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Sixty-year anniversary of the journal Plant Protection Science

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Abstract: In 2024, the journal Plant Protection Science (PPS) completes 60 years of publication (1965–2024). Its roots extend back to the year 1921. In recent years, PPS has developed into an international scientific journal focused on all aspects of plant protection science, published exclusively in English, and with an international editorial board. The publisher is the Czech Academy of Agricultural Sciences (CAAS), celebrating its 100th anniversary (1924–2024). PPS is one of eleven agricultural journals published by CAAS. On its 50th anniversary, PPS published a detailed overview of its history and development. This latest critical review summarises developments during the last ten years; however, in special cases, also with a longer-term perspective. During the last decade, PPS has made impressive progress and is now among the world's key scientific journals. Recently, the journal has been added to the indexing and abstracts of many international databases, e.g. BIOSIS Previews, SCOPUS and Web of Science. In 2014, PPS had an impact factor of 0.597, but during the last few years, PPS's IF has ranged between 1.3 and 1.4 (for 2023, IF = 1.7), with the possibility of further increase. Each year, PPS is published quarterly, with a total of around 40 papers (original papers, reviews, short communications, biographical notices, and book reviews). Per year, about 70–80% of papers by authors/co-authors from abroad are published (Europe, America, Asia, Australia and Oceania). In the final part of this presentation, we describe some recent achievements and discuss key topics related to PPS's future development.

Keywords: history; contemporary development; editorial policy; ranking in Web of Science and SCOPUS database; scientific impact; visions and future developments

Scientific and professional (specialised) journals/periodicals play an important role in communication between scientists and professionals and in disseminating new knowledge in the relevant scientific field. The first scientific journals appeared over 350 years ago (Fyfe et al. 2022). A greater expansion of the publication of these journals occurred in the developed countries of Europe (later in the USA) mostly during the 18th and 19th centuries (Peiffer et al. 2013), with many of these journals, which have long traditions, having been published regularly since the end of the 19th or the beginning of the 20th century (Meadows 1980).

This also applies to journals in phytopathology, plant disease and plant protection. The German Journal of Phytopathology (formerly Phytopathologische Zeitschrift) is an example of one of the longest, regu-

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larly published scientific journals in Europe in this field. This journal, now published by Wiley (formerly Paul Parey Verlag), is already in its 172nd volume in 2024 (published since 1929). The journal Phytopathology [published by the American Phytopathological Society (APS)] will be in its 114th year in 2024 (published since 1910).

The historical lands of the Czech Crown were influenced by German-language literature for a long time, since before the First World War. Consequently, in this period, there were no adequate Czech-language professional journals or other pertinent literature on plant protection. One of the few exceptions was the textbook written in Czech by Dr. Jaroslav Smolák Plant Pathology, which was published in 1913; its second expanded edition was then published in 1920 (Smolák 1920), i.e. already in an independent Czechoslovakia. In the preface to this edition, J. Smolák characteristically wrote: "I only wish that this edition would enter into happier years than the first one entered five years ago and that it would help to spread the interest in plant pathology in our Czech state". The disintegration of the Austro-Hungarian monarchy and the constitution of independent Czechoslovakia in October 1918 was undoubtedly a great impulse for emancipation in this direction. The historical aspects and contexts of the development of agriculture, plant medicine, and plant protection in Czechoslovakia in 1918–1938 have been summarised in detail elsewhere (Kůdela et al. 2020). In the period after 1918, there was a gradual expansion and publication of agricultural professional literature written in Czech; in addition to book publications (e.g., the above-mentioned textbook of Dr. J. Smolák), the first specialist journals were also created and published.

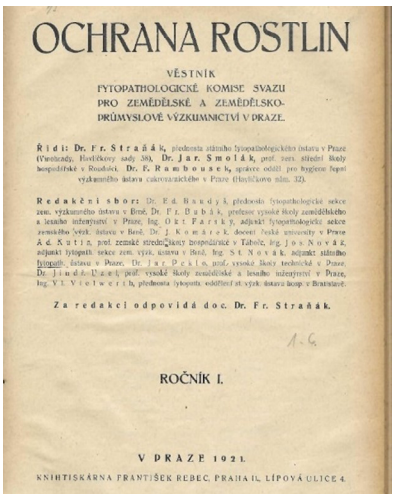
HISTORY OF THE JOURNAL

In connection with our journal, this history was first detailed and elaborated on the occasion of the 50th anniversary of the publication of the journal Plant Protection Science (PPS) (Lebeda et al. 2014, 2015), and more recently, in the Czech language, on the occasion of the 60th anniversary (Lebeda 2024). For this article, our main objective is to summarise the events surrounding PPS in the years 2014–2023/2024; readers are referred to the first professional (not scientific) journal focused on plant protection created in Czechoslovakia in 1921 under the name Ochrana Rostlin (Plant Protection) (Figure 1A). Starting in 1926, this journal was transformed into a scientific journal, which was then published with varying periodicity and with breaks in 1934–1937 and 1943–1945 until 1950 (Figure 1B) during the period of political and economic upheavals in Czechoslovakia and the rise of the communists to power, i.e. after February 1948, this journal stopped being published completely in 1950, and its publication was resumed only in 1965.

CONTEMPORARY DEVELOPMENT OF THE JOURNAL

A new version of Ochrana rostlin resumed publication in 1965, and its periodicity was settled as a quarterly. Articles were published in Czech or Slovak with a foreign language abstract (Russian, English or German). In the years 1965–1989, 25 volumes were published. After the political changes at the end of 1989, significant differenc-

(A)

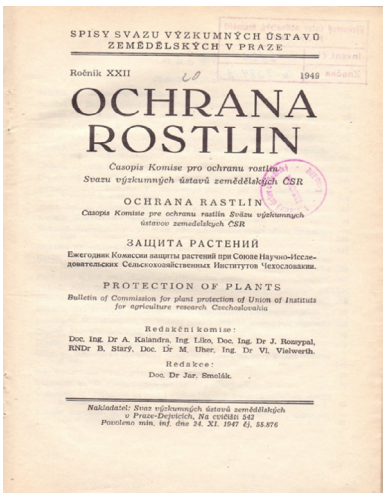

OCHRANA ROSTLIN

VĚSTNÍK
FYTOPATHOLOGICKÉ KOMISE SVAZU
PRO ZEMĚDĚLSKÉ A ZEMĚDĚLSKO-
PRŮMYSLOVÉ VÝZKUMNICTVÍ V PRAZE.

ROČNÍK I.

V PRAZE 1921.

(B)


SPISY SVAZU VÝZKUMNÝCH ÚSTAVŮ ZEMĚDĚLSKÝCH V PRAZE

Ročník XXII 1949

OCHRANA ROSTLIN

Časopis Komise pro ochranu rostlin Svazu výzkumných ústavů zemědělských ČSR

OCHRANA RASTLIN

ЗАЩИТА РАСТЕНИЙ

PROTECTION OF PLANTS

Figure 1. Front pages
A – the journal Ochrana Rostlin (Volume I/1921); B – the journal Ochrana Rostlin from 1949

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es gradually occurred in the journal's focus and management and the composition of its editorial board. Until 2010, the journal was published by the Institute of Agricultural Economics and Information (ÚZEI) in Prague under the patronage of the Czech Academy of Agricultural Sciences (CAAS), which, starting in 2011, took over full responsibility for publishing not only PPS, but also ten other agricultural scientific journals. The set of covers in Figure 2 reflects the development and changes in the PPS journal over the last 60 years.

