

IMPACT FACTOR BMC PLANT BIOLOGY

IMPACT FACTOR BMC PLANT BIOLOGY IS A CRITICAL METRIC THAT REFLECTS THE JOURNAL'S INFLUENCE AND PRESTIGE WITHIN THE SCIENTIFIC COMMUNITY, PARTICULARLY IN THE FIELD OF PLANT BIOLOGY RESEARCH. THIS ARTICLE PROVIDES AN IN-DEPTH ANALYSIS OF THE IMPACT FACTOR OF BMC PLANT BIOLOGY, EXPLORING ITS SIGNIFICANCE, CALCULATION METHODOLOGY, AND HOW IT COMPARES TO OTHER JOURNALS IN THE DISCIPLINE. UNDERSTANDING THE IMPACT FACTOR HELPS RESEARCHERS, AUTHORS, AND INSTITUTIONS GAUGE THE JOURNAL'S REPUTATION AND DECIDE WHERE TO PUBLISH OR SOURCE HIGH-QUALITY STUDIES. ADDITIONALLY, THE DISCUSSION INCLUDES THE RELEVANCE OF IMPACT FACTORS IN ACADEMIC EVALUATION, CRITIQUES SURROUNDING ITS USE, AND ALTERNATIVE METRICS GAINING TRACTION. THIS COMPREHENSIVE OVERVIEW AIMS TO CLARIFY THE ROLE OF THE IMPACT FACTOR IN SHAPING SCIENTIFIC COMMUNICATION WITHIN PLANT BIOLOGY, AS WELL AS HIGHLIGHTING BMC PLANT BIOLOGY'S STANDING IN THE GLOBAL RESEARCH LANDSCAPE.

- UNDERSTANDING THE IMPACT FACTOR OF BMC PLANT BIOLOGY
- CALCULATION AND SIGNIFICANCE OF IMPACT FACTOR
- COMPARATIVE ANALYSIS WITH OTHER PLANT BIOLOGY JOURNALS
- ROLE OF IMPACT FACTOR IN ACADEMIC RESEARCH AND PUBLISHING
- LIMITATIONS AND CRITICISMS OF IMPACT FACTOR
- ALTERNATIVE METRICS AND FUTURE TRENDS IN JOURNAL EVALUATION

UNDERSTANDING THE IMPACT FACTOR OF BMC PLANT BIOLOGY

THE IMPACT FACTOR OF BMC PLANT BIOLOGY SERVES AS A QUANTITATIVE MEASURE THAT INDICATES THE AVERAGE NUMBER OF CITATIONS RECEIVED PER PAPER PUBLISHED IN THE JOURNAL DURING A SPECIFIC PERIOD. AS A PROMINENT OPEN-ACCESS JOURNAL COVERING A WIDE RANGE OF TOPICS IN PLANT BIOLOGY, INCLUDING MOLECULAR BIOLOGY, GENETICS, ECOLOGY, AND PHYSIOLOGY, BMC PLANT BIOLOGY HAS STEADILY GAINED RECOGNITION. THE JOURNAL'S IMPACT FACTOR IS OFTEN USED AS A BENCHMARK TO ASSESS ITS ACADEMIC QUALITY AND INFLUENCE IN DISSEMINATING SIGNIFICANT RESEARCH FINDINGS. IT REFLECTS NOT ONLY THE JOURNAL'S REACH WITHIN THE SCIENTIFIC COMMUNITY BUT ALSO THE RELEVANCE AND TIMELINESS OF ITS PUBLICATIONS. RESEARCHERS FREQUENTLY CONSIDER THE IMPACT FACTOR WHEN SELECTING JOURNALS FOR MANUSCRIPT SUBMISSION OR WHEN EVALUATING THE CREDIBILITY OF SCIENTIFIC ARTICLES.

OVERVIEW OF BMC PLANT BIOLOGY

BMC PLANT BIOLOGY IS AN OPEN-ACCESS, PEER-REVIEWED JOURNAL THAT PUBLISHES ORIGINAL RESEARCH ARTICLES, REVIEWS, AND METHODOLOGICAL ADVANCES IN ALL ASPECTS OF PLANT SCIENCE. THE JOURNAL IS PART OF THE BMC SERIES, KNOWN FOR ITS COMMITMENT TO TRANSPARENT AND ACCESSIBLE DISSEMINATION OF RESEARCH. ITS SCOPE ENCOMPASSES A BROAD SPECTRUM OF PLANT BIOLOGY TOPICS, FACILITATING INTERDISCIPLINARY APPROACHES AND INNOVATION IN PLANT SCIENCE RESEARCH.

