



25 years in 25 articles

Review

Writing from uruguay to the world: Agrocienza Uruguay twenty-five years

Escribir desde Uruguay para el mundo: Agrocienza Uruguay veinticinco años es todo

Escrevendo do Uruguai para o mundo: Agrocienza Uruguai vinte e cinco anos

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Abstract

The article represents an approach to the trajectory of *Agrocienza Uruguay*, on the 25th anniversary of the publication of its first issue. A descriptive analysis on the journal's evolution will be presented, based on an examination of the articles published, as well as five interviews with chief editors who have been associated with the publication since its creation.

Keywords: academic editorial management, specialized journals, scientific communication, Uruguay

Resumen

El artículo representa un acercamiento a la trayectoria de la revista *Agrocienza Uruguay* al cumplirse 25 años de la publicación de su primer número. Se intentará presentar un análisis descriptivo de la evolución de la revista a partir del examen de los artículos publicados y de cinco entrevistas a editores jefes que se vincularon con la publicación desde su fundación.

Palabras clave: gestión editorial académica, revistas especializadas, comunicación científica, Uruguay

Resumo

O artigo representa uma aproximação à trajetória da revista *Agrocienza Uruguay*, no 25^o aniversário da publicação de seu primeiro número. Tentar-se-á apresentar uma análise descritiva da evolução da revista a partir do exame dos artigos publicados e de cinco entrevistas com os editores-chefes associados à publicação desde a sua fundação.

Palavras-chave: gestão editorial acadêmica, periódicos especializadas, comunicação científica, Uruguai



1. Introduction

This article represents a first approach to the trajectory of the magazine *Agrociencia Uruguay* on the 25th anniversary of the publication of its first issue. The idea is to present a study of a substantially descriptive nature on the evolution of the journal, avoiding, as far as possible, to delve into more specific aspects related to the type of articles that have been published, and the potential impact that the journal has and can have in the field of agronomy, both nationally and internationally. However, some of these aspects will inevitably arise throughout the article and will be addressed in the form of questions at the end.

From a methodological point of view, the articles published in the journal have been analyzed following the criteria elaborated by the editors, and an attempt has been made to present a very generic scheme on authorship based on a perhaps debatable methodology that, however, may be useful for subsequent research. In addition, five interviews have been conducted with chief editors, who fulfilled this role at different times in the history of this publication, but who have been linked to it since its foundation in 1997^I.

2. From the newsletter to the scientific journal

Agrociencia Uruguay published its first issue in 1997, as a journal of the School of Agronomy of the University of the Republic (Uruguay) (hereinafter, the School), during the deanery of the Agricultural Engineer Gonzalo González. The immediate background to the publication was the *Boletín de investigación* (Research Bulletin), which was created in the late 1980s, with the aim of “collecting the research activities currently within in the School, of a more technological than basic nature, and which were difficult to publish in international peer-reviewed journals”^{II}. An Editorial Board of a more or less formal nature was in charge of the Bulletin and its members were three teachers. It published about thirty issues dedicated to various topics, without

peer review and with very different formats: sometimes they were small books, other times they were scientific articles, research advances or simple information related to academic activity^{III}.

Having chosen, not without some doubts, the name of the new journal^{IV}, *Agrociencia Uruguay* had, as its first objective, to continue the activity of its predecessor; that is, to offer a space for the dissemination of information related to the activities that were being carried out in the School of Agronomy “from what was applied, with the corresponding originality, defining a problem and applying a certain strategy, communicating the production of the School in the different areas in an accessible journal”^V.

However, the promoters' intention for the new publication was broader, in the sense that it was clear the importance of teachers and researchers to have a space to practice the production of articles in scientific format, due to a set of reasons that guided the significant transformations that occurred in Uruguayan agronomy in the 1980s from an institutional point of view. Those transformations evolved over time and could be summarized in different points: the necessary reflection on the role of agronomy in the new reality after the dictatorship period and the consequent adaptation of the curriculum to this new situation; the contribution of teachers who returned to the country after exile and, subsequently, those who returned after having trained abroad; the new forms of transmission of the scientific and research advances through specialized journals, which began to appear at the time; the complex mechanisms of educational integration after the creation of Mercosur; the internal transformation process of the School, within a more general reform of the university organization, which led, among other things, to the creation of postgraduate studies at the national level, the setting up of degrees shared with the schools of Veterinary Medicine, Chemistry, Engineering, Architecture and Fine Arts, as well as the various integration mechanisms with the University of Labour of Uruguay (UTU in Spanish); and the renewal of the Alberto Boerger Agricultural Research

^I In this study, the issues of the journal up to vol. 26, No. 1 of 2022 have been analyzed. We thank editors-in-chief Marco Dalla Rizza, Milka Ferrer, Fernando García Préchac, Raúl Gómez and Jorge Monza, as well as Niza Trujillo and Laura Orrego of the secretariat team for their kindness and patience. The quotes of the interviews will be numbered for the identification of the interviewee.