Cover graphics and information on the journal covers (1965–2024)

The covers mainly provide information about the title of the journal and its publisher(s), year of publication, volume/s and journal issue. Together with this information, the graphics have changed over time, sometimes according to trends in design, occasionally also to mark some anniversary or to reflect national political changes. From 1965 to the present day, the covers are only black, white and green. Until 1997, this journal listed two volumes on the covers, one counting from 1965 and the other written in Roman numerals in brackets counting from 1921.

From 1965 to 1975. The first title of the journal was Sborník ÚVTI, Ochrana rostlin (Proceedings of ISTI – Institute of Scientific and Technical Information, Plant Protection) (Figure 2A). Only in Vol. 4 (XLI) 1968, Ústředí zemědělského a potravinářského výzkumu (the Centre for Agricultural and Food Research) appeared next to the ISTI, since Vol. V (XLII) 1969 the Czechoslovak Academy of Agriculture has been listed there (Figure 2B). 1971 was the first year the subtitle Vědecký časopis (Scientific Journal) appeared. The journal's ISSN was first published on Vol. 10(4) (X–VII) cover in 1974. A pictogram accentuating the 20th anniversary of some event appeared on the cover of Vol. 9 (XLVI) 1973. Unfortunately, the topic of that anniversary is obscure; there was no explanation given in the journal (Figure 2C). In Vol. 10 (XLVII), the cover graphics pointed most likely to the 25th anniversary of the communist coup in 1949 (Figure 2D). In Vol. 11 (XLVIII), 1975 on the cover of issues 2, 3 and 4, a pictogram containing a sickle and hammer marked the 30th anniversary of the end of World War II (Figure 2E).

From 1976 to 1989. The title was Sborník ÚVTIZ, Ochrana Rostlin (Proceedings of ISTIA – Institute of Scientific and Technical Information for Agriculture – Plant Protection). In 1976–1979, which still was the period of political normalisation, all covers had a pictogram of a sickle and hammer together with a cereal ear (Figure 2F); in Vol. 16 (LIII) 1980, it was replaced by the logo of the Czechoslovak Academy of Agriculture (Figure 2G).

From 1990 to 1992. The title was Ochrana rostlin (Plant Protection) (Figure 2H). In 1992, the name of the Czechoslovak Academy of Agriculture was changed according to the country's new name, and the term "sciences" appears in its name for the first time: the Academy of Agricultural Sciences of the ČSFR (Czech and Slovak Federative Republic).

From 1993 to 1997. On January 1, 1993, the ČSFR ceased to exist, and the two national republics became fully independent entities with full rights of successor states – the Czech Republic and the Slovak Republic. The new title, which also contained an English equivalent, was Ochrana rostlin, Plant Protection. On the cover, the Czech Academy of Agricultural Sciences and Slovak Academy of Agricultural Sciences were listed in 1993–1994 (Figure 2I); from 1995 (till now), only the Czech Academy of Agricultural Sciences.

From 1998 to 2001. The title was Plant Protection Science, Ochrana rostlin. The journal format was changed from a smaller one to A4. The 1998 cover has unique graphics (Figure 2J); this was changed the following year and was used till 2001 (Figure 2K)

From 2002 to 2024. The title was Plant Protection Science. The graphics that started in 2002 remained practically the same (Figures 2L, 2M) with only minor changes until 2018. From Vol. 50, 2014, there is also eISSN on the cover. Until 2010, the journal was published by the Institute of Agricultural Economics and Information (ÚZEI) in Prague under the patronage of the CAAS. Starting in 2011, CAAS took over full responsibility for publishing not only PPS, but also for ten other agricultural scientific journals. From 2019 till now, the graphics have remained the same (Figure 2N).

Changes past November 1989

In the post-November 1989 era, the journal had two editors-in-chief: Prof. Ing. Václav Kůdela, DrSc. (Research Institute of Crop Production, Praha-Ruzyně) until 2006 (Lebeda 2022a,b), but in the course of 2006, prof. Ing. Aleš Lebeda, DrSc. (Palacký University in Olomouc)

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Figure 2. Front pages

A – cover of the Sb. ÚVTI OR in 1966 (used 1965–1970); B – cover of the Sb. ÚVTI OR in 1971 (used 1971–1972); C – part of the cover Sb. ÚVTI OR in 1973; D – part of the cover Sb. ÚVTI OR in 1974; E – part of the cover Sb. ÚVTI OR in 1975; F – cover of the Sb. ÚVTIZ OR in 1977 (used 1976–1979); G – cover of the Sb. ÚVTIZ OR in 1982 (used 1980–1985); H – cover of OR in 1990 (used 1986–1992); I – cover of OR PP in 1993 (used 1993–1997); J – cover of PPS OR in 1998; K – cover of PPS OR in 1999 (used in 1999–2001); L – cover of PPS in 2002 (used 2002–2010); M – cover of PPS in 2012 (used 2011–2018); N – cover of PPS in 2024 (used 2019–2024)

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(Kůdela et al. 2011; Ondřej et al. 2021), who had been a member of the journal's editorial board since 1990, took over the scientific management of the journal and still serves as Editor-in-Chief.

Especially after the internationalisation of the journal (1997/1998) and its editorial board, the journal gradually moved forward. The editorial board has undergone very dramatic changes; a number of prominent Czech scientists who were previously neglected have joined it, and it has also been possible to recruit respected specialists from abroad, e.g. from Italy, Israel, Hungary, Germany, Norway, Sweden, United Kingdom, USA and of course from Slovakia. All of these scientists have contributed significantly to advancing PPS's development, quality, and prestige. For example, members of the Department of Plant Protection CAAS, the Czech Society of Plant Medicine (Kůdela 2016) and the Czech Society for Plant Pathology (Lebeda & Komínek 2023) participate significantly in the work of the editorial board. The personality of RNDr. Marcela Braunová, who was an editor of this journal in the years 1974–2019, also played an integral role in this process. With her diligence, professionalism and communication, she significantly contributed to the development of PPS, particularly after 1989 (Lebeda & Kůdela 2019). In the years 2019–2021, Mgr. Petra Kolářová, Ing. Gabriela Uhlířová, and Ing. Helena Čermáková also worked as editors for short periods, and Ing. Eva Karská has been the Executive Editor since January 2022 until now, with Ing. Ilona Adamírová transitioning into this position since 2023. In 2023, the editorial board and Publishing Committee of CAAS decided to create the position of Co-Editor, prof. Ing. Radovan Pokorný, Ph.D. (Mendel University in Brno), has now assumed that role.

CURRENT STATE OF THE JOURNAL

Basic features related to PPS development during the period 2010–2023 are summarised in Table 1. From these data, it is evident that the journal has been steadily growing, not only from the quantitative viewpoint but also in quality, i.e. international reputation, number of published papers from abroad and citation rate (Figures 3 and 4).

Until 2004/2005, the citation rate of PPS was very low (Figure 3), but from 2006/2007, it began a gradual increase. This positive development was also reflected in the fact that, since 2012, PPS has been included in the so-called "monitoring" of the Web of Science (WoS) database and received its first Impact Factor (IF) for the year 2014 (IF = 0.597). In the following years, IF progressively increased and, in recent years, has stabilised at values of 1.3–1.4 (Table 2), but for 2023, IF reached 1.7.

