Journal of Agrometeorology

ISSN : 0972-1665 (print), 2583-2980 (online)
Vol. No. 25 (1) : 03 - 09 (March- 2023)
DOI : https://doi.org/10.54386/jam.v25i1.2017
https://journal.agrimetassociation.org/index.php/jam

Invited Articles (Silver Jublee Publication)

Evaluation of research articles published in the Journal of Agrometeorology (1999-2022)

VYAS PANDEY

President, Association of Agrometeorologists, Anand Agricultural University, Anand 388110, Gujarat, India
Email: vyask.pandey@gmail.com

ABSTRACT

This article evaluates the research papers published in the Journal of Agrometeorology which started in 1999 as a six-monthly publication appearing in June and December and become a quarterly publication appearing in March, June, September and December in 2017. Initially, the journal was being printed on A5 size paper which was switched over to international A4 size glossy paper in 2008. In addition to the regular issues, the special issues of the journal were also brought out from the selected papers of seminars/symposia organized by the Association of Agrometeorologists from time to time. For evaluation, only the articles published in the regular issues of the journal were considered. The articles published in the special issues have been excluded in the analysis.

Out of 1353 articles published in the journal during the period of evaluation (1999–2022), 931 articles were published as research articles, including editorials, and the rest (422) were as short communications. Only 56 articles were contributed by the foreign authors. Among the centers, the highest contribution of articles was from New Delhi (113 articles) followed by Ludhiana (100), Anand (93), Hyderabad (72) and Hisar (51). State wise, the maximum number of articles were from Gujarat (166) followed by Punjab (159), New Delhi (113) and Maharashtra (98). Qualitatively, the number of articles on crop-weather relationship studies (206) were the highest followed by articles on agroclimatic analysis (172). The introduction of online system has not only increased the visibility of the journal globally, but also saved the time in processing the articles. The acceptance rate of articles is only 20 per cent. The impact factor of journal is increasing since 2008, and is expected to increase further due to higher citations enabled by the online system.

Keywords: Online system, impact factors, citations, crop-weather relationship, crop modelling, remote sensing

Before forming the Association of Agrometeorologists at Anand and bringing out the publication of the *Journal of Agrometeorology* in 1999, there were several rounds of talks and discussions with the stakeholder groups of the different agrometeorological societies in India that had been formed earlier but had since become defunct. Some experts expressed concerns during the early stages of its formation and publication that it would suffer the same fate as the others. Even some scientists underestimated the research work being done in India by the agrometeorological communities as being worth publishing. Despite the several hurdles, the publication of the *Journal of Agrometeorology* started with a meager amount collected from the 15 executive council members of the Association of Agrometeorologists, and the first issue was brought out in June 1999 on A5 size paper. With the dedicated work of the Secretary cum Managing editor, and Chief editor, the publication of the journal continued uninterrupted on schedule in June and December. The financial support provided by the Department of Science and Technology, New Delhi, in bringing out a Special Issue of the Journal in 2001 only on Land Surface Process Experiment (LASPEX-97) helped a lot to sustain the journal at the initial stage of its publication. This instilled trust in the agrometeorological community, and as a result, membership in the Association grew and spread across the discipline and the country.

The publication of the journal on A5-size paper continued until 2007 with the same format. The journal began printing on international standard A4 (210 x 297 mm) paper in 2008.The number of articles in each issue has steadily increased over time, from 15-16 in the beginning to 35-36 in 2016, as a result of which the publication frequency was increased in 2017 from half-yearly to quarterly (appearing in March, June, September, and December), with each issue accommodating 20-25 articles. In addition to the regular issues, special issues of the journal were published from time to time from selected papers presented at the Association's seminars and symposiums. The pdf copies of all the articles starting from 1999

Article info - DOI: *https://doi.org/10.54386/jam.v25i1.2017*
Received: 18 December 2022; Accepted: 03 January 2023; Published online : 17 February 2023

were made available regularly through our Association's website (Journal of Agrometeorology| Association of Agrometeorologists (agrimetassociation.org).

The special issues of the journal were brought out of the International Symposium of Agrometeorology and Food Security (INSAFS), held in February 2008 at CRIDA, Hyderabad wherein international papers were presented. The issues were published on standard A4 size glossy paper which broadened the Journal's horizons on the international stage, and as a result, international citations of papers began to result in an impact factor value. Since 2008, the journal and article citation data have been in the SCOPUS database and in Web of Science, which are being evaluated by various indexing agencies, and increasing impact factors have been reported. The University Grants Commission (UGC) also included the journal in its UGC-CARE list of approved journals. This has attracted authors from IITs, NITs, and other institutions in the country other than the agricultural institutions, in addition to the international authors.