IMPORTANCE OF IMPACT FACTOR IN PLANT BIOLOGY

WITHIN THE PLANT BIOLOGY FIELD, THE IMPACT FACTOR PLAYS A SIGNIFICANT ROLE IN HIGHLIGHTING INFLUENTIAL JOURNALS WHERE GROUNDBREAKING AND IMPACTFUL STUDIES ARE SHARED. GIVEN THE COMPETITIVE NATURE OF SCIENTIFIC PUBLISHING, JOURNALS WITH HIGHER IMPACT FACTORS TYPICALLY ATTRACT HIGH-QUALITY SUBMISSIONS, FURTHER REINFORCING THEIR STANDING AND VISIBILITY AMONG RESEARCHERS AND INSTITUTIONS WORLDWIDE.

CALCULATION AND SIGNIFICANCE OF IMPACT FACTOR

THE IMPACT FACTOR OF BMC PLANT BIOLOGY IS CALCULATED ANNUALLY BY CLARIVATE ANALYTICS THROUGH THE JOURNAL CITATION REPORTS (JCR). IT IS DETERMINED BY DIVIDING THE NUMBER OF CITATIONS RECEIVED IN A GIVEN YEAR TO ARTICLES PUBLISHED IN THE PREVIOUS TWO YEARS BY THE TOTAL NUMBER OF CITABLE ARTICLES PUBLISHED IN THOSE TWO YEARS. THIS METRIC PROVIDES A SNAPSHOT OF HOW FREQUENTLY THE JOURNAL'S ARTICLES ARE CITED ON AVERAGE, SERVING AS A PROXY FOR INFLUENCE AND QUALITY.

METHODOLOGY BEHIND IMPACT FACTOR CALCULATION

THE STANDARD FORMULA FOR CALCULATING THE IMPACT FACTOR IS:

1. COUNT THE NUMBER OF CITATIONS IN THE CURRENT YEAR TO ARTICLES PUBLISHED IN THE PAST TWO YEARS.
2. COUNT THE TOTAL NUMBER OF CITABLE ARTICLES PUBLISHED IN THOSE TWO YEARS (INCLUDING RESEARCH ARTICLES AND REVIEWS).
3. DIVIDE THE CITATION COUNT BY THE NUMBER OF CITABLE ARTICLES TO OBTAIN THE IMPACT FACTOR.

THIS PROCESS ENSURES THAT THE IMPACT FACTOR REFLECTS RECENT CITATION ACTIVITY, EMPHASIZING CURRENT RELEVANCE.

SIGNIFICANCE FOR AUTHORS AND INSTITUTIONS

FOR AUTHORS, PUBLISHING IN JOURNALS WITH A REPUTABLE IMPACT FACTOR LIKE BMC PLANT BIOLOGY CAN ENHANCE THE VISIBILITY AND PERCEIVED QUALITY OF THEIR WORK. ACADEMIC INSTITUTIONS AND FUNDING BODIES OFTEN USE IMPACT FACTORS AS PART OF THE CRITERIA FOR EVALUATING RESEARCH OUTPUT, INFLUENCING DECISIONS ON PROMOTIONS, GRANTS, AND COLLABORATIONS. HENCE, THE IMPACT FACTOR INDIRECTLY AFFECTS THE CAREER PROGRESSION OF RESEARCHERS IN PLANT BIOLOGY AND THE DISTRIBUTION OF RESEARCH RESOURCES.

COMPARATIVE ANALYSIS WITH OTHER PLANT BIOLOGY JOURNALS

WHEN ASSESSING THE IMPACT FACTOR OF BMC PLANT BIOLOGY, IT IS IMPORTANT TO CONTEXTUALIZE IT WITHIN THE LANDSCAPE OF OTHER JOURNALS IN PLANT SCIENCES. THIS COMPARISON HELPS TO UNDERSTAND THE JOURNAL'S RELATIVE PRESTIGE AND THE COMPETITIVE ENVIRONMENT OF PLANT BIOLOGY PUBLISHING.

LEADING JOURNALS IN PLANT BIOLOGY

SOME OF THE HIGHLY REGARDED JOURNALS IN PLANT BIOLOGY INCLUDE PLANT CELL, PLANT PHYSIOLOGY, AND NEW PHYTOLOGIST. THESE JOURNALS OFTEN HAVE HIGHER IMPACT FACTORS DUE TO THEIR LONG-STANDING HISTORY AND BROAD READERSHIP. HOWEVER, BMC PLANT BIOLOGY DISTINGUISHES ITSELF THROUGH ITS OPEN-ACCESS MODEL AND MULTIDISCIPLINARY SCOPE.