Table 1. Basic statistics of Plant Protection Science for the years 2010–2023

Year	Manuscripts submitted	Rejected	Number of published pages	Number of papers CZ/ abroad (in total)	Number of reviewers/ countries
2010	72	23 (32%)	188	15/9 (24)	72/22
2011	69	42 (61%)	176	8/10 (18)	80/22
2012	93	78 (84%)	178 + 48 S	14/18 (32)	92/28
2013	94	64 (68%)	198 + 54 S	11/13 (24)	71/26
2014	107	71 (66%)	230	10/19 (29)	69/23
2015	197	146 (74%)	230	10/21 (31)	86/27
2016	173	147 (85%)	284	11/26 (37)	115/29
2017	163	141 (87%)	272	7/27 (34)	89/30
2018	169	136 (80%)	283	5/30 (35)	82/30
2019	133	87 (65%)	275	11/24 (36)	93/28
2020	191	145 (76%)	327	10/27 (37)	107/36
2021	182	141 (77%)	348	5/35 (40)	121/39
2022	139	110 (79%)	368	7/30 (37)	111/29
2023	137	103 (75%)	393	5/30 (35)	120/30

CZ – Czech Republic; S – Special Issues

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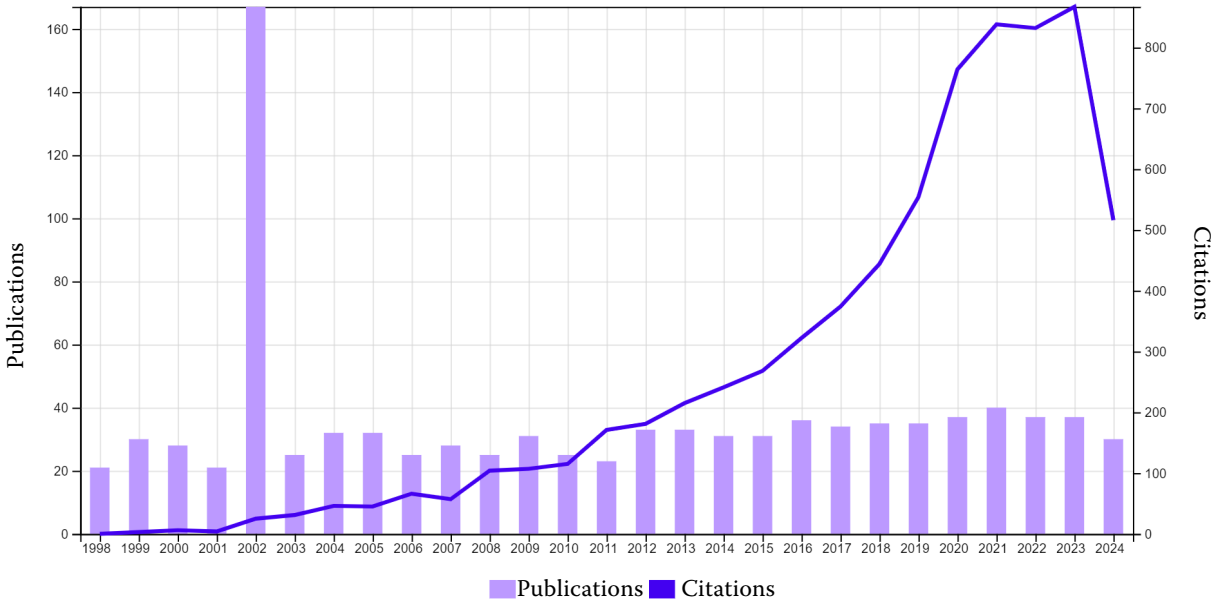

Figure 3. Development of Plant Protection Science citations in Web of Science (WoS, All Databases) in the years 1998–2024 (accessed August 27, 2024)

The chronology of its publication has stabilised over the last 10–15 years and its page volume has approximately doubled (earlier at about 180 pages to its current level of about 400 pages/year) (Table 1), which has contributed to the quality and credibility of PPS. Over time, resolving a general shortage of articles was also possible, which was especially noticeable in the 1990s. Before the introduction of a manuscript processing fee (from 2016 = 200 EUR; from 2023 = 565 EUR for a standard article), almost 200 manuscripts were delivered to the PPS per year (Table 1); in recent years, it has been around 140–170 manuscripts/year, which is about four times more than possible to publish in one year. Also, the number of articles published yearly in PPS increased significantly, from about 20 to almost 40. There was also a shift in geographic representation. Originally, most

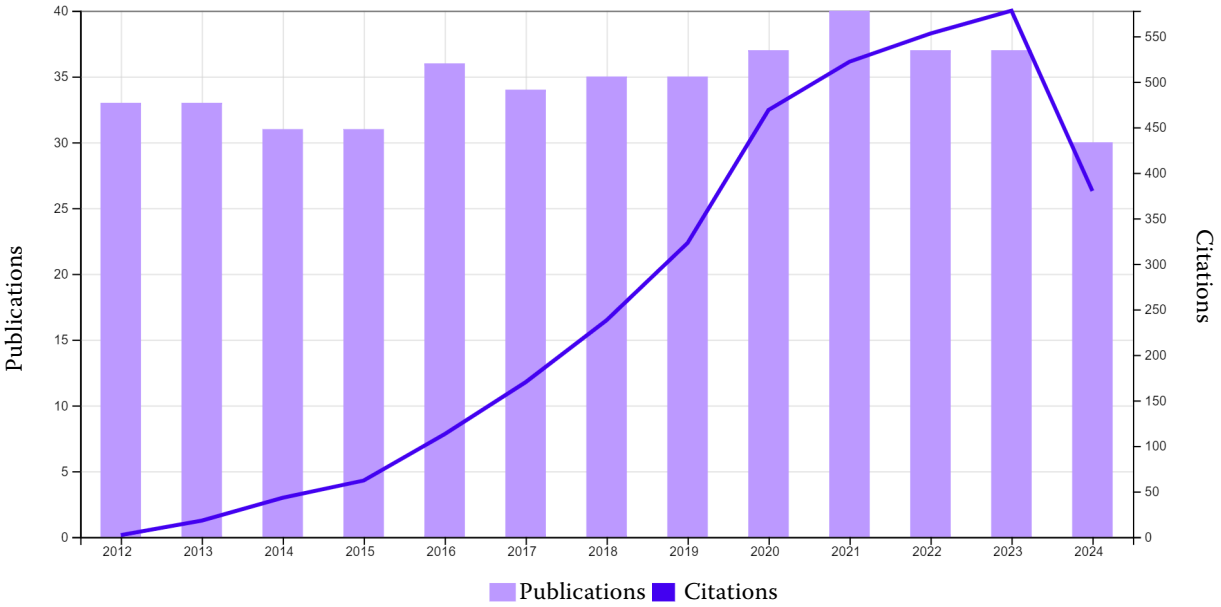

Figure 4. Development of Plant Protection Science citations in Web of Science (WoS, Core Collection) in the years 2012–2024 (accessed August 27, 2024)

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Table 2. Tracking the Impact Factor (IF) for Plant Protection Science (PPS) on Web of Science (WoS) in the years 2014–2023

Year	Impact Factor (IF)	5 year IF**
2014*	0.597	–
2015	0.661	–
2016	0.742	–
2017	1.076	–
2018	1.464	1.272
2019	1.130	1.361
2020	1.464	1.834
2021	1.414	1.862
2022	1.300***	1.500
2023	1.700	1.600

* in 2014 PPS obtained its first IF; ** this IF value is calculated from the citation background during the preceding 5 years; *** starting 2022, IF values are expressed only to one decimal place

authors were Czech and Slovak, but today, about 70–80% are from other countries. Between 2014 and 2023, authors represented between 20 (2014) and 28 countries (2019, 2021), including the Czech Republic (Table 3). The fact that one review paper has been published in nearly every recent issue of PPS is another positive development that significantly contributes to a rise in the journal's citation rate, which had been increasing linearly, and later even exponentially, from 2006 until recently (Figure 3). The number of citations in the WoS Core Collection Database is still gradually increasing (Figure 4). These metrics demonstrate that PPS is in good condition and has prospects for further development.