Initially, two print copies of the manuscripts were being requested from the authors, one to be sent to the reviewer/editor and then the chief editor and the other for office records. This was also being followed at every stage of revision with a soft copy once the manuscript was accepted. Due to undue delay at different stages of review and revision, the dual system of submission of articles in print copy as well as through email was adopted, as most of the reviewers and editors were not computer savvy. Over the time, it was completely switched over to soft copies through email correspondence only. In order to bring out more transparency and fast processing of the articles, an online OJS/PKP platform is being used from January 2022 (Journal of Agrometeorology (agrimetassociation.org), a DOI is assigned to each article and also made it an open access journal. As the Journal enters into its 25th year of publication, it is high time to evaluate the progress made so far in terms of its quality and spread. While evaluating the publications, only the articles published in the regular issues of the journal were considered. The articles published in the special issues brought out of seminars and symposiums have been excluded from this analysis.

NATIONAL TO INTERNATIONAL STATUS

Initially, for the first two issues, an open letter was sent to all state agricultural universities and agricultural institutes in the country inviting articles for possible publication in the *Journal of Agrometeorology*. As membership of the Association of Agrometeorologists was mandatory for all the authors, the contributors were reluctant; hence, for the first two issues, the authors were mostly scientists or students from Gujarat, Andhra Pradesh, Maharashtra, Haryana, Karnataka, New Delhi, Uttar Pradesh, and Madhya Pradesh. Both the issues were brought out on time, and complementary copies of the journal were sent to all concerned universities and institutes, besides national libraries and the Indian National Scientific Documentation Centre (INSDOC) in New Delhi. This helped us to reach the scientists at all the agricultural institutions across the country. As previously stated, Volume 3, Numbers 1 & 2 of 2001 was a Special Issue on Land Surface Process Experiment, which boosted scientific confidence. As a result, in 2003, the first paper by an Indian author from Brazil was submitted to the journal and published as a short communication. By then, the journal had become popular not only among the agrometeorological community but had also attracted scientists across the discipline, like those in agronomy, entomology, pathology, and agricultural engineering, as well as scientists from neighboring countries. The first paper by foreign authors was received from Kuwait in 2006 (Salam and Mazroore, 2006a) and then from Bangladesh in 2007 (Ali *et al*., 2007).

In 2008, as stated earlier, in addition to the regular issues, a special issue of the journal was brought out of papers presented in the International Symposium on Agrometeorology and Food Security (INSAFS) held at CRIDA, Hyderabad. In these issues, papers from foreign countries and institutions like WMO (Sivakumar, 2008; Stigter, 2008), the USA (Boote *et al.*, 2008), Germany (Wegehenkel and Kersebaum, 2008; Kersebaum *et al*., 2008), Australia (Coughlan and Huda, 2008), China (Li *et al.*, 2008), and ICRISAT (Wani *et al*., 2008) attracted an international audience. As a result, we used to receive more than 25 research articles in a year submitted by the foreign authors, most of which were outright rejected because they were outside the domain of agrometeorology. Only 56 of the 1353 published articles were written by foreign authors. It may be noted that these numbers are only from the regular issues of the journal. Fig. 1 shows the number of papers contributed by main and/or co-authors from different countries. Authors from Bangladesh, China, and Vietnam have contributed the most (6 papers each), followed by Australia, the USA, and Ethiopia, each contributing 4 papers. Kuwait and Iran each contributed three papers, while Pakistan, Iraq, Poland, Brazil, and Switzerland each contributed two papers. Thus, in total 27 countries directly or indirectly contributed articles to the journal.