^{II} Interview (E4) by Verónica Sanz Bonino, Montevideo, 04-20-2022 (from this moment, only the number of interview and interviewee will be indicated). In fact, the Faculty of Agronomy had specialized magazines since the foundations of the building that houses the Faculty were laid, on February 20, 1907. The first issue of the *Revista de la Sección Agronomía* of the University of Montevideo came out a few months later, in July 1907. Throughout its existence it maintained

different forms of publication directly linked to the institution or to the Association of Students of Agronomy (AEA in Spanish).

^{III} “At first the researchers sent the work, there was a Publication Committee, an Investigation Committee, and there it was decided whether it was published or not.” Interview (E1) by Verónica Sanz Bonino, Montevideo, 03-16-2022.

^{IV} “We thought of naming it the 'Boletín de investigación de la Facultad de Agronomía' (Faculty of Agronomy Research Bulletin), but it was a very long and weak name, so we considered it to be something simple like 'Science'. At that time, it was not so easy to communicate, and we did not realize that there was an 'Agrociencia' in Mexico, so we opted for *Agrociencia Uruguay*.” Interview (E4).

^V Interview (E4).

Centre (CIIAB in Spanish), which culminated in the creation of the National Agricultural Research Institute (INIA in Spanish)^{VI}.

From this point of view, all the interviewees agree in highlighting that the main reason to promote a national publication was to maintain and foster a certain degree of freedom and academic sovereignty, avoiding being subordinated to excessively productivist issues or linked to aspects distanced from research, a frequent problem common to the realities of an applied science such as agronomy. This principle of independence corresponds to the conditions in which the scientific project of the School was to be developed, in the greatest university transformation of the time, and which could be summarized in four fundamental aspects. First, to have competitive funding that could represent a first limitation, since the development of research should be related to the topics considered as priorities on those funds. Second, that the researcher or his team wrote articles for peer-reviewed publications. Third, that there should be valuable human resources integrated into research projects, such as postgraduate students, as well as mechanisms that would give sustainability to their participation in such projects, such as the use of scholarships or bids for specific contracts, among others. Fourth, the existence of topics considered of high interest at the local or regional level, even though they may not necessarily have the same impact in international journals.

Consequently, the main objective at the time of creation of the journal was to ensure that professionals of the School of Agronomy had the possibility of publishing on topics of local interest, and that this would result in academic merit, as all research work would have had to culminate in a publication, while the acceptance by peers would have facilitated the discussion of its contents, taking advantage of the fact that in the agronomic area research was carried out both at the undergraduate and graduate levels, therefore, students could complete their degree by editing their work.

It is interesting to note, though not surprising, that a similar process, in terms of dissemination of research products with the aim of promoting debates on their results, was also taking place in the

newborn INIA, which had inherited from the CIIAB the journals *Investigaciones Agronómicas*, *Serie Técnica* and *Serie Actividades de Difusión*, which gave priority to dissemination primarily to producers, and only on a second level to researchers^{VII}.

Once the objectives were established, the problem of how to create a publication that met these purposes was raised by the proponents of the new journal. The first structure of the editorial team consisted of an editorial board of three members and two reviewers per area. Subsequently, it was modified with the creation of a chief editor and an editorial board by area, centralizing the mechanics of the process in Daniela Paladino, an official who ended up representing "the soul of the magazine"^{VIII}.

On a second level, the promoters of the journal had to convince the researchers of the School to take advantage of this new space for the publication of their completed works, as well as strengthen the editorial body and maintain it over time. Attempts were also made to establish clear publication rules that would allow *Agrociencia Uruguay* to be registered in indexed journals. Finally, the issue of the funding of the magazine had to be addressed. All interviewees point out that Jorge Monza played a fundamental role in this initial effort^{IX}.

At the time when efforts were being made to consolidate the journal in the national agronomic field, the promoters developed three levels of action to strengthen it at the international and scientific level. First, all the necessary requirements were met so that the magazine could be inserted among the indexed journals, starting with its integration into DOAJ (Directory of Open Access Journals), and then LATINDEX, a process that took several years, although it turned out to be a very important learning phase^X. Secondly, electronic publishing began in 2000. Finally, since 2006, the Board of Directors of INIA promoted the active participation of the institution, assuming the role of chief editor integrating the Editorial Board, something that materialized in the edition of *Agrociencia Uruguay* of the following year. The decision to join the project was an indication of the excellent relations that had been established between the School of Agronomy and INIA, and the common intention of the two institutions to

^{VI} See Law 16.065 of October 6, 1989 on the creation of INIA. An attempt to describe this process in Bianco-Mederos⁽¹⁾, Bonfanti⁽²⁾, Bonfanti and Thul⁽³⁾, Caetano and others⁽⁴⁾, Cruz Brasesco⁽⁵⁾.