FOCUS OF THE JOURNAL AND ITS CITATION RATE

The aim of the PPS journal management is to cover the full scientific breadth of the field of plant protection (Lebeda et al. 2014), ensuring a high diversity of articles within the field of Plant Protection Sciences. In the last decade, a number of interesting articles were published in PPS. The most-cited include a literature review of botanical insecticides by R. Pavela (PPS 2016, 52/4: 229–241), which reached over 300 citations in WoS All Databases, followed by a review of fungicide resistance by D.W. Hollomon (PPS 2015, 51/4: 170–176) with over 120 citations as of the end of August 2024. In recent years, among the most thematically attractive articles are those focused on biological plant protection, nanopesticides, resistance to agrochemicals, and the use of molecular methods in diagnostics and the study of plant-pathogen interactions. It is satisfying to know that not only the number of citations to PPS articles is increasing (Figures 3 and 4) but that PPS is cited by scientific journals in the given field of research as well as across a wide spectrum of other fields (both biological and non-biological sciences), that are among the most prestigious with very high bibliometric parameters (i.e. IF, AIS, JCI). The following journals can be used as examples where PPS papers have been cited (based on Five Year IF in 2024): Annual Review of Entomology (IF = 21.6); Comprehensive Reviews in Food Science and Food Safety (IF = 15.9); Critical Reviews in Food Science and Nutrition (IF = 10.3); Phytochemistry Reviews (IF = 7.9); Plant Journal (IF = 7.1); Journal of Experimental Botany (IF = 6.8); Journal of Agricultural and Food Chemistry (IF = 6.0); Plant Cell Reports (IF = 5.3); Journal of Industrial and Engineering Chemistry (IF = 5.3); Theoretical and Applied Genetics (IF = 5.0); Plant Disease (IF = 4.8); Biological Control (IF = 4.0); and Phytopathology (IF = 3.3).

In total, there are several hundred such journals. By the end of August 2024, more than 6 500 articles published in other journals cited more than 6 900 times articles from PPS (excluding self-citations), while a total of 959 articles published in PPS between 1998 and the end of August 2024 were included in this evaluation (according to WoS, All Databases, August 28, 2024).

DETAILED BIBLIOMETRIC ANALYSIS OF PLANT PROTECTION SCIENCE

PPS in the WoS database

WoS categories (2023). The WoS categories have always been of great importance in evaluating journals and, thus, for evaluating research, development, and innovations (R & D & I) results. There are 257 categories in WoS, while in 2008, there were only 173 (Kroftová 2011). The largest categories are EDUCATION & EDUCATIONAL RESEARCH (756 journals), ECONOMICS (602), and HISTORY (520). In contrast, the smallest categories are MICROS-

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Table 3. Countries by article affiliations in 2014–2023 (source: Web of Science – Country/Regions)

	Year published	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
	Country/Number of articles										
	Total number of articles in year	31	31	35	34	35	34	36	37	34	37
1	Czech Republic	10	11	9	9	5	10	11	6	8	5
2	Iran	9	3	3		2		1	1		
3	Turkey	5	5	1	2	4	1		5	3	1
4	Japan	2					1		1		2
5	Lithuania	2					1				
6	Algeria	1			1		1		1		
7	Austria	1					1				
8	Egypt	1	1	2		1		1	1	1	
9	Italy	1		3	1	1	1				3
10	Nigeria	1									
11	Sweden	1							1	1	
12	Syria	1									
13	Tunisia	1			1	1		1	2		2
14	Slovakia		3	6	5	2	4	7	2		1
15	Estonia		2				1		1		
16	England		1	1				2	1		
17	Israel		1								
18	Malaysia		1	1		1			1	2	
19	Mauritius		1								
20	Peoples Republic of China		1	5	3	4	2	2	5	4	8
21	Romania		1							1	
22	Serbia		1				1	1	3	2	2
23	Switzerland		1								
24	USA		1	2	2	3	1	3	1		3
25	Thailand			2	1			1		2	2
26	Bangladesh			1						2	
27	Croatia			1			1	1			
28	Greece			1				1	1	1	
29	Slovenia			1	1		2		1		
30	South Korea			1	1	2	1	1		1	
31	Uganda			1							
32	Vietnam			1		1				1	
33	Poland				3	8	7	5	1	2	4
34	Germany				2	2	1	1			
35	India				2					3	2
36	Mexico				2			1			1
37	Argentina				1						
38	Canada				1						
39	Spain				1		2	2	2		1
40	Australia					1	1				
41	Cameroon					1					
42	Finland					1					

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Table 3. to be continued...

	Year published	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
	Country/Number of articles										
43	France					1	1				1
44	Indonesia					1			1		5
45	Saudi Arabia					1		2			1
46	Belgium						1				
47	Bosnia Hercegovina						1		1		
48	Hungary						1		2	3	1
49	Iraq						1				1
50	Pakistan						1	1		1	1
51	Russia						1			1	
52	Scotland						1				
53	Taiwan						1		1		
54	Bulgaria							1	1		
55	Kazakhstan							1			
56	Luxembourg							1			
57	Morocco							1			
58	Ukraine							1		1	
59	Denmark								1		
60	Kosovo								1		
61	Netherlands								1		
62	South Africa								1	1	1
63	Montenegro									1	
64	Sudan									1	

Table 4. Countries/regions by number of articles in 2014–2023

	Country/Region	Articles		Country/Region	Articles		Country/Region	Articles		Country/Region	Articles
1	Czech Republic	84	17	South Korea	7	33	South Africa	3	49	Denmark	1
2	Peoples Republic of China	34	18	Germany	6	34	Sweden	3	50	Finland	1
3	Poland	30	19	Japan	6	35	Vietnam	3	51	Israel	1
4	Slovakia	29	20	Malaysia	6	36	Australia	2	52	Kazakhstan	1
5	Turkey	28	21	Slovenia	6	37	Austria	2	53	Kosovo	1
6	Iran	19	22	England	5	38	Bosnia Hercegovina	2	54	Luxembourg	1
7	USA	16	23	Algeria	4	39	Bulgaria	2	55	Mauritius	1
8	Italy	10	24	Estonia	4	40	Iraq	2	56	Montenegro	1
9	Serbia	10	25	Greece	4	41	Romania	2	57	Morocco	1
10	Egypt	8	26	Mexico	4	42	Russia	2	58	Netherlands	1
11	Spain	8	27	Pakistan	4	43	Taiwan	2	59	Nigeria	1
12	Thailand	8	28	Saudi Arabia	4	44	Ukraine	2	60	Scotland	1
13	Tunisia	8	29	Bangladesh	3	45	Argentina	1	61	Sudan	1
14	Hungary	7	30	Croatia	3	46	Belgium	1	62	Switzerland	1
15	India	7	31	France	3	47	Cameroon	1	63	Syria	1
16	Indonesia	7	32	Lithuania	3	48	Canada	1	64	Uganda	1

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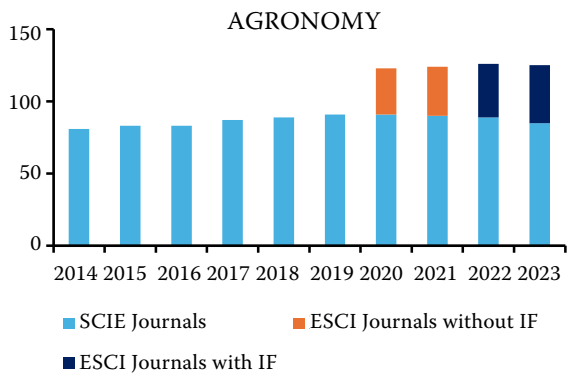

Figure 5. Number of journals in category AGRONOMY in SCIE and ESCI (Web of Science/JCR, 2024)
SCIE – Science Citation Index Expanded; ESCI – Emerging Sources Citation Index