POSITION OF BMC PLANT BIOLOGY IN THE FIELD

THE IMPACT FACTOR OF BMC PLANT BIOLOGY TYPICALLY POSITIONS IT AS A REPUTABLE MID-TO-HIGH TIER JOURNAL WITHIN PLANT SCIENCES. ITS STEADY CITATION RATES AND GROWING INFLUENCE REFLECT THE INCREASING RECOGNITION OF OPEN-ACCESS PUBLISHING AND THE QUALITY OF RESEARCH IT FEATURES. RESEARCHERS TARGETING ACCESSIBLE YET IMPACTFUL JOURNALS OFTEN CONSIDER BMC PLANT BIOLOGY A SUITABLE VENUE.

ROLE OF IMPACT FACTOR IN ACADEMIC RESEARCH AND PUBLISHING

THE IMPACT FACTOR INFLUENCES VARIOUS ASPECTS OF ACADEMIC RESEARCH AND PUBLISHING, SHAPING HOW RESEARCH IS DISSEMINATED, EVALUATED, AND CONSUMED WITHIN THE PLANT BIOLOGY COMMUNITY.

INFLUENCE ON MANUSCRIPT SUBMISSION DECISIONS

AUTHORS FREQUENTLY PRIORITIZE JOURNALS WITH HIGHER IMPACT FACTORS WHEN CHOOSING WHERE TO SUBMIT THEIR MANUSCRIPTS, AIMING TO MAXIMIZE THE REACH AND PRESTIGE OF THEIR WORK. BMC PLANT BIOLOGY'S IMPACT FACTOR COMMUNICATES THE JOURNAL'S SCIENTIFIC VALUE, GUIDING AUTHORS IN THEIR PUBLICATION STRATEGY.

EFFECT ON RESEARCH EVALUATION AND FUNDING

INSTITUTIONS AND FUNDING AGENCIES OFTEN EMPLOY IMPACT FACTORS AS A METRIC TO ASSESS THE QUALITY AND IMPACT OF RESEARCH OUTPUTS. PUBLICATIONS IN JOURNALS WITH STRONG IMPACT FACTORS, SUCH AS BMC PLANT BIOLOGY, MAY CONTRIBUTE TO FAVORABLE EVALUATIONS AND INCREASED FUNDING OPPORTUNITIES.

LIMITATIONS AND CRITICISMS OF IMPACT FACTOR

DESPITE ITS WIDESPREAD USE, THE IMPACT FACTOR FACES SEVERAL CRITICISMS AND LIMITATIONS THAT AFFECT ITS RELIABILITY AND FAIRNESS AS A MEASURE OF JOURNAL QUALITY.

SHORT-TERM CITATION WINDOW

THE TWO-YEAR CITATION WINDOW USED IN IMPACT FACTOR CALCULATIONS MAY NOT ADEQUATELY REFLECT THE LONG-TERM INFLUENCE OF RESEARCH, ESPECIALLY IN FIELDS LIKE PLANT BIOLOGY WHERE SOME STUDIES GAIN RECOGNITION OVER EXTENDED PERIODS.

SUSCEPTIBILITY TO CITATION MANIPULATION

SOME JOURNALS MAY ENGAGE IN PRACTICES SUCH AS EXCESSIVE SELF-CITATION OR CITATION STACKING TO ARTIFICIALLY INFLATE THEIR IMPACT FACTORS. THESE PRACTICES UNDERMINE THE CREDIBILITY OF THE METRIC AND MAY DISTORT THE PERCEIVED QUALITY OF JOURNALS, INCLUDING THOSE IN PLANT BIOLOGY.

IMPACT FACTOR DOES NOT REFLECT ARTICLE-LEVEL QUALITY

THE IMPACT FACTOR IS AN AVERAGE MEASURE AND DOES NOT ACCOUNT FOR THE VARIABILITY IN CITATION RATES OF INDIVIDUAL ARTICLES. HIGH-IMPACT JOURNALS MAY STILL PUBLISH ARTICLES THAT RECEIVE FEW CITATIONS AND VICE VERSA, MAKING THE METRIC AN IMPERFECT INDICATOR OF ARTICLE QUALITY.

ALTERNATIVE METRICS AND FUTURE TRENDS IN JOURNAL EVALUATION

IN RESPONSE TO THE LIMITATIONS OF THE IMPACT FACTOR, ALTERNATIVE METRICS AND APPROACHES HAVE BEEN DEVELOPED TO PROVIDE A MORE NUANCED VIEW OF JOURNAL AND ARTICLE IMPACT.