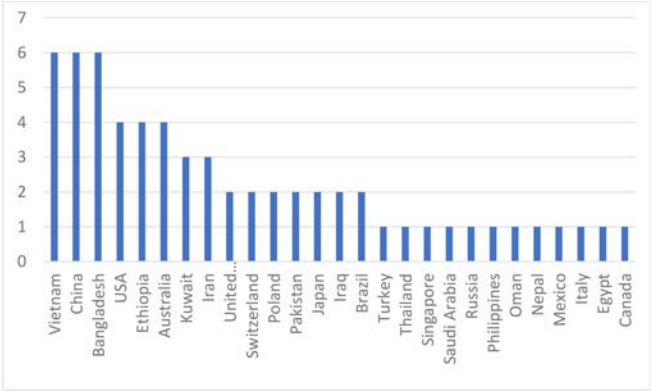

Fig. 1: Country wise distribution of number of articles published in the Journal during 1999-2020

NATIONAL DISTRIBUTION OF THE ARTICLES

State wise distribution

Initially, the research articles received were mainly from the states where the Department of Agricultural Meteorology was co-existing with the All India Coordinated Research Project on Agrometeorology. However, later on it spread all over the country as a result the Journal has articles from every state of the country including Andaman and Nicobar. Fig.2 shows the state wise

distribution of the article having more than 15 publications. The remaining states have their contribution of articles less than 10 such as Chandigarh (7), Goa (6), Mizoram (5), Sikkim and Manipur 3 each, Arunachal 2, Nagaland and Andaman 1 each.

The highest contributions of articles were from Gujarat (166) followed by Punjab (159), New Delhi (113), Maharashtra (98), Haryana (87), West Bengal (61) and Uttar Pradesh (58). Andhra Pradesh (50) and Telangana (32) altogether contributed 82 articles. Tamil Nadu, Bihar, Rajasthan, Karnataka, Himachal Pradesh, Madhya Pradesh, Odisha and Jammu and Kashmir contributed 30 to 49 articles while Uttarakhand, Assam, Kerala, Meghalaya, Chhattisgarh and Jharkhand contributed 15-29 articles (Fig.2). It may be noted that these numbers are not absolute, as there may be cross references as well as missing data.

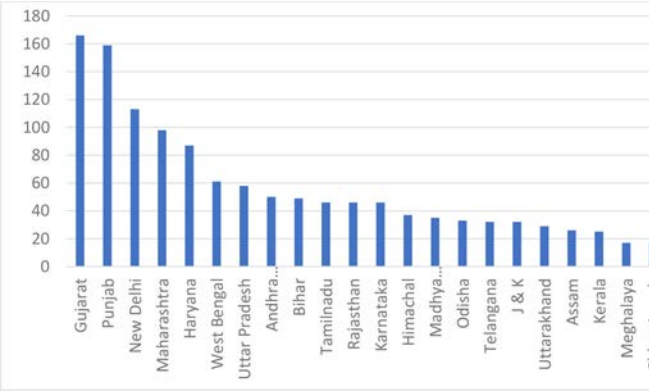

Fig. 2: State wise distribution of number of articles (>15) published in the Journal

Centre wise distribution

We have seen that the Journal has been recognized well nationally and internationally. It has received research articles from every state of the country. Within a state there are several universities and institutes which has contributed towards the publication of the journal. Most of publications were contributed by the State Agricultural Universities and ICAR Institutes, besides some State Remote Sensing Centers, Remote sensing Institutes and Space Application Center of ISRO. However, there have been substantial contribution from National Institute of Technology (NIT) and Indian Institute of Technology (IIT) located in different states which were not traditionally working on Agrometeorology related fields. Amongst IITs, Roorkee contributed maximum followed by IIT Delhi, IIT Kharagpur, IIT Bombay and Dhanbad. Among the NITs, Surat, Bhopal, Kurukshetra, Nagpur, and Hamirpur (HP) contribute article for the journal besides National Institute of Hydrology, Roorkee. Fig. 3 shows the station wise contribution of research articles. At the stations there may be more than on institutes/ centers contributing for the journal. It is seen that the New Delhi has contributed maximum (113 articles) followed by Ludhiana (100), Anand (93), Hyderabad (72) and Hisar (51). The centers like Pune, Mohanpur, Junagadh, Varanasi, Udaipur and Coimbatore contributed 20-40 articles, while other stations Bangalore, Patna, Thrissur, Bhubaneswar Palampur, Pantnagar, Jorhat and Karnal contributed between 15-20 articles. There were about 16 centers which contributed 10-15 articles while more than 25 centers contributed articles less than 10.