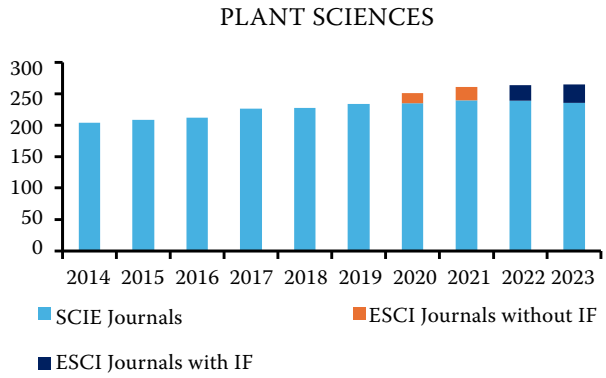

Figure 6. Number of journals in category PLANT SCIENCES in SCIE and ESCI (Web of Science/JCR, 2024)
SCIE – Science Citation Index Expanded; ESCI – Emerging Sources Citation Index

COPY, with the same number of journals as ANDROLOGY (8), and LITERATURE, AFRICAN, AUSTRALIAN, and CANADIAN (7), in response to user demand for coverage of new and rapidly developing fields that do not yet meet all the criteria for inclusion in classic citation indexes, a new index ESCI (Emerging Sources Citation Index) was created. ESCI is comparable in coverage, functions, scope and content to the classical indices SCIE (Science Citation Index Expanded), SSCI (Social Science Citation Index), and AHCI (Arts & Humanities Citation Index) (Skoček 2016). Rules for an excerpt to the ESCI have been maintained according to WoS/Clarivate methodology. Journals covered in ESCI had no IF until 2022.

PPS is currently indexed in two categories: AGRONOMY (125 journals) and PLANT SCIENCES (265 journals). Both categories belong to the SCIE index. In 2020–2023, the ESCI index also included journals falling into the categories AGRONOMY and PLANT SCIENCES. (Figures 5 and 6).

Countries (Authors) in PPS (according to WoS Country/Regions). The original Ochrana rostlin was mostly a national (Czechoslovak) journal (Lebeda et al. 2014). After political changes in the former Czechoslovakia, especially after 1997, PPS became increasingly international in scope, aiming to create a fully international scientific journal with global coverage in plant protection sciences. Basic data and trends related to this shift from 1998 to 2013 were summarised by Lebeda et al. (2014). Motivation for the earlier summary sprang from granting the first Impact Factor for PPS in 2014 (Table 2) and adding PPS to the most important bibliographic databases. Since then, the international scientific community has been interested in publishing in PPS. Details about this topic are summarised in Table 4. From these data, it is evident that authors of papers published in PPS now represent more than 60 countries around the globe.

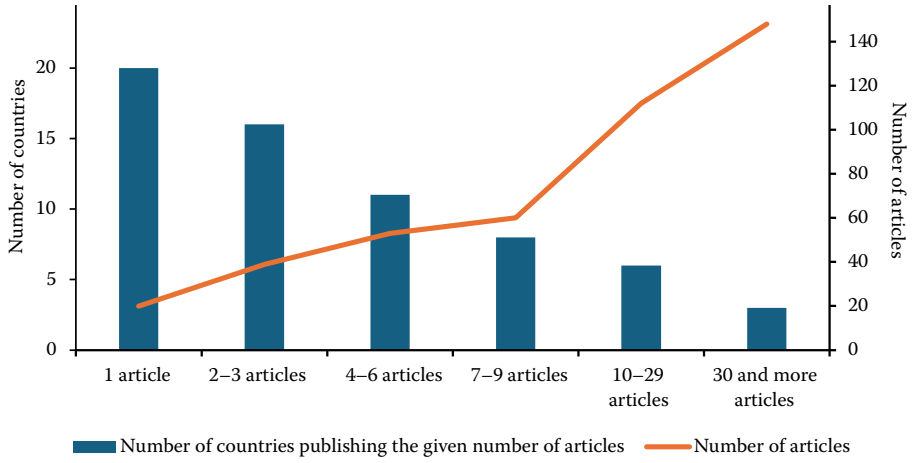

Figure 7. Frequency of countries in Plant Protection Science with the given number of articles and number of articles published by their authors in 2014–2023

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Table 5. Numbers and percentages of affiliations and countries in 2014–2023

Affiliations/number of countries	Year									
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Total number of affiliations	67	65	78	73	78	83	86	84	77	85
Czech affiliations (%)	21	20	27	25	27	28	31	31	26	31
Foreign affiliations (%)	79	80	73	75	73	72	69	69	74	69
Numbers of countries per year	13	16	20	18	20	28	24	28	22	21

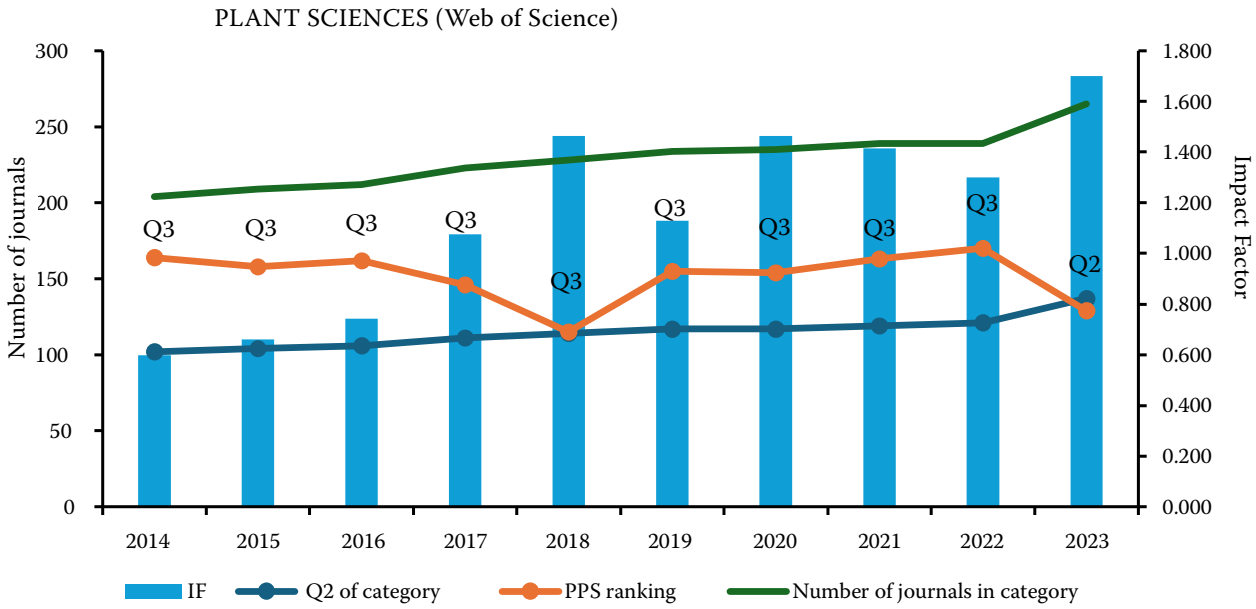

Figure 8. Development of Plant Protection Science (PPS) Impact Factor (IF), the cut-off IF value of Q2, the total number of journals, and PPS ranking of PLANT SCIENCES category in 2014–2023