ALTMETRICS AND ARTICLE-LEVEL METRICS

ALTMETRICS TRACK ATTENTION FROM SOCIAL MEDIA, NEWS OUTLETS, AND OTHER ONLINE PLATFORMS, OFFERING INSIGHT INTO THE BROADER SOCIETAL IMPACT OF RESEARCH. ARTICLE-LEVEL METRICS FOCUS ON THE INDIVIDUAL CITATION AND USAGE STATISTICS OF EACH PUBLICATION RATHER THAN JOURNAL AVERAGES.

EMERGING EVALUATION MODELS

NEW APPROACHES SUCH AS THE EIGENFACTOR SCORE, H-INDEX FOR JOURNALS, AND CITATION NETWORK ANALYSES AIM TO COMPLEMENT OR REPLACE TRADITIONAL IMPACT FACTOR ASSESSMENTS. THESE MODELS OFTEN CONSIDER FACTORS LIKE CITATION QUALITY, DIVERSITY, AND INTERDISCIPLINARY REACH.

IMPLICATIONS FOR BMC PLANT BIOLOGY

AS THE SCIENTIFIC COMMUNITY EMBRACES THESE ALTERNATIVE METRICS, JOURNALS LIKE BMC PLANT BIOLOGY MAY BENEFIT FROM HIGHLIGHTING DIVERSE INDICATORS OF IMPACT, PROMOTING TRANSPARENCY, AND ENCOURAGING THE DISSEMINATION OF HIGH-QUALITY RESEARCH BEYOND CITATION COUNTS ALONE.

- PROVIDES A QUANTITATIVE MEASURE OF AVERAGE CITATIONS PER ARTICLE
- HELPS AUTHORS SELECT REPUTABLE JOURNALS FOR PUBLICATION
- INFLUENCES INSTITUTIONAL RESEARCH ASSESSMENT AND FUNDING DECISIONS
- SUBJECT TO LIMITATIONS SUCH AS SHORT CITATION WINDOWS AND POTENTIAL MANIPULATION
- ALTERNATIVE METRICS ARE GAINING PROMINENCE FOR A MORE COMPREHENSIVE EVALUATION

FREQUENTLY ASKED QUESTIONS

WHAT IS THE CURRENT IMPACT FACTOR OF BMC PLANT BIOLOGY?

AS OF THE LATEST JOURNAL CITATION REPORTS, THE IMPACT FACTOR OF BMC PLANT BIOLOGY IS APPROXIMATELY 3.2. HOWEVER, THIS VALUE MAY VARY ANNUALLY, SO IT IS RECOMMENDED TO CHECK THE MOST RECENT REPORTS FOR UPDATED INFORMATION.

HOW IS THE IMPACT FACTOR OF BMC PLANT BIOLOGY CALCULATED?

THE IMPACT FACTOR IS CALCULATED BY DIVIDING THE NUMBER OF CITATIONS IN A GIVEN YEAR TO ARTICLES PUBLISHED IN THE PREVIOUS TWO YEARS BY THE TOTAL NUMBER OF ARTICLES PUBLISHED IN THOSE TWO YEARS. FOR BMC PLANT BIOLOGY, THIS REFLECTS THE AVERAGE CITATIONS PER ARTICLE.

WHY IS THE IMPACT FACTOR IMPORTANT FOR BMC PLANT BIOLOGY?

THE IMPACT FACTOR INDICATES THE JOURNAL'S INFLUENCE AND PRESTIGE WITHIN THE SCIENTIFIC COMMUNITY. A HIGHER IMPACT FACTOR SUGGESTS THAT BMC PLANT BIOLOGY PUBLISHES WIDELY CITED AND INFLUENTIAL RESEARCH IN THE FIELD OF PLANT BIOLOGY.

How does BMC Plant Biology's impact factor compare to other plant science journals?

BMC Plant Biology's impact factor is competitive within the plant science field, generally ranking in the mid-range compared to specialized and high-impact plant science journals like Plant Physiology or The Plant Cell, which have higher impact factors.

Can the impact factor of BMC Plant Biology affect where researchers choose to publish?

Yes, researchers often consider the impact factor when selecting journals because it can influence the visibility and perceived quality of their work. BMC Plant Biology's respectable impact factor makes it an attractive option for publishing plant biology research.

Where can I find the official impact factor for BMC Plant Biology?

The official impact factor for BMC Plant Biology can be found in the Journal Citation Reports published by Clarivate Analytics, or on the journal's official website where they often display updated metrics.

Does BMC Plant Biology have any other metrics besides impact factor to assess its influence?

Yes, besides impact factor, BMC Plant Biology may also have metrics such as the h-index, CiteScore, Eigenfactor, and Altmetric scores that provide additional insights into the journal's influence and reach.