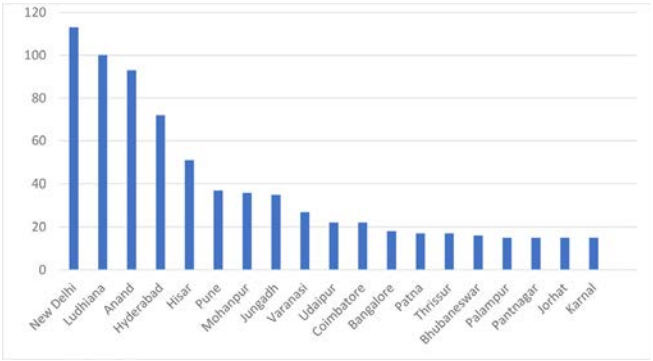

Fig. 3: Centre/station wise distribution of number of articles (>15) published in the Journal

QUALITATIVE DISTRIBUTION OF THE ARTICLES

The research work in Agricultural Meteorology in India mostly revolves around the four main programs of the AICRP on Agrometeorology, such as agroclimatic resource characterization, crop-weather relationship studies, crop-weather modeling, and insect-pest disease relationship studies. Later on, agrometeorological advisory services were also added to this program, which are implemented through a network of stations in different states. The Department of Science and Technology also assisted various centers across the country by authorizing ad hoc projects to build infrastructure and instruments for conducting research on current issues with specific goals. The Space Application Center and other institutes of ISRO are also conducting collaborative experiments with selected centers or departments of agricultural meteorology to apply various tools and techniques of remote sensing in agriculture. The weather forecasts issued by NCMRWF/IMD/MoES and the preparation of weather based advisory bulletins for farmers, along with their economic impact analyses, not only provided services from more than 100 centers but also opened greater avenues for agrometeorological research. The pressing issues of global warming and climate change, as well as their likely impact on agricultural production and other natural resources, as well as on all living beings such as livestock, fisheries, and insect pests, provided ample opportunity for agrometeorological researchers to broaden their field of study, from downscaling climate projection data to simulation modeling to assess their impact on agricultural production and natural resources at the local and regional levels. Thus, the research that falls under the domain of agrometeorology has a long list of fields of specialization. The *Journal of Agrometeorology* has received articles from almost all the scopes mentioned above and even some more.

Out of 1353 articles published in the journal during the period of evaluation (1999–2022), 931 articles were published as research articles, including editorials, and the rest (422) as short communications. All the articles were grouped into 20 identified fields of specialization, although it was sometimes very difficult to differentiate between one field and the others; hence, some articles were put in two groups depending upon the extent of work reported

under that field. Fig. 4 shows the number of articles falling under each category. The articles on crop-weather relationship studies have the highest number (206) and were based on field experimentation. They were followed by the articles on agroclimatic analysis (172), which were mostly based on hydrothermal analysis, water balance studies, determining the length of the crop growing season, and suggesting suitable crops or cropping systems.

To our great surprise, the third highest number of articles published were not from the main field of agrometeorology but from the field of entomology, where 154 articles were published related to insect-pest-weather relationship studies, mostly based on field trials. In this, some articles dealing with the impact of climate change on the growth and development of insects and pests are also included.