^{VII} To those of INIA "I said in the 90s 'you are killing your researchers, you are not giving them visibility'", Interview (E4).

^{VIII} "Everything was processed by mail, documents were sent to reviewers in Spain, Mexico, Argentina (...). Subsequently, we adopted the structure of an editor-in-chief and an editorial board by area, and

a secretary, Daniela Paladino, joined the team, who centralized all the mechanics of the process, with a very leading role; she was the soul of the magazine", Interview (E4). The importance of Daniela Paladino in this initial context of the magazine is confirmed by all the interviewees.

^{IX} Interview (E3) by Verónica Sanz Bonino, Montevideo, 03-21-2022.

^X "It was very interesting, we took courses, and there we saw how a magazine really should work". Interview (E4).

strengthen the editorial project: “From the beginning there was a decision to share this effort, as an asset valued at the national and international level, and to use the magazine as a calling card for the work we did”^{XI}. It was, therefore, an opportunity for the two institutions to draw closer together and link the technological aspects, characteristic of INIA's activities, with the academic ones^{XII}.

As had happened for the School, *Agrociencia Uruguay* turned out to be the first peer-reviewed journal of INIA, since the previous ones, such as *Technical Series*, were not subjected to anonymous peer review despite being greatly recognized in the area.

INIA helped to professionalize the journal in three aspects:

- a) supporting the creation of a technical department exclusively dedicated to the edition of *Agrociencia Uruguay*;
- b) offering an editing platform with corresponding software updates for layout;
- c) incorporating a translation service for English articles.

From that moment, each section of the journal retained a technical body shared between the School of Agronomy and INIA, which highlighted the synergy between the members of the teams of both institutions in the different areas of knowledge. This alliance allowed access to the SCIELO Electronic Scientific Library, in the search for continuous product improvement. Beyond some editorial issues, the integration process between the School and INIA has enabled complementarity instead of competence in research, and the formation and expansion of a critical mass of readers. From the beginning, both institutions have resorted to the social capital of their researchers and to the networks that they integrate and promote in their research teams; granting, on the one hand, the expansion of the topics and issues investigated, and, on the other, a generalized feeling of belonging to the magazine. As one of the interviewees points out: “The magazine has institutional support, this is remarkable (...) we feel it is our own”^{XIII}.

Despite the original centrality on local issues, from vol. 24, No. 1, 2020, *Agrociencia Uruguay* began being published in English. This transformation

faced resistance and raised discussions on the reader to whom the publication was addressed. However, in the opinion of the interviewees, the impact of this change was highly positive, particularly because it resulted in the fact that the published articles had greater visibility and accessibility at the international level, and the articles were increasingly cited in foreign journals and researches.

In turn, SCIELO requirements were met (incorporation of DOI, ORCID for authors, etc.), and the presentation was standardized following these criteria. In this process, a commission of reviewers external to the institutions involved in the publication of the journal has been created in order to preserve and standardize certain requirements in the acceptance criteria, both formally and in content.

Nowadays the journal has a more defined editorial system, with rules that contribute to a greater demand on the quality of the work presented by the authors, a defined template for the publication of articles, a subsidized support system for publication in English (so that the edition in this language ceases to be a limitation for authors), an updated web portal and a team of specialized technicians. Thus, an organic support structure has been created, with resources allocated to the processes of management and editing^{XIV}.

Finally, there is a permanent department, although there is still a lack of an exclusive and specific physical area for it within the School—despite the corresponding procedure to allow for this has already been initiated—. This transformation has represented an important institutional effort on the part of INIA and the School, which has been demonstrated, among other things, by an important economic commitment, a factor that is most often cited to account for these changes: “The School pays for part of the translation and the author pays for the other part, which involved turning to a group of translators who knew the agronomic lexicon”^{XV}.

The structure of the editorial team is composed of 59 people: 2 chief editors, 34 editors of the different Sections, 13 members of the Advisory Committee, 2 legal representatives and 8 technicians of the editorial office (including secretaries, editors and bibliographical editors, and electronic publication and computer support staff). One of the chief editors

^{XI} Interview (E3).

^{XII} “INIA is a research institution with a strong extension component, and generates dissemination material that does not have a universal format (...), so the scientific work is one, it can have a component of technological application, applied, or be of basic type (...). The technological problems supported by analysis strategies; then the magazine is technological.” Interview (E4).

^{XIII} Interview (E3).

