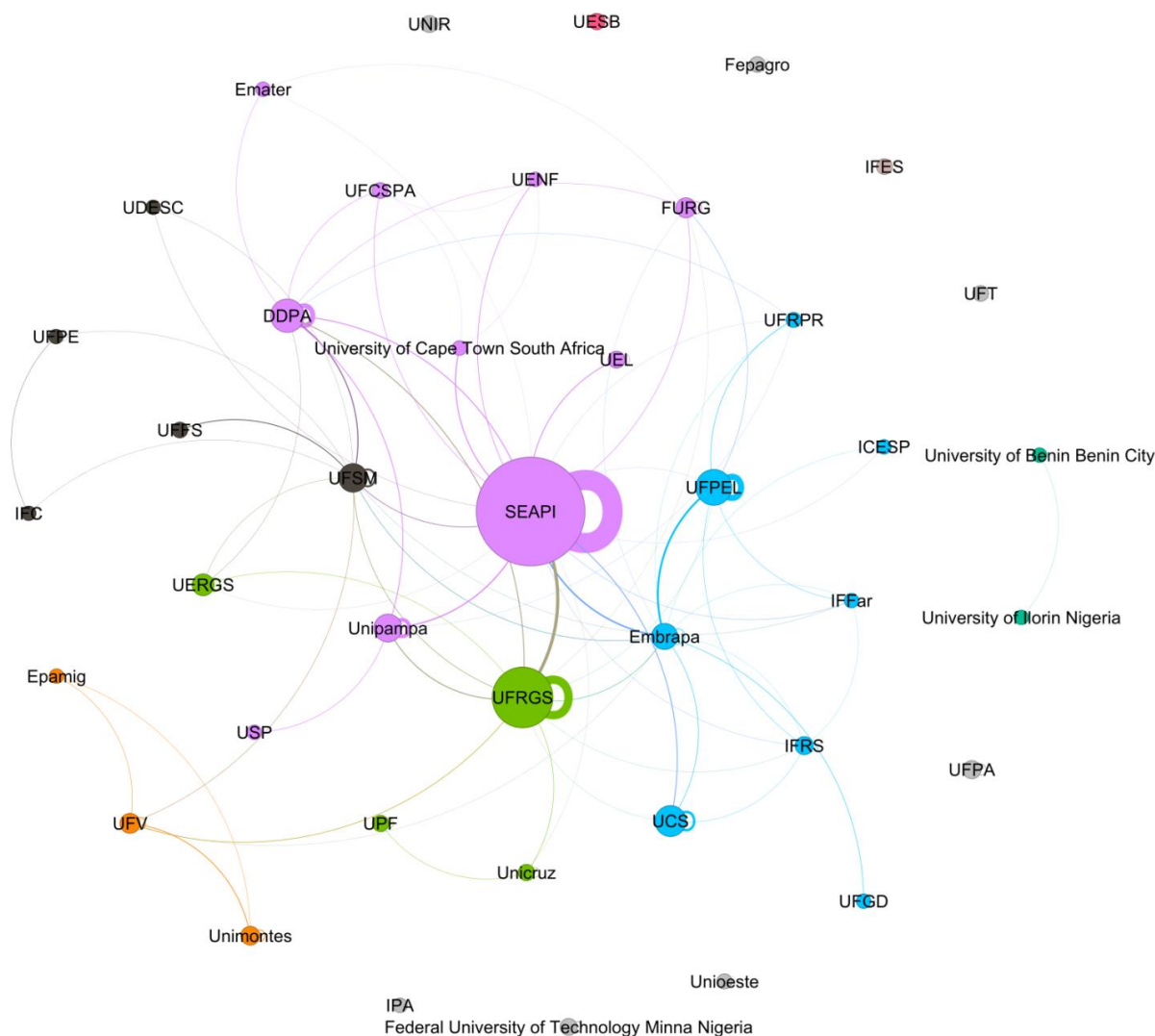
These findings highlight the central figures and institutions that have shaped the PAG journal's trajectory, offering valuable insights for researchers and policymakers aiming to foster effective collaborations in agrarian sciences.

From the perspective of Information Science, the concentration of authorship observed in a limited set of institutions underscores both the journal's central role in structuring regional research and the challenge of broadening its epistemic diversity. In the coming years, *Pesquisa Agropecuária Gaúcha* faces the task of

diversifying its author base, fostering international collaborations, and embracing open science practices to enhance visibility and impact. The adoption of researcher identifiers such as ORCID is also a crucial step, as it facilitates author disambiguation, ensures proper attribution of contributions, and strengthens the integrity of bibliometric analyses. Another challenge lies in ensuring thematic renewal, so that the journal continues to reflect emerging agricultural issues while preserving its regional identity.







**Figure 2.** Collaborative network illustrating institutional relationships in Pesquisa Agropecuária Gaúcha.

In this context, international collaboration represents a promising avenue, particularly with Argentina and Uruguay, which share similar agroecological conditions, production systems, and challenges such as climate variability, livestock health, and crop sustainability. Strengthening partnerships with institutions in these neighboring countries would not only enhance comparative research but also consolidate a regional knowledge base capable of addressing transboundary agricultural problems. By doing so, PAG can evolve into a platform for South American

agricultural dialogue, further expanding its scientific reach while maintaining its regional anchoring.

The limitations of this study include the reliance on institutional affiliations drawn from the authors' most recent publication in the journal, which in some cases dates back more than a decade. Consequently, the affiliations may not reflect the authors' current institutional ties. Another limitation concerns changes in the names and organizational structures of governmental secretariats and departments over time. To address this issue and ensure consistency, all historical variations of



the Secretariat of Agriculture in Rio Grande do Sul were uniformly represented using the acronym SEAPI.

## Conclusions

This study provided a comprehensive overview of the co-authorship dynamics and institutional landscape of the *Pesquisa Agropecuária Gaúcha* (PAG) journal over its 30-year history. By applying scientometric techniques and Social Network Analysis (SNA), it identified the most prolific authors, the structure of their collaborative networks, and the institutions most actively engaged in regional agricultural research.

The ranking of the top 40 most productive authors reveals the pivotal role of public research institutions, especially SEAPI-RS, Fepagro, and Embrapa, in shaping the journal's scientific output. Federal universities, particularly UFRGS, also emerge as important contributors, illustrating the synergy between academic research and state-level applied research initiatives.

In sum, the evolution of PAG reflects a robust and interconnected scientific ecosystem in southern Brazil. The journal has served as both a mirror and a catalyst for regional agricultural research, where collaborative practices, grounded in institutional diversity, have driven scientific progress. Future research might expand this analysis to explore thematic trends and the internationalization of collaborations, further enriching our understanding of PAG's role in advancing agricultural knowledge.

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## Conflict of Interests

The author declares that the research was conducted in the absence of any potential conflicts of interest.

## Ethical Statements

The author confirms that the ethical guidelines adopted by the journal were followed in this work, and agrees with the submission, content, and transfer of the publication rights of the article to the journal. The author also declares that the work has not been previously published nor is it being considered for publication in another journal.

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