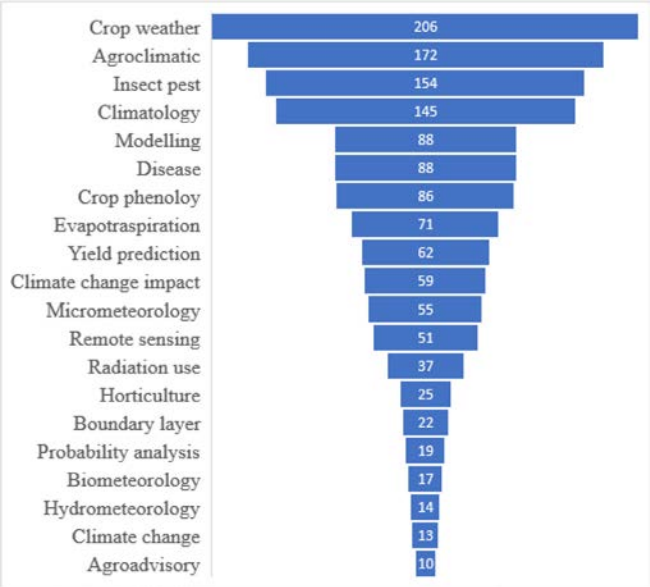

Fig. 4: Number of articles published in the Journal under different categories

The articles on climatological studies stand at the fourth place in the sequence with 145 number. These articles include some very elementary climatic study of a station like hot desert of Kuwait (Salam and Mazrooe. 2006b), cold arid of Leh (Ahmad and Kanth, 2014) and humid region of Meghalaya (Saikia *et al*., 2007) as well as the studies on regional monsoon rainfall variability relating with EI Nino and La Nina episodes (Singh *et al*, 2007), and with ENSO and IOD (Madolli *et al*, 2020). However, most of the articles were dealing with the analysis of variability and trend of climatic parameters over a station or district or state level. Under Modelling, there were 88 articles published in the journal which were based on different crop growth simulation models viz DSSAT, InfoCrop, WOFOST and APSIM besides some individual model development. The articles include the work on calibration and validation of the models (Patel *et al.*, 2010), sensitivity analysis (Mishra *et al.*, 2015), growth and yield prediction (Keerthi *et al.*, 2017), and potential impact of climate change (Patidar *et al.*, 2020).

The epidemiological studies on crop plants diseases also find a place in top 10 list of the articles with 88 numbers. Most of the publications pertain to correlating the percent disease index (PDI) with weather parameters. Under crop phenology (86 articles), the research publications were mainly on determining the heat unit requirement during different phases of the crops, and thereby to predict the phenological stages and yield of the crops. Further extension to this was to determine the heat use efficiency of the crops. The estimation of the evapotranspiration is one the important components of hydrological cycle and water balance studies. Most of the works published in the journal (71 articles) were on estimation of potential evapotranspiration or reference evapotranspiration by various methods including remote sensing technique, and determining the crop water requirements (Mehta and Pandey, 2016) and irrigation water requirement.

Although the yield prediction was not the main objective in crop-weather relationship studies, authors used to try to predict the growth and thereby yield of the crops. However, the articles categorized under yield prediction (62 articles) were mainly for yield prediction using long term data and applying various statistical techniques. The article of Kumar *et al.* (2019) is one such paper widely read and downloaded from the journal website. Climate change impact analysis started with the availability of climate change projection data under different climatic scenario. In most of the publications (59 articles) the crop simulation models were applied with projected climate as input parameter to simulate the climate change impact on different crops (Patidar *et al.*, 2020). The micrometeorological studies (55 articles) were identified based on the observations related to temperature, humidity and wind profile with crop canopy, soil temperature and soil moisture under mulch condition as well as canopy temperature and photosynthesis observations, including net and glass house observation and OTC **(**Mukherjee *et al*.,2015).

Remote sensing works published (52 articles) in the journal were related to various aspects of agrometeorological research viz moisture and nutrient stress detection, disease detection in different crops using ground-based observations, the soil moisture, crop biomass and other agrometeorological parameters estimation using space born observations. Different vegetation indices particularly NDVI has been widely used for various applications (Gupta, 2001; Sur *et al.*, 2018). Under radiation use, all the articles related to work on radiation balance, energy balance, radiation use efficiency etc altogether made it 37 articles for publication in the journal. Horticultures and vegetable crops related articles were 27 in number. Boundary layer studies (22 articles) were mostly confined to the LASPEX special issue in 2001. Rainfall probability analysis (19 articles); biometeorology (17 articles) dealing with mainly on THI and other stress related issues in livestock production, hydrometeorology (14 articles) dealing with rainfall-runoff estimation, water balance studies in watershed and river catchment areas; climate change dealing with downscaling of climate projection data; and Agro-advisory (10), were the subjects that had little less contribution in the total publication of the journal.

ONLINE PUBLICATION OF THE JOURNAL

The online publication system of OJS/PKP was installed on our web server in October 2021, but it took little time to completely

