Data Publishing Policies of English-language Agricultural Science and Technology Journals: A Comparative Analysis and Implications

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Abstract

Abstract

Purpose: To comprehensively analyze the similarities and differences in data publishing policies between domestic and international English-language agricultural science and technology journals, identify the deficiencies in the data publishing policies of China' s English-language agricultural science and technology journals, and propose recommendations for formulating data publishing policies for these journals.

Method: Web-based investigation, policy text analysis, and case comparison methods were employed to examine the characteristics of data publishing policies in domestic and international English-language agricultural science and technology journals.

Result: Most international English-language agricultural science and technology journals implement strong data publishing policies with detailed regulations on data submission standards and data review; both domestic and international English-language agricultural science and technology journals need to strengthen data copyright provisions, and China' s English-language agricultural science and technology journals must further refine the details of their data publishing policies.

Conclusion: China' s English-language agricultural science and technology journals should enhance awareness of data publishing, learn from the experience of foreign agricultural journals in formulating data publishing policies, improve policy details, and further promote open sharing of data.

Full Text

Systematic Analysis and Enlightenment of Data Publication Policies for English-language Agricultural Science Journals at Home and Abroad

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Abstract

[**Purpose**] This study provides a comprehensive analysis of the similarities and differences in data publication policies between domestic and international English-language agricultural science journals, identifies deficiencies in China' s English-language agricultural journals, and proposes recommendations for policy development. [**Methods**] Using web-based investigation, policy text analysis, and comparative case studies, we examined the characteristics of data publication policies across representative journals. [**Findings**] Most international English-language agricultural journals implement strong data publication policies with detailed provisions on data submission standards and review processes. Both domestic and international journals need to strengthen data copyright management, while Chinese English-language agricultural journals must further refine policy details. [**Conclusions**] China' s English-language agricultural science journals should enhance awareness of data publication, learn from international policy development experiences, and improve policy specifics to promote open data sharing.

Keywords: open science; English agricultural journals; data publication

Data serves as crucial supporting material in scientific research, providing the foundation for researchers to trace research processes, verify findings, and advance subsequent studies. In the era of big data and open science, scientific data has become a strategic resource with independent identification, attribute description, monitoring mechanisms, and traceability workflows [1]. In recent years, international associations and major publishers have encouraged the implementation of data publication policies to promote the release of research datasets through mechanisms that ensure public discoverability, accessibility, evaluation, and application [2]. The ability to submit complete, verifiable data has become a prerequisite for academic publication. Against this backdrop,

standardized and comprehensive data publication policies have become essential components of scientific journal publishing workflows, while robust data publication systems have emerged as important indicators for evaluating journal quality and impact. Such systems enhance research transparency, ensure reproducibility and verifiability, safeguard research integrity, and promote scientific innovation.

International academia has long studied journal data publication policies, with mature research outcomes dating back to the 1980s. Fienberg argued that research data sharing could validate findings and drive innovation [3]. Wicherts analyzed 1,148 statistical data points from 49 papers in two psychology journals, concluding that authors were reluctant to share data when research data were inappropriate, thus advocating for mandatory data archiving policies to ensure scientific rigor and maintain research integrity [4]. Piwowar used bibliometric methods to examine data sharing frequency and influencing factors in 11,603 gene expression microarray papers, finding that authors with prior sharing experience or those publishing in open-access journals with comprehensive data policies were more willing to share data, though overall sharing levels in this field remained low [5]. Many international journals now require data submission; for instance, *The Lancet* mandates that authors of empirical studies submit data, protocols, and computer code to online archives, while *Nature* and *Science* also have requirements for data and code disclosure [6]. China started later in this area. Ma Jianling discussed integrated publication of academic papers and scientific data [7]. Liu Can analyzed characteristics, article volumes, and citation metrics of representative data journals to explore their influence and prospects [8]. In specific disciplines, Liu Ying examined data publication policies in international medical journals from perspectives of data types, storage locations, and availability statements, identifying existing problems [9]. Kong Lihua investigated data policy implementation among journals selected for China's Excellence Action Plan for Science and Technology Journals and proposed future research directions [10]. Li Li analyzed and compared data publication policies of foreign chemistry journals from the American Chemical Society and Royal Society of Chemistry, identifying policy trends [11]. Li Xinyue examined three models in life sciences—data repositories, data journals, and joint publication of data and papers—and offered improvement suggestions [12].