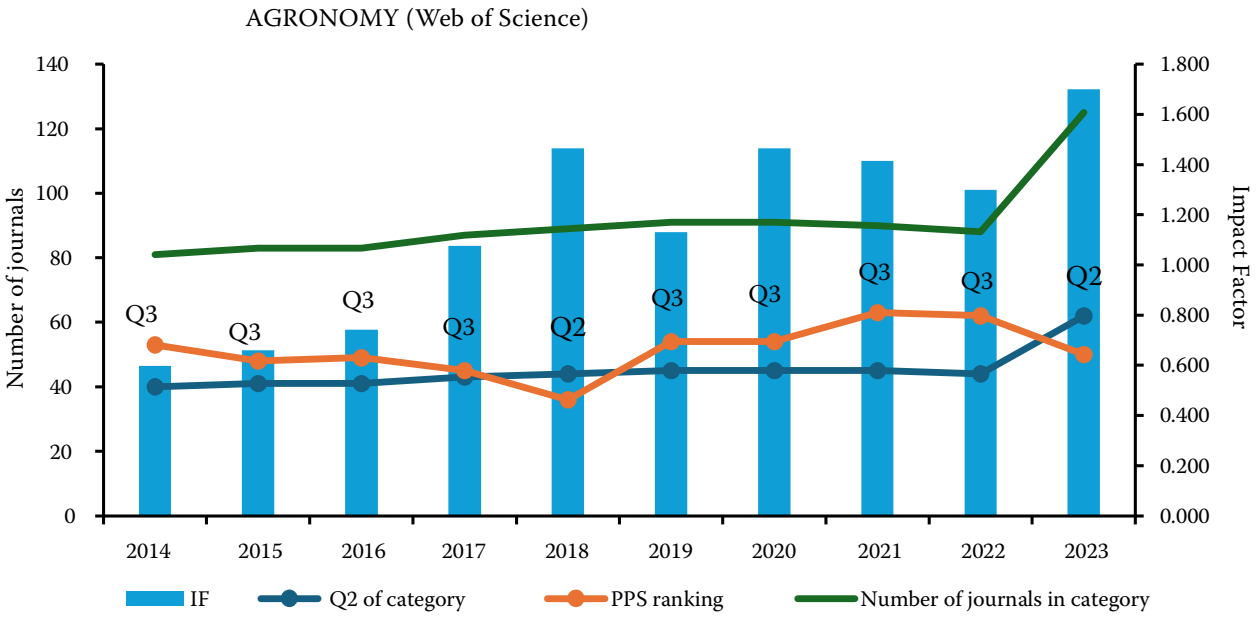

Figure 9. Development of Plant Protection Science (PPS) Impact Factor (IF), the cut-off IFvalue of Q2, the total number of journals, and PPS ranking of AGRONOMY category in 2014–2023

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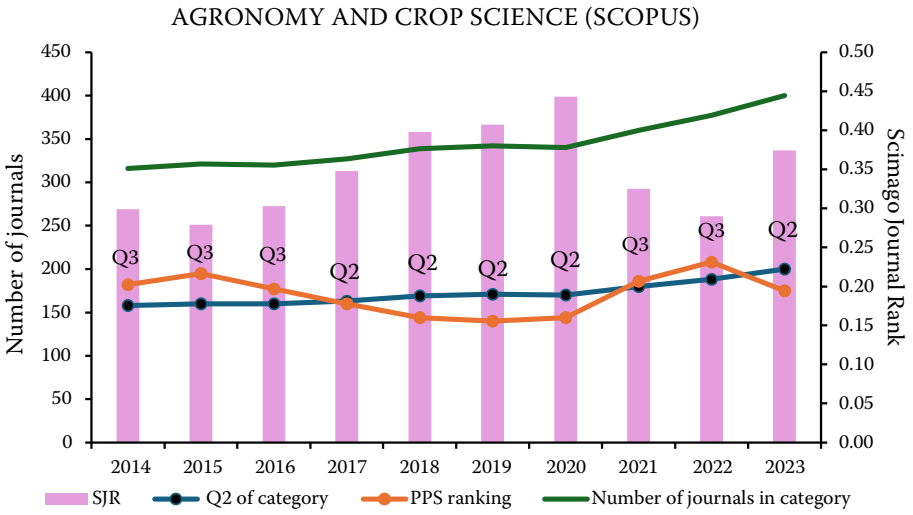

Figure 10. Development of Plant Protection Science (PPS) Scimago Journal Rank (SJR), the cut-off value of Q2, the total number of journals, and PPS ranking in AGRONOMY AND CROP SCIENCE category in 2014–2023

2014–2023 has been a productive period, with many articles written by authors beyond the Czech Republic. The data source for Tables 3, 4, 5, and Figure 7 is the WoS database, Countries/Regions module. Table 4 shows that the most frequent authors in 2014–2023 were those from the Czech Republic, China, Poland, Slovakia, and Turkey. The list of countries does not include The United Kingdom but treats England and Scotland separately. The countries/regions of authors and co-authors and the number of their articles in each year of this period are shown in Table 4. Countries participating in 1, 2–3, 4–6, 7–9, 10–29 or even 30 and more articles are shown in Figure 7. The smallest group of three countries with 30 or more articles published the largest number of articles. This group also includes China, which is a country with a huge increase in scientific articles registered in world databases (Huang et al. 2020). Vice versa, the largest group of 20 countries published only 20 articles in 2014–2023.

PPS ranking in the WoS database. PPS's IF has been on an increasing trend since 2014. This has a positive effect on PPS ranking in both categories (PLANT SCIENCES, AGRONOMY), along with the growing overall number of journals in these categories, especially in AGRONOMY. The journal achieved very good results in 2018 when it moved from the third quartile (Q3) to the second quartile (Q2) in the AGRONOMY category. It was close to Q2 in the PLANT SCIENCE category in the same year but remained in Q3. In 2023, the journal moved into Q2 in both categories (Figures 8 and 9).

PPS in the SCOPUS database

PPS ranking in Scopus categories. The SCOPUS database provides specific metrics for determining the scientific impact of the journals it covers (SciVerse SCOPUS 2023; Scimago 2024). These metrics can be used to evaluate specific journals and measure publication activity by country (Kroftová 2022). Scimago Journal Rank (SJR) is one of its main impact metrics and attempts to quantify the scientific influence of the average article in an evaluated journal (Guerrero-Bote & Moya-

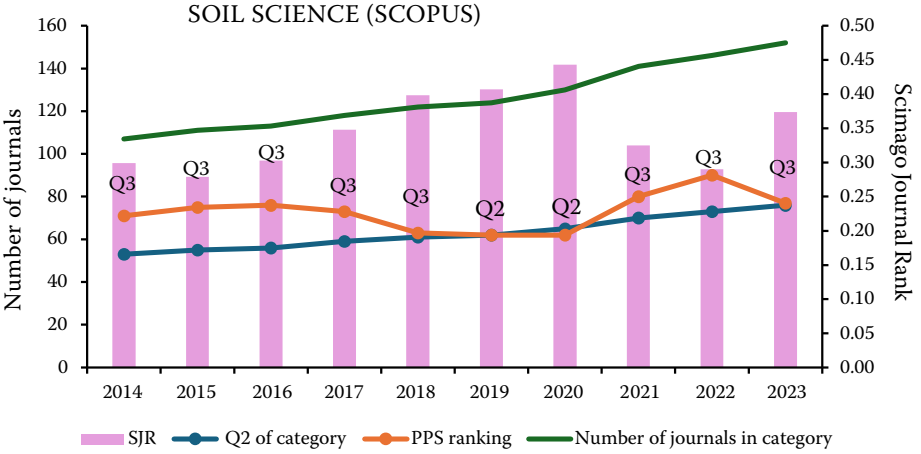

Figure 11. Development of Plant Protection Science (PPS) Scimago Journal Rank (SJR), the cut-off value of Q2, the total number of journals, and PPS ranking in SOIL SCIENCE category in 2014–2023

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Anegón 2012; Kroftová 2020). SJR values for PPS have been on an upward trend over the last decade. At the same time, the total number of journals in the categories AGRONOMY AND CROP SCIENCE and SOIL SCIENCE has increased, especially over the last three years. PPS improved its position in AGRONOMY AND CROP SCIENCE and moved from Q3 to Q2 in 2017–2020 and 2023. In the SOIL SCIENCE category, PPS was in Q2 only during 2019–2020 (Figures 10 and 11).