^{XIV} The editorial team is integrated by Martina Gancio (grammar and style edition), Stephanie Colombo (bibliographic edition), Laura Scappa, Emilio Fernández and Schubert Fernández (IT support).

^{XV} Interview (E5) by Verónica Sanz Bonino, Montevideo, 04-20-2022.

represents INIA and another one represents the Faculty of Agronomy, while there are at least two editors per Section (one for each institution), so as to share responsibilities. The editorial team, in consultation with the body of reviewers acting

independently of the institutions, is the one that defines the journal's policy. The Advisory Committee includes a liaison with researchers from more than a dozen institutions in different countries [Table 1].

Table 1. Institutional origin and members of the Advisory Committee

INSTITUTION	MEMBERS
Universidad Politécnica de Valencia	Manuel Agustí Fonfría
Universidad Politécnica de Madrid	Isabel Allona
Universidade Federal de Rio Grande do Sul	Jalcione Almeida
Universidad Autónoma de México	Octavio A.Castelán Ortega
Universität Göttingen	Norbert Claassen
Auburn University (USA)	Leonardo de la Fuente
Iowa State University (USA)	Antonio Mallarino
Università Politecnica delle Marche (Italy)	Bruno Mezzetti
Universidad de Buenos Aires	Daniel Miralles
Universidad Politécnica de Madrid	José Palacios Alberti
Instituto Nacional de Investigación y Tecnología Agraria y Alimentaria (CSIC-Spain)	Rosa Raposo
Wageningen University (Netherlands)	Roxina Soler
La Trobe University (Australia)	Germán Spangenberg

Source: agrocienauruguay.uy/ojs/index.php/agrocienauruguay/about/editorialTeam

The journal is freely accessible, it does not charge APC (article processing charge), and unpublished articles, reviews (by invitation) and technical papers are published in two issues per year. Over time, and at the proposal of the chief editors, it has been integrated into different journal indexes [Table 2].

Table 2. *Agrociencia Uruguay* Indexes (2022)

Membership	Asociación Uruguaya de Revistas Académicas
Digital Library	Amelica, Scielo Uruguay
Directories	Dialnet, DOAJ, Latindex 2.0, MIAR, REDIB, ROAD
Indexes	CABI, Emerging Sources Citation Index
Repositories	Colibri

Finally, it should be stated that there is a communication policy, with technical resources dedicated to the edition of the web portal, as the main means of dissemination, in addition to the academic dissemination carried out through the directories and repositories where the journal can be found. Besides, the magazine has social networks accounts —Instagram and Facebook—, and specific human resources dedicated to their editing, publication and monitoring. *Agrociencia Uruguay* has participated in dissemination and promotion activities at agricultural fairs —Melilla, Soriano, Rural del Prado, Expoprado— and in the INIA Expotesis^{XVI}. Likewise, it is expected to design a communication plan that aims at greater projection at the international level.

^{XVI} The Expotesis are meetings organized by INIA to present the progress of different research works carried out by graduate students,

young professionals and consolidated researchers, with the aim of sharing the scope of their work, developing new knowledge and

In the last period the editorial team has proposed to shorten the editing times to a maximum of six months, and generate the conditions to support the publication in English, and the corresponding text and style editing. As per the reviewers, they will be required to integrate the National System of Researchers of the National Agency for Research and Innovation of Uruguay (ANII in Spanish), and to meet specific goals in the monitoring of their evaluation task. It is also expected that ANII will maintain the journal's rating and that the requirements to enter SCOPUS will be met.

As a future objective, the interviewees believe that the publication time of the articles should be reduced and that continuous publication should be undertaken. This implies giving more flexibility and greater autonomy to the different sections that make up the journal^{XVII}.

3. Inside the magazine: editorial management

Since its inception, the magazine has edited a total of 54 issues. Until 2001, its frequency was annual. Since the following year it became biannual. In 2005, the proceedings of the V Simposio de Recursos Genéticos para América Latina y el Caribe (5th Symposium on Genetic Resources for Latin America and the Caribbean) (vol. 9, No. 1 and 2) were published on a double volume. From then on, special editions began to appear for the publication of papers and reports presented at congresses, seminars and other scientific events. In general, the publication of the minutes takes place under the term of "special edition" which, in the case of the IX Encuentro de Nutrición y Producción en Animales Monogástricos (9th Meeting on Nutrition and Production in Monogastric Animals) of 2007, it stayed outside the general numbering, while for the Seminario producción animal: limpia, verde y ética (Animal production seminar: clean, green and ethical) of 2009 (vol. 13, No. 3) it was classified as a third annual issue of the journal. In this sense, in 2009,

technologies, confronting work methodologies, and promoting the generation of inter-institutional networks both nationally and internationally. In 2021, the 6th Edition of the Expostesis was held.