These studies demonstrate that many international journals have developed comprehensive data publication policies covering the entire process from submission and review to sharing, achieving integrated publication of papers and data. In recent years, China has recognized the value of scientific data. In 2018, the State Council issued the *Administrative Measures for Scientific Data*, emphasizing the need to "properly handle scientific data collection, submission, preservation, sharing, utilization, confidentiality, and security," and encouraging authorities and institutions to promote data publication and support researchers in publishing high-quality, clearly-owned, and valuable scientific data [13]. In 2019, the Chinese Academy of Sciences released its *Trial Measures for Scientific Data Management and Open Sharing*, stating that "researchers should submit

scientific data to management institutions, and CAS-affiliated journals should establish pre-publication data submission mechanisms with timely open sharing" [14]. However, preliminary investigations reveal that Chinese researchers and journals have not yet reached consensus on data sharing, few journals have comprehensive data publication policies, and data publication has not been implemented at scale. Research specifically targeting data publication policies of China' s English-language agricultural science journals remains scarce. Establishing standardized data publication policies for these journals is crucial for enhancing scientific rigor, promoting agricultural innovation, and safeguarding national agricultural technology information security. Therefore, this study employs web-based investigation, policy text analysis, and case comparison to summarize similarities and differences in policy strength, submission standards, review processes, and rights protection between representative domestic and international English-language agricultural journals, analyze deficiencies in Chinese policies, and propose recommendations to inform policy development aligned with national strategic needs, disciplinary characteristics, and journal positioning.

The 2023 Journal Citation Report (JCR), released in London on June 28, 2023, evaluated 21,500 high-quality academic journals across over 250 disciplines. Through website investigation, we reviewed data publication policies of the top 50 English-language agricultural science journals by impact factor in the JCR agriculture category and its agronomy and soil science subcategories. From these, we selected ten journals with relatively comprehensive policies covering submission standards, review processes, and rights protection: *Nature Food*, *Biochar*, *Soil Biology & Biochemistry*, *Soil*, *Chemical and Biological Technologies in Agriculture*, *Crop Journal*, *Journal of Soil and Water Conservation*, *Journal of Integrative Agriculture*, *Rice Science*, and *Global Change Biology Bioenergy*. Among these, *Biochar*, *Crop Journal*, *Rice Science*, and *Journal of Integrative Agriculture* are Chinese journals, while the rest are international.

1.2 Analysis Methods

Data publication policy is a systematic endeavor requiring gradual refinement to address specific implementation issues and establish unified standards based on disciplinary characteristics to promote data sharing and utilization. Previous research has constructed a framework examining data submission standards, review and storage, and rights protection [15]. Building on this framework, this study employs web-based investigation, policy text analysis, and comparative case studies to analyze the ten selected journals' policies regarding policy strength, submission standards, review processes, and rights protection by examining their "Author Guidelines" and "About Authors" sections.

2.1 Publishing Institutions and Data Policy Strength

International scholar Sturges defined policy strength by categorizing journal data publication policies as either "strong" or "weak" [16]. Strong policies

mandate data sharing, specify submission standards, have comprehensive review criteria, require availability statements, and include provisions for data citation, licensing, privacy, and ethics, making data submission a prerequisite for publication. Weak policies merely encourage sharing without mandatory requirements or impact on the publication process. Research indicates that different institutions—including professional associations, editorial boards, and publishers—significantly influence policy development [17]. Among the journals investigated, some uniformly comply with their society/publisher' s policies, while others adapt requirements based on their circumstances. Table 1 presents the publishing institutions and policy strength.