Table 1: List of top ten most viewed articles

Author	Title	Volume no. year	Abstracts	PDF files
SUDHEER KUMAR et al._	Comparison of Lasso and stepwise regression technique for wheat yield prediction	21(2): June 2019	552	295
LONARE et al.	Village level identification of sugarcane in Sangali, Maharashtra using open-source data	24(3): September 2022	429	127
ARAVIND et al.	Wheat yield prediction based on weather parameters using multiple linear, neural network and penalised regression models	24(1): March 2022	312	212
MEHTA and PANDEY	Crop water requirement (ETc) of different crops of middle Gujarat	18(1): June 2016	341	179
KUSHWAHA et al.	Seasonal climate forecasts (SCFs) based risk management strategies: A case study of rainfed rice cultivation in India	24(1): March 2022	289	151
LIU et al.	Assessment of precipitation suitable degree from integrated rice-crayfish farming systems in Jianghan Plain of China	24(2): June 2022	291	132
KHANNA et al.	Effect of weather parameters, host resistance and sowing date on disease severity and temporal dynamics of Fusarium wilt in chickpea	24(1): March 2022	255	167
SAHA et al.	Evaluating radiation interception pattern and RUE of green gram grown in Lower Gangetic Plains and assessing future yield based on RUE	24(1): March 2022	280	142
PRAMOD KUMAR et al.	Agro meteorological indices influenced by different sowing dates, irrigation and fertilizer levels under late sown Indian mustard in western Haryana, India	24(2): June 2022	264	148
GUNA et al.	Effect of high night temperature and CO_2 on yield and seed quality of summer green gram (Vigna radiata) under soil plant atmospheric research (SPAR)	24(3): September 2022	227	178

understand the work flow system. Meanwhile, we transferred all the articles of old issues to new platform and assigned DOI to each article. We could publish the December 2021 issue of the journal with DOI and from January 2022 all the articles were submitted and processed through online system only. The system also provides statistics on number of times the abstracts views and pdf file views on daily and or monthly basis. There are about 2000 registered users with this system. Fig. 5 shows the number of times abstracts and pdf file of the articles were viewed in the year (January- December 2022). It may be noted there is a fall in viewers in the month of July, which may be mainly due to hacking of our website that happened in last week of June as a result we lost some data and the same could be fully restored by mid-July 2022. In the month of November 2022, the highest numbers (8965) of articles were viewed. Table 1 shows the list of articles which were viewed most during the year 2022. It may be seen that except two articles, all articles were published in 2022 only. This shows that the online publication system has increased the visibility of articles published in the journal.

Fig. 5: Number of abstracts and the pdf files of articles viewed during January- December 2022 Z

Editorial activities

The online system also provides the editorial activities of the articles and at the end of the month, the system used to send an editorial report indicating the number of articles received, accepted, rejected and in the process during the month. Table 2 shows the

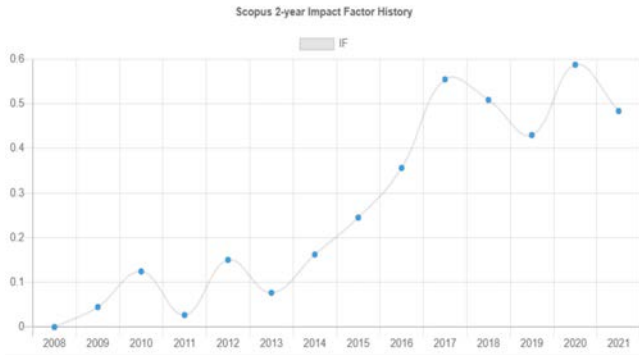

Fig.6: Trend of impact factor (IF) of the *Journal of Agrometeorology*

editorial activity in one year (January-December 2022). It may be seen that about 80% of articles are rejected most of them at the initial stage only.

Table 2: Editorial activities in the year 2022

Submissions received	445
Submissions accepted	81
Submissions declined	312
Submissions declined (Desk Reject)	280
Submissions declined (After Review)	32
Submissions published	88
Days to First editorial decision	4
Days to accept	88
Days to reject	4
Acceptance rate	20%
Rejection rate	80%
Desk reject rate	72%
After review reject rate	8%

IMPACT FACTORS OF THE JOURNAL

The impact factor (IF) is a measure of the frequency with which the average article in a journal has been cited in a particular year. It is used to measure the importance or rank of a journal by calculating the times its articles are cited. The calculation is based on a two-year period and involves dividing the number of times articles were cited by the number of articles that are citable. For example; the impact factor (IF) of a journal for 2022 is calculated as;

'IF' =A/B

Where, A is the number of times the articles published in 2020 and 2021were cited by the indexed journals in 2022 and B is the total number of citable articles published in 2020 and 2021. The IF is also calculated on three-year and four-year period basis. The Web of Science (WOS) of Clarivate Plc and the SCOPUS of Elsevier are the two main agencies having database of scientific journal. There are various agencies which uses these data and report the ranking of the journal and IF. The Journal Citation Reports uses WOS data, while SCImago Journal Rank (SJR) uses SCOPUS database. Besides IF, there are also other derived indices to evaluate the journal and articles ranking such as Cite Score, SJR and SNIP etc.