^{XVII} Flexibility in editorial policy is claimed as a characteristic of *Agrociencia Uruguay* from the beginning: "There was a flexible editorial policy, with autonomy in the different sections. There was the possibility of delegating so that each Section editor would search for a body of reviewers. It was always a delicate aspect (...). The editors-in-chief followed the article from review until approval or rejection", Interview (E2). However, there is the awareness and conviction that the decision to move to the criteria of continuous publication could inevitably lead to changing the modalities of review and acceptance.

^{XVIII} Seminario producción animal: limpia, verde y ética. *Agrociencia Uruguay*. 2009;13(3); III Congreso Asociación Uruguaya de

2010, 2012 and 2015 the magazine had an increased rate of publication^{XVIII}. But from 2020, the "special" character of the edited numbers started to be specified in order to account for international scientific meetings, and the number of issues increased, going up to two per year, due to a sensible strategy aimed at overcoming the restrictions caused by the covid-19 pandemic^{XIX}. The decision to publish the proceedings of these congresses gave a central role to its organizers, who became editors of these special issues, with the responsibility of selecting articles and promoting the work of researchers. Currently, the strategy of promoting the publication of thematic issues is being discussed, as has happened in the case of Celebrando el Año Internacional de las Frutas y Verduras (Celebrating the International Year of Fruits and Vegetables)^{XX}.

From volume 7 number 1 of 2003 the magazine was divided into sections. The first sections were Animal Production and Pastures, Plant Protection, Plant Production, Social Sciences (which, from vol. 19, No. 1 of 2015 was renamed as Social Sciences and Agrarian Economics, and, from vol. 23, No. 1, 2019, Social Sciences, Rural Sociology and Agrarian Economics), Soils, and Water and Plant Biology. In Vol. 21, No. 1 of 2017 two new sections were created: Natural and Environmental Resources, and Plant and Microbial Biotechnology. In vol. 23, No. 1 of 2019, the new section Natural and Environmental Resources and an editorial dedicated to general problems were inaugurated, although this last section was published occasionally, while in vol. 25, No. 1 of 2021, the Forest Sciences and Landscape Management section was introduced. Previously, in vol. 10, No. 1 of 2006, an article had been published for an Agro-Meteorology section, but it was not repeated. In the first issues, sections dedicated to miscellaneous or reviews were published that were not continued.

Regardless of these changes, some more formal than substantial, the different sections maintained a certain coherence with the different areas of

Producción Animal. *Agrociencia Uruguay*. 2010;14(3); Striving for sustainable high productivity through improved soil and crop management. *Agrociencia Uruguay*. 2012;16(3); 3rd Inter-Regional CIGR Conference on Land and Water Challenges: Tools for developing. *Agrociencia Uruguay*. 2015;19(3).

^{XIX} IV Congreso Ciencias Sociales Agrarias. Innovaciones y desarrollo en los territorios rurales: múltiples miradas. *Agrociencia Uruguay*. 2020;24(NE1); X Encuentro Latinoamericano y del Caribe de Biotecnología Agropecuaria XII Simposio REDBIO, Argentina. *Agrociencia Uruguay*. 2020;24(NE2); VIII Encuentro Latinoamericano Prunus sin Fronteras. *Agrociencia Uruguay*. 2021;25(NE1); Celebrando el año internacional de las frutas y verduras. *Agrociencia Uruguay*. 2021;25(NE2).

^{XX} *Agrociencia Uruguay*. 2021;25(NE2).

knowledge of the School, with the limit that the contents were specific to the agricultural sector, considering the fact that the issues specific to veterinary medicine or animal protection areas appear in other specific journals on this type of content. Despite this formal caution in the face of other disciplines, the emergence of research related to social sciences issues is specific, and it is not exceptional to find an issue of *Agrociencia Uruguay* in which one or more articles are devoted to these topics.

Table 3. Articles published in *Agrociencia Uruguay* 1997-2022

Sections	Number of articles
Animal production and pasture	79
Plant protection	93
Plant Production	115
Social sciences	104
Soil and water	58
Plant biology	50
Microbial and plant biotechnology	15
Natural and environmental resources	31
Food technology	4
Agro-meteorology	2
International congresses, seminars, etc.	390
Editorials, miscellaneous, etc.	9
Total	949

Source: agrocienciauguay.uy

A total of 949 articles^{XXI} have been published, including papers at scientific meetings. As it might be expected, from a strictly quantitative point of view, the largest number of articles concern papers presented at congresses, international seminars and other events with equivalent characteristics. However, the qualitative analysis is surprising because, although there is a certain predominance of articles dedicated to plant production (115), the second section with more articles is of social sciences (104), which exceeds more specific areas of knowledge of agronomy, such as the case of plant protection (93 articles), or animal production and pasture (79).