As shown in Table 1, most international agricultural journals implement strong data policies, requiring authors to submit research data as supplementary materials during manuscript submission for peer review alongside the paper. Chinese English-language agricultural journals such as *Crop Journal* adopt weak policies that encourage but do not mandate data submission. There are also variations in policy content. For example, *Soil* has not yet specified data privacy and ethics guidelines, and most domestic and international journals have not clarified copyright issues.

2.2 Data Storage Location and Types

Many international agricultural journals provide detailed regulations on data storage locations and types, as shown in Table 2 . These journals follow FAIR principles, utilizing general and disciplinary databases for storage. *Nature Food* requires specific dataset types to be submitted to recognized public databases —for example, protein sequences to UniProt, DNA and RNA data to GenBank [18]. *Soil Biology & Biochemistry* has distinctive practices, supporting data visualization and encouraging data to be published as images, audio, or applications as supplementary materials with concise titles to enhance dissemination. Data papers represent an emerging format for promoting data sharing, with some international agricultural journals already standardizing submission requirements. *Journal of Soil and Water Conservation*, for instance, defines data papers as 3,000-7,000-word articles including an abstract (~250 words), introduction (data sources, funding, dataset links), methodology (dataset structure, collection methods, experimental protocols), dataset characteristics (quality standards, statistical methods, usage scenarios, availability statement), and a conclusion on scientific value and future applications [20].

Although Chinese English-language agricultural journals advocate data submission, they lack explicit submission standards and clear requirements for storage locations and types, instead referring to publisher regulations or allowing case-by-case negotiation with editorial offices during the publication process.

2.3 Data Review

Scientific data quality encompasses content quality, format quality, accessibility quality, and utility quality, with review being a critical quality control method. Many international publishers incorporate data review into their policies and consider data quality a key publication criterion [21]. Review standards should specify technical and quality assessments, evaluating dataset completeness, collection standards, and software used [22]. The Nature Publishing Group requires data review committees to include a data standards expert, while the Dryad repository explicitly assists journals in rigorously reviewing data authenticity [23]. Figure 3 [Figure 3: see original paper] illustrates the data review indicators for the investigated journals.

International English-language agricultural journals generally have comprehensive review standards. *Journal of Soil and Water Conservation*, for example, specifies review criteria: whether datasets are unpublished, relevance to the journal' s scope, and scientific value. It also details review content, including data completeness, unit consistency, adequacy of collection method descriptions, documentation of method changes, data purpose and accuracy, and accessibility [20]. Beyond reviewing data quality, *Nature Food* recommends submitting code, algorithms, and software for peer review, releasing them during the review process and archiving them afterward [18]. In contrast, Chinese English-language agricultural journals merely call on authors to ensure data scientific validity and take responsibility for results, lacking specific review standards and content, which compromises data authenticity and utility and may lead to research misconduct.

2.4 Data Rights and Interests

Literature review reveals that scholars have analyzed international open-access journal data rights policies from perspectives of copyright ownership, data use and licensing, and data ethics and privacy [15,16]. This study similarly examines these three aspects:

2.4.1 Data Use and Licensing (1) Data Availability Statements. In the era of data-intensive scientific discovery, data sharing requirements have intensified. Data Availability Statements (DAS) clarify whether authors share data, storage locations, and access conditions, representing a crucial policy component. International journals have led in DAS adoption; Springer Nature introduced DAS to five journals including *Nature Neuroscience* in 2016 [1] and implemented a unified data policy across all journals and books in 2023, mandating DAS to enhance transparency and reproducibility [24]. The investigated *Biochar* journal has comprehensive DAS policies with examples: datasets generated/analyzed are available in [repository name] at [URL]; datasets are available from corresponding authors upon reasonable request; datasets are not publicly available due to [reason] but available from authors upon reasonable request; data sharing not applicable. While domestic and international

agricultural journals support DAS submission, few provide complete examples, necessitating strengthened standardization.