The Journal of Agrometeorology is being indexed by various agencies using both the databases. The SCImago Journal Rank (SJR) provides the details of the citable articles, self-citation, external citation and international collaborations etc (Journal of Agrometeorology (scimagojr.com). The Scijournal.org reports 'IF' of the journal using both the databases (Journal of Agrometeorology - SCI Journal). These are already provided on the web portal of the journal. Fig. 6 shows one such trend of 2-year impact factor of the *Journal of Agrometeorology.*

ACKNOWLEDGEMENT

Author sincerely thanks the Executive Council members of the Association of Agrometeorologists, the Editorial Board members of the journal, unanimous reviewers and all the authors whose contributions made this journal to achieve its international status.

CONCLUSION

The *Journal of Agrometeorology* has made a great progress in past 24 years of its publication. Its viewership and authorship increased globally over the time particularly after 2008. There has been well representation of all the states of the country although the distribution was skewed. Most of the publications were from the group of crop-weather relationship and agroclimatic analysis which emphasizes to redefine our research priorities. There is a tremendous scope for the new centers in India and SAARC countries to make this journal their first choice for publishing their articles related to the domain of agrometeorology. To encourage the good quality research, the Association of Agrometeorologists has already constituted various awards for best paper publication as well as best M.Sc. and Ph.D. thesis in Agricultural Meteorology. The online system of the journal helped us a lot in making timely decision on the submission, reviewing, rejections and acceptance of the articles. The system also provides a "Search" facility to find out the articles of our interest easily. Assigning DOI to each article has made the articles available globally. Hence, it is expected that the citations of the journal would increase in the times to come.

Conflict of Interest Statement: The author(s) declare(s) that there is no conflict of interest.

Disclaimer: The contents, opinions, and views expressed in the research article published in the Journal of Agrometeorology are the views of the authors and do not necessarily reflect the views of the organizations they belong to.

Publisher's Note: The periodical remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

REFERENCES

Ahmad, Latief and Raihana Habib Kanth. (2014). Characterization of climate of Leh district of cold-arid Himalaya. *J. Agrometeorol.*, *16*(2): 214–215. https://doi.org/10.54386/jam.v16i2.1525

Ali, M. H. and A.K.M. Adham. (2007). Impact of climate change on crop water demand and its implication on water resources planning: Bangladesh perspective. *J. Agrometeorol.*, *9*(1): 20–25. https://doi.org/10.54386/jam.v9i1.1073

Boote, K. J., J. W. Jones, and G. Hoogenboom (2008). Crop simulation models as tools for agro-advisories for weather and disease effects on production, *J. Agrometeorol*., 10 (Special issue): 9 - 17

Coughlan, K. J. and A. K. S. Huda (2008). Use of weather and climate information for agricultural planning and decision making, *J. Agrometeorol*., 10 (Special issue): 249-260.

Gupta, R. K. (2001). Estimation and validation of roughness length, surface temperature and sensible heat flux computed from remote sensing (WiFS and NOAA/AVHRR). *J. Agrometeorol.*, *3*(1-2): 189–215. https://doi.org/10.54386/jam.v3i1-2.405

Keerthi, P., Raj Singh, A. K.Dhaka, and C. Divesh. (2017). Growth and yield prediction of Indian mustard using InfoCrop model at Hisar, Haryana. *J. Agrometeorol.*, *19*(3): 259–261. https://doi.org/10.54386/jam.v19i3.667

Kersebaum, K.C., A.S. Nain, C. Nendel, M. Gandorfer and M. Wegehenkel (2008). Simulated effect of climate change on wheat production and nitrogen management at different sites in Germany, *J. Agrometeorol*., 10 (Special issue): 266-273.

Kumar, Sudheer, S.D. Attri, and K.K. Singh. (2019). Comparison of Lasso and stepwise regression technique for wheat yield prediction. *Journal of Agrometeorology*, *21*(2), 188–192. https://doi.org/10.54386/jam.v21i2.231

Li, Chunqiang, Baoguo Li and Keqin Hong. (2008). Climate change and its effect on reference evapotranspiation and crop water requirement in Hebei Province, China during 1965-1999, *J. Agrometeorol*., 10 (Special issue): 261-265.