^{XXI} Up to and including volume 26, number 1 of 2022.

^{XXII} Hernández J, Meurer E. Óxidos de hierro en los suelos: sus propiedades y su caracterización con énfasis en los estudios de retención de fósforo. *Agrociencia* (Uruguay). 1997;1(1):1-14.

^{XXIII} Granada de Willink MC, Scatoni I, Terra AL, Frioni MI. Cochinillas harinosas (*Homóptera*, *Pseudococcidae*) que afectan plantas cultivadas y silvestres en Uruguay: Listas actualizadas de plantas hospederas. *Agrociencia* (Uruguay). 1997;1(1):96-9.

This indicator highlights the importance of social analysis, both from the point of view of the socio-productive reality in which the research must be inserted, and from the point of view of the demands that the same social reality makes to the institution, a characteristic concern of the Uruguayan agronomy since the foundation of the School in 1907, despite the fact that it has not always or necessarily had the due resonance outside the institution⁽⁶⁾. [Table 3]

Despite the fact that the founders reiterate that the journal was born from the requirement to publicize the research that was being carried out in the School and to generate a space for debate with a markedly "national" emphasis, the first article published in the first issue of *Agrociencia Uruguay* was the result of the collaboration of a Uruguayan researcher, Jorge Hernández, of the Chair of Soil Fertility, and a Brazilian researcher, Egon Meurer, of the Departamento do Solos of the Universidade Federal do Rio Grande do Sul in Porto Alegre^{XXII}. In the same inaugural issue, there was an article resulting from the collaboration between María Cristina Granada de Willink, of the CONICET of San Miguel de Tucumán, Iris Scatoni, of the Entomology Laboratory of the School of Agronomy, and Ana Lia Terra and M. I. Frioni, of the Agricultural Protection Service of the Ministry of Livestock, Agriculture and Fisheries (MGAP in Spanish)^{XXIII}. There was also an article by Borsani, Urrestarazú and Díaz that reported on the collaboration in research between the School of Agronomy and the School of Chemistry^{XXIV}. Volume 2 of the journal reported on the first joint research of the School with a European university: between the chairs of Plant Physiology and Fruit, and the Department of Plant Production of the Universidad Politécnica de Valencia^{XXV}. In the following volume there was the first collaboration with an INIA center from Treinta y Tres, with the Chair of Biochemistry, which "officially" inaugurated the growing relationship between the two institutions in the journal^{XXVI}. In the same volume the first collaboration of a foreign researcher was published, from the Chair of Agricultural Zoology of the School of

^{XXIV} Borsani O, Urrestarazú H, Díaz P. Diferentes métodos para la determinación de la actividad nitrato reductasa en tejidos de *Lotus* sp. *Agrociencia* (Uruguay). 1997;1(1):50-4.

^{XXV} Gravina A, Juan M, Arbiza H, Almela A, Coelli V, Agustí M. Respuesta productiva del tangor 'Ellendale' (*Citrus sinensis* L. Osb. X *C. reticulata* BL.) a diferentes fechas del anillado. *Agrociencia* (Uruguay). 1998;2(1):112-6.

^{XXVI} Irisarri P, Gonnet S, Deambrosi E, Monza J. Diversidad de cianobacterias con heterocistos en suelos cultivados con arroz. *Agrociencia* (Uruguay). 1999;3(1):31-7.

Agricultural and Forestry Sciences of the University of La Plata^{XXVII}.

Thus, even though all interviewees reiterate and highlight the "national" aspect of the journal, *Agrociencia Uruguay* was characterized from the beginning as a space open to collaborations between researchers from the School of Agronomy and researchers from other countries, not necessarily regional, but to networks already consolidated enough to be able to generate research results. Likewise, regardless of the repeated reference that the main function of the journal was to promote research by members of the School, from its first issues it was characterized by opening up to studies carried out by researchers from other Uruguayan institutions and from other countries.

The survey of the institutional affiliation of the authors of the published articles offers important indications to approach the institutional and personal networks of the researchers, as well as the inter-institutional links that have been generated in this period or that were already consolidated at the beginning of the publication of *Agrociencia Uruguay*. The relatively questionable criterion for the classification of authors, as discussed above, has been based on the following categories:

- A. School of Agronomy in its different locations: Montevideo; Centro Regional Sur Experimental Station (EECRS) in Canelones; Mario A. Cassinoni Experimental Station (EEMAC) in Paysandú; Experimental Station of School of Agronomy in Salto (EEFAS); Prof. Bernardo Rosengurt Experimental Station (EEBR) in Cerro Largo.
- B. School of Agronomy in collaboration with other national or international institutions, with the exception of collaborations between researchers from the School of Agronomy and INIA.
- C. National Institute of Agricultural Research (INIA) from its General Directorate to the Experimental Stations: La Estanzuela, Las Brujas, Salto Grande, Tacuarembó, and Treinta y Tres. Collaborations with other national or international institutions are included.
- D. Other Uruguayan institutions, both public and private, of a national, regional or local nature

that do not correspond to INIA or to the School of Agronomy.