(2) Data Citation and Licensing. Standardized citation practices help the public recognize data value, assist authors in identifying and locating data, promote reuse, enable verification, and track dataset impact. Many international publishers require in-text citation of datasets, code, and methods with references listed. *Cell* and *Science* emphasize using DOIs or other persistent identifiers [26]. *Soil*, published by the European Geosciences Union, mandates citation following the Joint Declaration of Data Citation Principles, including creators, title, publisher/repository, identifier, and publication year [27]. China' s *Crop Journal* requires data citations in references with author names, dataset title, repository, version, year, and unique identifier [28]. Licensing primarily uses four Creative Commons forms: CC0, CC-BY, CC-BY-NC, and CC-BY-NC-ND. BMC and PLoS journals use CC-BY licenses to protect author rights while enabling commercial use [29]. *Nature Food* specifies licensing conditions by data type: data not publicly available due to privacy, ethical, or legal reasons must accurately describe non-disclosure justifications; restricted-use data requires agreements clarifying conditions; third-party data must undergo peer review with provider identity and collection methods stated in DAS; administrative data use must comply with local legal frameworks [18].

2.4.2 Data Copyright Copyright issues significantly impact data sharing, as many researchers hesitate to share data due to unclear ownership, hindering policy implementation. International academic publishers lack unified copyright regulations; for example, PLoS journals have ambiguous data copyright policies [29]. The investigated domestic and international English-language agricultural journals have not explicitly addressed copyright, making it essential to develop unified industry standards, raise awareness among publishers and researchers, and clarify ownership to prevent disputes and reduce sharing barriers.

2.4.3 Data Ethics and Privacy Data ethics and privacy protection are vital policy components for curbing misconduct, safeguarding integrity, and fostering a healthy research ecosystem. *Chemical and Biological Technologies in Agriculture* requires authors to respect participant privacy for clinical datasets, obtain consent before publication, ensure confidentiality, and consult local ethics committees if participants are not anonymized [30]. *Nature Food* mandates submission of human subject phenotype-genotype data to public repositories with controlled access, specifies usage permissions for sensitive data (electronic health records, vulnerable populations) with justifications, and requires compliance with ICMJE clinical trial data sharing standards, including prospective trial registration on WHO' s International Clinical Trials Registry Platform [18]. Chinese English-language agricultural journals lack adequate provisions in this area.

3. Shortcomings in Data Publication Policies of China' s English-language Agricultural Science Journals

(1) **Policy Strength:** Most international agricultural journals enforce strong data policies with robust guidance. In contrast, Chinese journals like *Crop Journal* and *Rice Science* merely encourage submission, with data publication not yet normalized in editorial workflows, providing weak guidance and services to authors.

(2) **Submission Standards:** International journals have comprehensive policies covering the entire process from submission and review to citation and rights protection, with efficient integration between publishers and established databases enabling linked publication of papers and data that ensures content and format quality. Chinese journals lack detailed submission standards with vague provisions and lack authoritative, industry-recognized data repositories.

(3) **Data Review:** International journals and repositories explicitly require data to undergo peer review alongside papers, with clear standards and dedicated data reviewers. Chinese journals only call on authors to ensure data validity without specific review requirements, compromising data authenticity and utility and risking misconduct.

(4) **Data Rights:** First, few Chinese journals provide complete DAS examples, requiring enhanced standardization to ensure proper data use. Second, although citation formats are specified, inadequate data description and availability hinder citation; alignment with international standards like FORCE11 principles or Panton Principles is needed to clarify citation formats and conditions for different data types. Third, both domestic and international journals need progress on copyright, requiring greater awareness and standardized protection clauses to clarify ownership and reduce sharing barriers. Finally, Chinese journals lack specific privacy and ethics requirements, providing insufficient guidance and risking misconduct or copyright issues that could damage journal reputations.