Citing and cited journals of PPS. Scimago Journal & Country Rank also provides data about the quality of journals citing PPS and those cited in PPS. In both cases, journals from SJR Q1 have the highest percentage (Figures 12 and 13).

Female authors in PPS

It is instructive to see how female authors contribute to the articles in PPS. Scimago Journal & Country Rank 2024 has provided this information retrospectively since 2007 (Figure 14). The proportion of women authors has been increasing between 2007 and 2023. The lowest proportion of women was in 2012 (23.53%), while the highest was in 2021 (46.47%).

International collaboration

The international collaboration accounts in PPS articles (Scimago Journal & Country Rank IT 2024) show articles created by researchers from several countries working together. Figure 15 shows the proportion of papers co-authored by researchers from more than one country (based on affiliation addresses). There is clear evidence that the number of such authors increased steadily during the period 2007–2023; this is also a general trend occurring across the biological and medical sciences (Gazni 2015; Tilak et al. 2015; Fontanarosa et al. 2017; US NLM 2020). This phenomenon also reflects the increasing complexity of published papers and the very diverse methodological approaches.

Comparison of Scopus metrics in 11 journals published by the Czech Academy of Agricultural Sciences (CAAS)

The best of the CAAS journals is Plant, Soil and Environment, with an SJR of 0.536, an H-index of 70, and a Q2 ranking in its category SOIL SCIENCE. PPS has an SJR of 0.374, an H-index of 29, a Q2 ranking in the AGRONOMY AND CROP SCIENCE category, and a Q3 in SOIL SCIENCE (Table 6). If a journal has different ratings in more than one category, the better or best quartile is always evaluated. Despite relatively high H-indices for the journals Czech Journal of Food Sciences (54) and Veterinární Medicína (58), both of them are in a Q3. Such rankings depend on the number and quality of other journals in the categories in which each journal is classified.

Because these 11 Czech journals represent specific fields of agriculture, it is possible to deduce the relative participation of women in various research areas. Women are more successful as authors than men in Czech Journal of Food Sciences and Agricultural Economics, where their share is more than half (55% and 50.36%, respectively). In other journals, over half of the authors are male, with especially high percentages in fields such as agricultural technology and forestry (78.57% in the journal Research in Agricultural Engineering and 77.84% in the Journal of Forest Science).

Similar comparisons of CAAS journals were made ten years ago (Lebeda et al. 2014). Still, at that time,

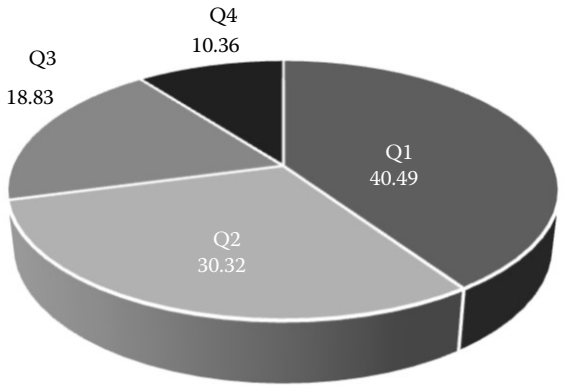

Figure 12. Scimago Journal Rank quartiles of journals citing Plant Protection Science

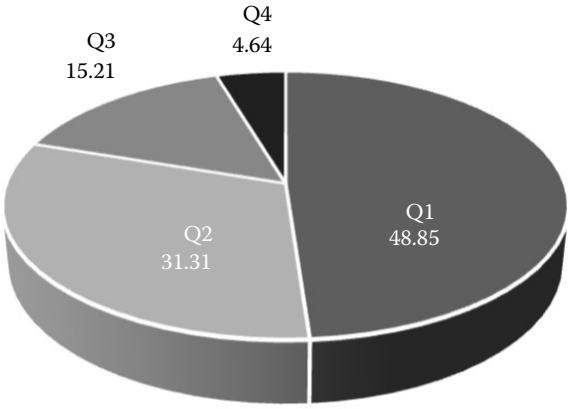

Figure 13. Scimago Journal Rank quartiles of journals cited in Plant Protection Science

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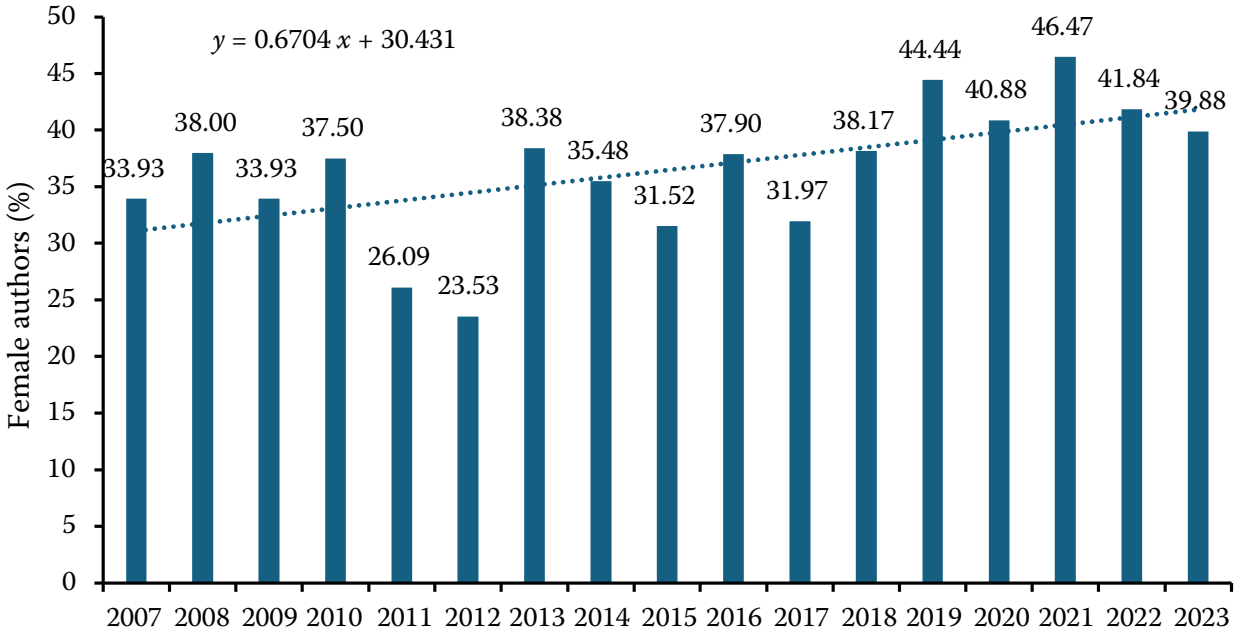

Figure 14. Development of the female authors' percentage in Plant Protection Science articles 2007–2023

the category quartiles and share of female authors in publications were not yet monitored in Scimago Journal & Country Rank.

CHARTING THE FUTURE DEVELOPMENT OF PPS

The following context should be considered in terms of possible visions for the further development of PPS. After the leave of Dr. Marcela Braunová as editor, within a short time (2019–2022), PPS employed five editors, a situation that has hopefully become more stable. To maintain the dynamics of the gradual development of PPS, one must also be mindful of the current situation at PPS's publishing house (CAAS), which seriously constrains further quantitative growth (e.g., expanding the number of pages or switching to a monthly format). It is therefore necessary to emphasise qualitative growth in terms of the scientific focus, importance and attractiveness of the articles in light of the current and future readership. It will also be important to periodically evaluate the relative proportions of review papers, original papers, short communications, and other article types while maintaining a solid foundation of original papers.