- E. Institutions of Latin America.
- F. Institutions (universities, research centers, etc.) from countries outside Latin America and international institutions.

The data indicates a clear and predictable predominance of articles written by researchers from the School, both as specific groups and in collaboration with other institutions at the national and international levels. With respect to Uruguay, the authors who do not belong to the School are part of different schools of the University of the Republic (Veterinary Medicine, Sciences, Chemistry, Engineering and Social Sciences), although this is a little distorted by the presence of issues dedicated to congresses and seminars, occasions in which the number of articles of researchers from other departments increases substantially [Table 4].

Something similar happens with institutions linked to the agricultural sector, although to a lesser extent, since publications, individually or in collaboration with researchers from the School, scholars from the Ministry of Livestock and Fisheries, the Agricultural Plan Institute, the Clemente Estable Research Institute, the National Institute of Viticulture (INAVI), the Uruguayan Wool Secretariat and other private bodies, are much more frequent and appear independently of the publication of the minutes of congresses, particularly in the case of INAVI. Despite the fact that, as stated, the first collaboration of an INIA researcher dates back to 1999, since the institution assumed co-responsibility for the publication of the journal in 2006, there has been a constant increase in collaborations of INIA researchers and, since 2010, a representative number of articles reporting on research carried out by INIA and faculty scholars.

Apart from contributions with other national agencies and institutions, it is relatively difficult to determine the reasons that can explain what has led to the collaboration of the School's researchers with others from different institutions for the publication of articles in the journal, leaving aside those that show the cooperation determined by the presence in situ and by the convergence of scientific interests (for example, the notes published between EEMAC professors and the Uruguayan Wool Secretariat,

^{XXVII} Carrizo P. Estudios biológicos preliminares sobre *Halticus pyhmaeus* (Hemiptera: Miridae). II. Preferencias sobre leguminosas. *Agrociencia* (Uruguay). 1999;3(1):27-30.

between INAVI and the Plant Production Department, or between School faculty and INIA researchers).

A thorough examination of these articles reveals

how the international agronomic research networks in which the School faculty have been involved have originated, how long they have survived and how they have evolved [Table 4].

Table 4. Articles by year according to the institutional membership of the authors

YEAR	TOTAL ARTICLES	S. of Agronomy	S. of Agronomy COL.	INIA	S. of Agronomy INIA	INST. URUGUAY	INST. LAT-AM	INST. EXTRA-LATAM
1997	12	8	3					1
1998	14	12	2					
1999	12	8	2		1			1
2000	14	9	3	2				
2001	12	6	3	1	1		1	
2002	22	13	5	1			2	1
2003	22	12	6				4	
2004	20	12	3	1			4	
2005	76	4	6	6	1	20	33	6
2006	21	8	5			1	7	
2007	46	16	8		2	6	9	5
2008	22	9	4	2	3	1	2	1
2009	31	9	4	3	3	3	3	6
2010	143	45	24	17	8	44	4	1
2011	34	20	6	2	3	1	1	1
2012	83	22	3	11	6	6	9	26
2013	38	9	9	8	3	4	3	2
2014	34	12	3	4	4	3	8	
2015	83	14	6	14	7	4	23	15
2016	31	11	4	6	1	2	7	
2017	30	6	2	5	4	2	10	1
2018	27	7	4	3	1	2	8	2
2019	33	7	5	7	4	2	7	1
2020	31	6	6	7	2	3	7	
2021	50	9	6	16	3	5	10	1
2022	8		2	1	2	2	1	
TOT.	949	294	134	117	59	111	163	71

Source: agrocienciauguay uy

In general, we can see a certain consistency of articles in collaboration with Brazilian, French (particularly on issues related to viticulture) and, since 2000, Spanish institutions. Naturally, this does not imply that there are not any articles shared with other countries; in some cases, there are signs that would seem to indicate a continuous relationship over time (as in the case of Australian universities), while in others the collaboration would seem to be extemporaneous^{XXVIII}.

The percentage of Latin American authors is quite high, but reveals some peculiarities. First, almost all of these contributions come from Argentina and Brazil, while the percentage of articles published by authors from other countries in the region, with the exception of Cuba, is limited to participation in

congresses. Second, while the publication of articles by Brazilian researchers in collaboration with Uruguayan equivalents is early and frequent, articles that account for contributions between Argentine and Uruguayan scholars are less common and of later appearance.