4.1 Strengthen Top-level Design and Develop Comprehensive Journal Data Publication Policies

The analysis reveals that Chinese English-language agricultural journals adopt encouragement-based approaches without normalized data publication workflows, limiting author compliance and data sharing. Building on the *Administrative Measures for Scientific Data*, relevant ministries, regional science and technology management departments, funding agencies, and journal supervisory units should develop mandatory agricultural journal data publication policies that organize, identify, describe, submit, publish, and share data through reliable mechanisms [2]. Additionally, laws and regulations on privacy, ethics, and copyright should be clarified, potentially following the Committee on Publication Ethics flowchart for ethical concerns in data publication [31] to review

intellectual property and privacy issues, reduce disputes, legally protect data owners' rights, enhance researcher motivation, and standardize publication processes.

4.2 Increase Infrastructure Investment and Develop General and Specialized Agricultural Data Repositories and Journals

Data storage is crucial for preservation and utilization. China must intensify infrastructure development to cultivate general and specialized agricultural data repositories with disciplinary characteristics. Recent support for scientific data centers has established renowned agricultural databases like the National Agricultural Science Data Center and National Crop Germplasm Resources Bank, which implement FAIR principles, adopt international standards for citation, and support data publication [33]. Recommendations include: (1) local science and technology management departments and journal supervisory units should establish regional/institutional repositories integrated with digital publishing platforms to encourage sharing and develop tiered, FAIR-compliant general agricultural repositories; (2) research organizations and publishing associations should create specialized or bilingual repositories [34]; (3) regional journal management departments should launch agricultural data journals and develop clustered platforms linking repositories and journals; (4) enhance international cooperation with foreign data centers or publishing groups to establish secure bilateral data flow mechanisms addressing safety and privacy.

4.3 Establish Service Awareness and Develop Characteristic Data Publication Frameworks for Agricultural Journals

As central actors in data publication, editorial offices must adopt service-oriented approaches and establish frameworks covering submission, review, citation, and evaluation to guide authors. (1) **Submission:** Guide authors through optimized processes, ensure familiarity with regulations, and provide lists of certified databases. (2) **Review:** Specify standards and content, appoint dedicated data reviewers, and involve third-party agencies when necessary. Standardize review processes, use technical tools to enhance transparency, collect feedback, and provide material incentives to reviewers. Incorporate review results as key paper quality indicators. (3) **Citation and Licensing:** Establish unified citation standards, determine discipline-specific additional elements (storage location, version), and use DAS to clarify licensing terms and improve utility. (4) **Evaluation:** Integrate data evaluation into research assessment systems with defined indicators, and include data papers in evaluation frameworks. (5) **Columns:** Establish data publication columns to explore models.

In October 2022, the *State of Open Data Report 2022* noted that "researchers are increasingly inclined to share research data due to visibility and citation impact, and also value policies and training information on data sharing and reuse" [35]. This demonstrates that journal policy orientation, implementation

strength, detailed rules, and training directly influence researcher behavior. As primary academic exchange platforms, science and technology journals have a responsibility to advocate for and oversee data publication [36]. Chinese English-language agricultural journals should: (1) strengthen implementation with comprehensive, full-process policies and services to guide compliant research; (2) provide technical support by integrating data submission into publication workflows, optimizing author experience, and using tools like Code Ocean (recently extended by Springer Nature) to track review and sharing [37]; (3) educate researchers to understand policy terms, comply with copyright, privacy, and ethics norms, distinguish policy differences across journals, and engage actively with editorial offices while understanding appeal processes; (4) promote policy awareness, sharing, and reuse through training to ensure researchers understand policy benefits.

This study analyzed data publication policies of ten English-language agricultural journals including *Nature Food*, *Biochar*, and *Soil Biology & Biochemistry*. Findings show that international journals have well-developed policies on submission, review, citation, privacy, and ethics, though all journals need stronger copyright provisions. Limitations include the small sample size and narrow research scope; future studies should expand to more journals, broader disciplines, and include Chinese-language agricultural journals.