Madolli, Mallappa J., Umesh Madolli, Huma Kousar Sangreskop, and Gouda P.A. (2020). The application of generalized additive models (GAMs) for assessing the teleconnection of ENSO and IOD with monsoon rainfall variability over Krishna river basin, India. *J. Agrometeorol.*, *22*(1): 33–40. https://doi.org/10.54386/jam.v22i1.119

Mehta, Rashmi and Vyas Pandey. (2016). Crop water requirement (ETc) of different crops of middle Gujarat. *J. Agrometeorol.*, *18*(1): 83–87. https://doi.org/10.54386/jam.v18i1.906

Mishra, Sudhir Kumar, A.M. Shekh, V. Pandey, S.B. Yadav, and H.R. Patel. (2015). Sensitivity analysis of four wheat cultivars to varying photoperiod and temperature at different phenological stages using WOFOST model. *J. Agrometeorol.*, *17*(1): 74–79. https://doi.org/10.54386/jam.v17i1.978

Mukherjee, Joydeep, S.S. Singh, Santosh Kumar, and Mohd. Idris. (2015). Radiation use efficiency and yield of wheat grown under elevated CO2 and temperature in open top chamber at Patna, Bihar. *J. Agrometeorol.*, *17*(2): 158–164. https://doi.org/10.54386/jam.v17i2.997

Patel, H. R., G. G. Patel, J. C. Shroff, Vyas Pandey, A. M. Shekh, R. P. Vadodaria, and B. K. Bhatt. (2010). Calibration and validation of CERES-wheat model for wheat in middle Gujarat region. *J. Agrometeorol.*, *12*(1): 114–117. https://doi.org/10.54386/jam.v12i1.1286

Patidar, Rohit, M. Mohanty, Nishant K. Sinha, S.C. Gupta, J. Somasundaram, R.S. Chaudhary, R. Soliya, K.M. Hati, M. Prabhakar, K. Sammi Reddy, A.K. Patra, and Srinivas Rao Ch. (2020). Potential impact of future climate change on maize (Zea mays L.) under rainfed condition in central India. *J. Agrometeorol*, *22*(1): 18–23. https://doi.org/10.54386/jam.v22i1.117

Saikia, Uday S., K. K. Satapathy, B. Goswami, R.K. Singh, and B. K. Rao. (2007). Trend of rainfall and temperature change at Umiam, Meghalaya. *J. Agrometeorol.*, *9*(2): 203–208. https://doi.org/10.54386/jam.v9i2.1129

Salam, M. Abdul and Suad Al Mazrooe. (2006a). Evapotranspiration estimates and water balance of Kuwait. *J. Agrometeorol.*, *8*(2): 243–247. https://doi.org/10.54386/jam.v8i2.1055

Salam, M. Abdul and Suad Al Mazrooe. (2006b). Normal weather conditions of Kuwait. *J. Agrometeorol.*, *8*(2):278–280. https://doi.org/10.54386/jam.v8i2.1062

Singh, Surender, V.U.M. Rao, and Diwan Singh. (2005). Association of EI Nino and La Nina episodes with local/regional monsoon rainfall in Haryana subdivision (India). *J. Agrometeorol.*, *7*(1): 1–13. https://doi.org/10.54386/jam.v7i1.806

Sivakumar, M.V.K. (2008). Agrometeorology and food security, *J. Agrometeorol.*, 10 (Special issue): 1 – 8.

Stigter, Kees (2008). Policy support for capacity building in weather and climate services focused on agriculture. *J. Agrometeorol.*, *10*(2): 107–112. https://doi.org/10.54386/jam.v10i2.1187

Sur, Koyel, Rucha Dave, and Prakash Chauhan. (2018). Spatio - temporal changes in NDVI and rainfall over Western Rajasthan and Gujarat region of India. *J. Agrometeorol.*, *20*(3): 189–195. https://doi.org/10.54386/jam.v20i3.541

Wani, Suhas P., T.K. Sreedevi, K.L. Sahrawat and Y.S. Ramakrishna (2008). Integrated watershed management - A food security approach for SAT rainfed areas, *J. Agrometeorol*., 10 (Special issue): 18 – 30.

Wegehenkel, M. and K.C. Kersebaum (2008). A first assessment of the impact of climate change on discharge and groundwater recharge in a catchment in Northeastern Germany, *J. Agrometeorol*., 10 (Special issue): 274-281.