Finally, the presence of publications by researchers from European, American, Australian or, more generally, non-Latin American institutions is very common, although the number grows exponentially in the issues dedicated to international congresses. In any case, the presence of notes by French and Spanish authors is continuous, in collaboration or not with Uruguayan researchers.

^{XXVIII} As is the case, for example, of the collaboration between a researcher of the Faculty and a member of the Institute of Botany, Bulgarian Academy of Sciences; see Orfeo Crosa O, Bancheva S.

Centaurea debeauxii Gren. & Gordon (*Asteraceae*, *Cardueae*), a European species, new to Uruguay. *Agrociencia* (Uruguay). 2006;10(1).

4. By way of conclusion, the open matters for the development of the magazine

As mentioned, this study is an initial approach to the trajectory of *Agrociencia Uruguay*, with substantially descriptive pretensions. The only conclusion that can be reached is related to the unquestionable positive impact of the journal on the national and international level, both for the relevance of its studies, and for the promotion and consolidation of networks of researchers.

Likewise, the decision to share the direction of the journal with INIA and the constant collaboration with other institutions —university and non-university— would indicate a very marked interdisciplinary vocation that is evident in an inter-institutional integration policy that, despite being suggested in an implicit way and not clearly proclaimed, is offering effective results, something not always frequent in the Uruguayan scientific and institutional context^{XXIX}.

However, some apparent contradictions in the editorial policy, which can be found throughout this first approach, raise a series of issues that do not appear to be secondary and that will be cited as starting points for future and more ambitious research.

As it was said, *Agrociencia Uruguay* is a journal that has been founded following a substantially "national" criterion in several ways: the need to publicize research originating in the academic fields of the School of Agronomy, to relate teaching more effectively with research through the stimulation of the publication of results, to promote the dissemination of studies, to strengthen the training of future agronomic engineers by familiarizing them to the edition of their theses. The interviewees insist on this "generalist" character, which allows to address the different issues that have shaped the tradition of studies in the institution, and on the relevance that the results of these investigations have in their application in a given reality:

In a technological field where there are a number of technological problems to be solved, which are very local, internationally they tell you that this is of no interest. [...] when you have the responsibility to teach and carry out research, technological application, that is, development, the novelty is innovation, what in a

country is used in a certain way, you implement it in your country. This at the universal level, for journals that focus on knowledge creation, you are not creating, but you are adapting to solve your problem, and that is development, innovation^{XXX}.

From this constant relationship with the environment arose the need to incorporate to the edition of the journal "other topics, in addition to the traditional ones, such as the case of food technology, agroecology, forestry or food safety, among others, in order to adapt to the circumstances, demands and requirements of agriculture"^{XXXI}.

For its part, this claim to promote an absolute adaptation to the media has not hindered the decision to publish the journal in English^{XXXII}, it has not prevented the growing specialization of the topics, nor the strongly experimental character of the articles published.

There are constant characteristics of Uruguayan agronomy such as the tensions between empiricism and practical experimentation, on the one hand, and research free of immediate demands, between the results of direct experience and the pretensions of trials, between the demands of the productive sector and the needs of research, between the issues that are produced and derive from local interests and issues derived from theory^{XXXIII}. Cyclically, it is considered essential to place greater emphasis on the need to increase the relationship with the environment to avoid excessive abstraction of research or, in the opposite sense, to insist on the necessary freedom and the obstacle that may represent the persistence of practices considered routine or ineffective.

From this point of view, *Agrociencia Uruguay* does not solve the problem. However, although indirectly, it tries to reach a synthesis that aims to overcome this dilemma. The declared intention to involve different institutions, both in the decision-making process of the journal's editorial policy and in the publication of articles, could be considered a good example of a strategy, perhaps not clearly conscious, to overcome the often-false dilemma between science and practice. The decision to publish in English, that is, the determination to describe and examine a local agronomy in a "universal" language, is an

^{XXIX} The intention to break with "the culture of the farms", and to promote a culture and a clearly trans-institutional practice has been characteristic of the Faculty of Agronomy since the return to democracy. On the subject, see, among several examples, the Prólogo del decano Fernando García Préchac^(7: p.9-16).

^{XXX} Interview (E1).

^{XXXI} Interview (E3).

^{XXXII} A courageous decision, but with several complications, particularly considering the historical-social meaning of some words related

to the Uruguayan agricultural sector. For example, the term "alambrado" has a cultural meaning that can hardly be translated into "perimeter fence" or "wired". Not to mention the concept of "desalambrar".

^{XXXIII} And that's not all. The bibliography on cases from other countries is almost infinite. See, for the Spanish case, Pan Montojo⁽⁸⁾.

example of how the tension between a specific space and a scientific reality that tends towards interconnection and generalization can be overcome.

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