Agricultural research data is fundamental to scientific inquiry, validation, and innovation. As key platforms for disseminating agricultural research, China' s agricultural science journals must serve as advocates and drivers of data publication, strengthen international cooperation, develop pragmatic policies, embrace open science, and play a broader, more enduring role in recording achievements, disseminating knowledge, and maintaining a healthy research ecosystem.

Author Contributions

WANG Huiyuan: Conceptualized the study, supervised data collection, and wrote and revised the manuscript; HUANG Dongjie, ZHAO Yunlong, OU Licheng: Collected, organized, and analyzed data and revised the manuscript.

References

[1] Lei Xue. Current Status and Recommendations for Standardized Application of Data Availability Statements in Scientific and Technical Journals[J]. Acta Editologica, 2021, 33(3):

[2] Kong Lihua, Xi Yan, Zhang Xiaolin. Trends, Mechanisms, and Challenges of Data Publication[J]. Bulletin of National Natural Science Foundation of China, 2019, 33(3):

[3] Fienberg S E,Martin M E,Straf M L.Sharing research data[M].Washington,D.C.:National Academy Press,1985:2.

[4] Wicherts J M, Bakker M,Molenaar, D.Willingness to Share Research Data Is Related to the Strength of the Evidence and the Quality of Reporting of

Statistical Results[J].PLOS ONE,2011,6(11):e26828.

[5] Piwowar, HA.Who Shares? Who Doesn' t? Factors Associated with Openly Archiving Raw Research Data[J].PLOS ONE,2011,6(7):e18657.

[6] Chen Quanping. Data Policies of Academic Journals and Related Research[J]. Library and Information, 2015(5): 59-15.

[7] Ma Jianling, Cao Yuezhen, Wang Sili, et al. Research on Integrated Publication of Academic Papers and Scientific Data[J]. Information and Documentation Services, 2014(2):

[8] Liu Can, Wang Ling, Ren Shengli. Analysis of Current Status and Development Trends of Data Journals[J]. Acta Editologica, 2018, 30(4): 344-349.

[9] Liu Ying, Wang Xuan. Analysis of Data Publication Policies of International Academic Journals in the Medical Field[J]. Chinese Journal of Scientific and Technical Periodicals, 2017, 28(8):

[10] Kong Lihua, Chen Shushu, Xi Yan, et al. Investigation and Analysis of Data Policy Implementation Among Journals Selected for China' s Excellence Action Plan for Science and Technology Journals[J]. China Scientific Data (Chinese and English Online Edition), 2023, 8(1): 224-234.

[11] Li Li, Wang Zhaohui. Analysis and Comparison of Research Data Publication Policies of Foreign Journals: A Case Study of Chemistry Journals[J]. Information Research, 2019(9): 54-57.

[12] Li Xinyue, Qing Xiuling, Han Lu, et al. Research on Data Publication Practices in the Life Sciences Field[J]. Chinese Journal of Scientific and Technical Periodicals, 2021, 32(7): 935-943.

[13] State Council. Administrative Measures for Scientific Data[EB/OL]. (2018-04-02)[2023-08-01] https://www.gov.cn/gongbao/content/2018/content_{5283177}.htm.

[14] Chinese Academy of Sciences. Trial Measures for Scientific Data Management and Open Sharing of the Chinese Academy of Sciences[EB/OL]. (2019-02-21)[2023-08-01] https://www.cas.cn/sygz/201902/t20190221_{4679910}.shtml.

[15] Han Mingyang, Jiang Xin. Investigation and Analysis of Data Policies of International Open Access Journals: A Case Study of BioMed Central Journals[J]. Journal of Intelligence, 2017, 36(8): 161-165.

[16] Sturges P,Bamkin M,Anders stakeholder-driven model for journal policies[J].Journal of Science and Technology,2015,66(12):2445-2455.

[17] Qin Changjiang, Wu Sijie, Wang Dandan. Research on Research Data Policies of Social Science Academic Journals: Based on Analysis of Representative Journals from Six Foreign Disciplines[J]. Chinese Journal of Scientific and Technical Periodicals, 2022, 33(3): 338-344.