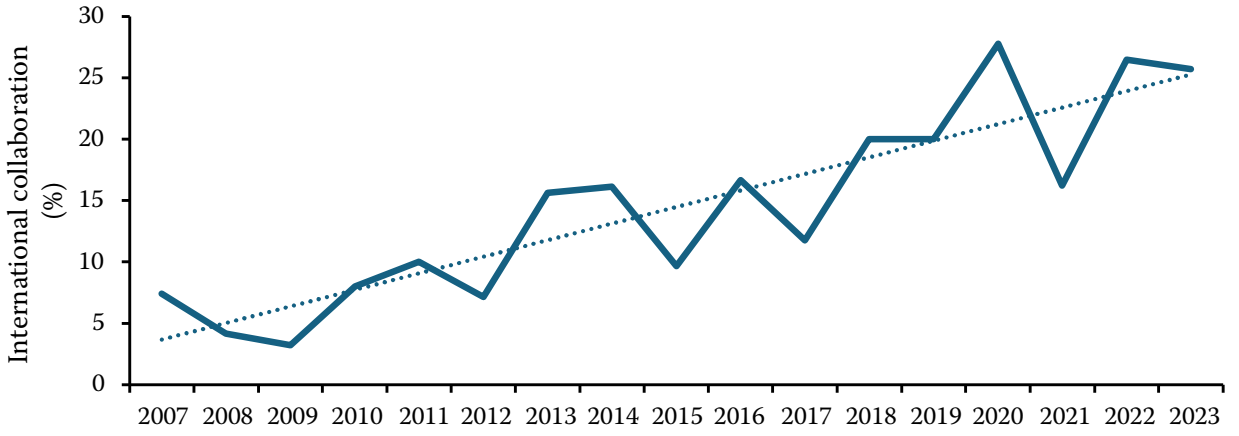

Figure 15. International collaboration in Plant Protection Science 2007–2023

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Table 6. Journals published by Czech Academy of Agricultural Sciences indexed in SCOPUS by Scimago Journal Rank 2023, H-index and category quartiles (August 2024)

	SJR 2023	Scopus H-index	Quartile of Cat 1	Quartile of Cat 2	Total docs. 2023	Total docs. (3 years)	Total refs.	Total cites (3 years)	Cites/doc. (2 years)	Ref./doc. 2023	Female author (%)
Plant, Soil and Environment	0.536	70	Q2	–	63	233	2 523	662	2.77	40.05	36.36
Soil and Water Research	0.496	31	Q2	Q2	24	78	1 190	187	2.00	49.58	25.89
Agricultural Economics	0.435	33	Q2	Q2	48	157	1 688	399	2.15	35.17	50.36
Plant Protection Science	0.374	29	Q2	Q3	35	107	1 470	201	1.93	42.00	39.88
Czech Journal of Animal Science	0.371	45	Q2	–	45	153	1 617	226	1.49	35.93	35.51
Journal of Forest Science	0.313	34	Q2	Q3	47	152	2 344	226	1.43	49.87	22.16
Horticultural Science	0.303	30	Q2	–	27	75	1 146	106	1.14	72.44	46.85
Czech Journal of Food Sciences	0.349	54	Q3	–	49	165	1 923	284	1.63	39.24	55.00
Veterinární medicína	0.245	58	Q3	–	57	212	1 990	149	0.69	34.91	41.97
Czech Journal of Genetics and Plant Breeding	0.238	23	Q3	Q4	24	62	962	63	1.15	40.08	44.88
Research in Agricultural Engineering	0.207	25	Q3	Q4	24	68	649	72	0.92	27.04	21.43

SJR Scimago Journal Ranking indicator – measure of journal's impact, influence or prestige. It expresses the average number of weighted citations received in the selected year by the documents published in the journal in the three previous years; SCOPUS H index – journal's number of articles (*h*) that have received at least *h* citations over the whole period; Cat 1 – category of the journal with better evaluation; Cat 2 – category of the journal with the same or worse evaluation; Total docs. (2023) – journal's published articles in 2023. All types of documents are considered; Total docs. (3 years) – journal's published articles in 2021, 2022 and 2023. All types of documents are considered; Total refs. – number of references included in the journal's published articles in 2023; Total cites (3 years) – cumulative number of citations per article published for the years 2021, 2022 and 2023; Cites/doc. (2 years) – average citation per document in a 2-year period. This metric is widely used as an impact index; Ref./doc. – average number of references per document in 2012

The effort to "attract" authors from the most scientifically advanced countries should be viewed as a big challenge, which can increase the prestige of PPS and interest in it. Another difficult task is to improve the positive perceptions of this journal, especially in the Czech Republic, so that it is not considered something of "inferior value", which unfortunately can occur among certain key representatives of the state and, occasionally, even among members of the academic and scientific community within the Czech Republic, perhaps ironic for something that would be termed an "intellectual and cultural treasure" in our broader society. It should not only be properly cared for and valued but also encouraged to further its development and promotion, and clearly not thoughtlessly labelled or defamed (or even banned from publishing in it) because it has not yet attained such high bibliometric parameters as some other competing journals (in recent years, mainly assessed based on the categorisation of journals into so-called Q groups). The fact is that with an IF value (Impact Factor) 2023 = 1.7, PPS in the Web of Science database attained in two key categories (Agronomy and Plant Sciences), Q2 (data from the end of June 2024). Furthermore, PPS's SJR value (Scientific Journal Rankings) 2023 = 0.37 reached Q2 in one of the two categories in the SCOPUS database (data from the end of April 2024). Sustaining such rankings and sharing that information widely with prospective authors and administrators are among the biggest challenges for PPS and all other journals published by CAAS.

The fact is that we have much to be proud of today. Still, we also must honour the legacy of the work of our predecessors, of the "founding fathers" (Figure 1), who started more than a hundred years ago and, despite all historical, political and other difficulties and vicissitudes, have given us this evolving journal that has survived to the present day, still vital with good prospects for the future. There is no organisation in the world quite like CAAS, which would commit to publishing such an extensive and

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compact series of scientific journals focused on agricultural, environmental and related sciences over the long term. This is well worth remembering as CAAS now celebrates the 100th anniversary of its founding in 1924 (Zámečník 2023).

CONCLUSIONS

The last critical evaluation of this journal (Lebeda et al. 2014) concluded by citing the words of prof. R.D. Martyn regarding recent and future developments in plant pathology and plant protection (Martyn 2009), as well as with some thoughts and expectations about how PPS could become an increasingly vital and integral part of the international plant pathology and plant protection community. These ideas were summarised in eight basic points (Lebeda et al. 2014). Ten years later, we can look back and conclude that: *(i)* There has been a more-or-less continual improvement in the composition of the PPS editorial board by adding foreign members and in improving the quality of editorial management; *(ii)* Progress has been made to strengthen the efficiency and quality of the reviewing process; *(iii)* Publication processes have been accelerated, shortening turnaround times; *(iv)* There has been a gradual expansion in international scope, linked with increasing numbers of contributions from countries around the globe; *(v)* The numbers of articles and volume pages have increased substantially; *(vi)* Nearly every volume includes a comprehensive, high-quality literature review; *(vii)* PPS's recent financial status is more independent and stable; and *(viii)* Rules for the payment of page charges have been clarified and stabilised, reflected in editorial strategies and policies that are now implemented. The journal is fresh, vital, vibrant, and ready for future growth. PPS can be considered an integral part of the world's scientific community in plant pathology and plant protection sciences and is open to all researchers worldwide for the publication and dissemination of high-quality research papers.

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