[18] Nature food.Submission Guidelines[EB/OL].[2023-08-01]https://www.nature.com/natfood/articles?type=r and-views.

[19] Soil Biology and Biochemistry.Guide for Authors[EB/OL].[2023-08-01]https://www.sciencedirect.com/journal/soil-biology-and-biochemistry.

[20] Journal of Soil and Water Conservation.Information for Authors.[EB/OL].[2023-08-01] https://www.jswconline.org/content/information-authors.

[21] Lei Xue. Application Practice and Promotion Recommendations of FAIR Principles in Data Publication of Scientific and Technical Journals[J]. Chinese Journal of Scientific and Technical Periodicals, 2022, 33(8): 1075-1080.

[22] Cui Yan. Research on Publisher Policies in Scientific Data Open Sharing[J]. Knowledge Management Forum, 2016, 1(3): 182-191.

[23] Lei Qiuyu, Ma Jianling. Review of Research on Data Publication Policies of Academic Journals: A Case Study of Journals in Evolutionary Biology in JCR[J]. Library Theory and Practice, 2016(1): 30-34.

[24] Springer Nature Group. All Journals and Books Under the Group Implement a Unified Data Policy[EB/OL]. (2023-03-23)[2023-08-01] https://mp.weixin.qq.com/s/B5EIpaPR7ja0bBn

[25] Biochar.Submission Guidelines[EB/OL].[2023-08-01]https://www.springer.com/journal/427

[26] Cheng Ming, Pan Yuntao, Ma Zheng, et al. Research on Data Policies of Domestic and Foreign Academic Journal Publishing[J]. Science-Technology and Publication, 2021(4):

[27] Soil.Submission Policies[EB/OL].[2023-08-01]https://www.soil-journal.net/policies/data_{policy}.html.

[28] Crop Journal.Guide for Authors[EB/OL].[2023-08-01]https://www.sciencedirect.com/journal/the-crop-journal.

[29] Wu Rong, Gu Liping, Liu Jingjing. Investigation and Analysis of Data Policies of Foreign Academic Journals[J]. Library and Information Service, 2015, 59(7): 99-105.

[30] Chemical and Biological Technologies in Agriculture.Submission Guidelines[EB/OL].[2023-08-01]https://chembioagro.springeropen.com/.

[31] Committee on Publication Ethics.New flowcharts: ethical concerns in data publication [EB/OL].(2023-06-26)[2023-08-01]https://publicationethics.org/news/ethical-concerns-data-publication.

[32] State Council. Ministry of Science and Technology and Ministry of Finance Release List of Optimized and Adjusted National Science and Technology Resource Sharing Service Platforms[EB/OL]. (2019-06-11)[2023-08-01] https://www.gov.cn/xinwen/2019-06/11/content_{5399105}.htm.

[33] Li Jianhui, Zhou Yuanchun, Hu Lianglin, et al. Construction and Service of Scientific Data Cloud of the Chinese Academy of Sciences[J]. Big Data Research, 2016, 2(6):

[34] Xu Jie, Tang Wenhui, Xia Xinyue. Analysis of Current Status of Data Publication for Practice and Discussion of Countermeasures[J]. Chinese Journal

of Scientific and Technical Periodicals, 2020, 31(11): 1331-1337.

[35] Digital Science.The State of Open Data Report 2022:Researchers need more support to assist with open data mandates[EB/OL]. (2022-10-13) [2023-08-01]https://www.digital-science.com/news/state-of-open-data-report-2022/.

[36] Fu Tianzhen, Chen Miaozhen. Analysis and Recommendations on Data Publication Policies of Chinese Academic Journals[J]. China Publishing Journal, 2014(23): 31-34.

[37] Springer Nature Group. Springer Nature Extends Partnership with Code Ocean to Help Authors Better Share Code and Data[EB/OL]. (2022-11-23)[2023-08-01] https://mp.weixin.qq.com/s/iown8buazhfnAdI0JCOI2

Note: Figure translations are in progress. See original paper for figures.