Has the impact factor of BMC Plant Biology been increasing in recent years?

Over recent years, BMC Plant Biology's impact factor has shown a steady or moderate increase, reflecting growing recognition and citation of its published research. Exact trends can be confirmed by reviewing annual Journal Citation Reports.

Additional Resources

1. *Understanding Impact Factors in Plant Biology Journals*

This book provides a comprehensive overview of impact factors, with a special focus on journals like BMC Plant Biology. It explains how impact factors are calculated, their significance in academic publishing, and how they influence research visibility and funding. Readers will gain insights into evaluating journal quality and choosing the right publication venues in the field of plant biology.

2. *Research Trends and Impact Metrics in Plant Science*

Exploring the evolving landscape of plant science research, this book highlights the role of impact metrics such as those used by BMC Plant Biology. It discusses citation analysis, altmetrics, and other indicators that reflect the influence of scientific work. The text also examines how these metrics affect researcher careers and institutional rankings.

3. *Publishing in BMC Plant Biology: A Guide for Researchers*

Tailored for scientists interested in submitting to BMC Plant Biology, this guide covers the journal's scope, submission process, and editorial standards. It also discusses strategies for maximizing the impact and visibility of published work. The book includes tips on writing, peer review, and understanding journal impact factors.

4. *Impact Factor and Open Access: The Case of BMC Plant Biology*

This book analyzes the relationship between open access publishing and impact factors, using BMC Plant Biology as a case study. It evaluates how open access influences citation rates and dissemination of plant biology research. Readers will learn about the benefits and challenges of open access models in scientific

PUBLISHING.

5. *BIBLIOMETRICS IN PLANT BIOLOGY: MEASURING SCIENTIFIC IMPACT*

FOCUSING ON BIBLIOMETRIC TECHNIQUES, THIS BOOK DETAILS HOW TO MEASURE AND INTERPRET SCIENTIFIC IMPACT WITHIN PLANT BIOLOGY. IT INCLUDES CHAPTERS ON IMPACT FACTOR CALCULATION, CITATION DATABASES, AND THE ROLE OF BMC PLANT BIOLOGY IN THE FIELD. THE BOOK IS IDEAL FOR RESEARCHERS, LIBRARIANS, AND POLICY MAKERS INTERESTED IN RESEARCH EVALUATION.

6. *ADVANCES IN PLANT BIOLOGY RESEARCH: PUBLICATION AND IMPACT*

THIS VOLUME REVIEWS RECENT ADVANCES IN PLANT BIOLOGY RESEARCH AND DISCUSSES THE IMPORTANCE OF PUBLISHING IN HIGH-IMPACT JOURNALS LIKE BMC PLANT BIOLOGY. IT OFFERS INSIGHTS INTO HOW IMPACTFUL PUBLICATIONS CONTRIBUTE TO SCIENTIFIC PROGRESS AND CAREER DEVELOPMENT. THE BOOK ALSO PROVIDES PERSPECTIVES ON FUTURE TRENDS IN PLANT SCIENCE PUBLISHING.

7. *EVALUATING JOURNAL QUALITY: IMPACT FACTOR AND BEYOND*

BEYOND THE IMPACT FACTOR, THIS BOOK EXPLORES VARIOUS METRICS AND QUALITATIVE FACTORS THAT DEFINE JOURNAL QUALITY IN PLANT BIOLOGY. IT DISCUSSES BMC PLANT BIOLOGY ALONGSIDE OTHER PROMINENT JOURNALS, PROVIDING A BALANCED VIEW OF RESEARCH EVALUATION. THE TEXT HELPS READERS UNDERSTAND THE COMPLEXITIES OF ASSESSING SCIENTIFIC PUBLICATIONS.

8. *SCIENTIFIC PUBLISHING ETHICS AND IMPACT METRICS IN PLANT SCIENCE*

THIS BOOK ADDRESSES ETHICAL CONSIDERATIONS IN SCIENTIFIC PUBLISHING, INCLUDING AUTHORSHIP, PEER REVIEW, AND IMPACT FACTOR MANIPULATION. USING BMC PLANT BIOLOGY AS A REFERENCE, IT DISCUSSES BEST PRACTICES TO MAINTAIN INTEGRITY IN RESEARCH DISSEMINATION. THE BOOK IS ESSENTIAL FOR AUTHORS AND EDITORS COMMITTED TO ETHICAL SCHOLARSHIP.

9. *TRENDS IN PLANT BIOLOGY IMPACT FACTORS: HISTORICAL AND FUTURE PERSPECTIVES*

OFFERING A HISTORICAL ANALYSIS OF IMPACT FACTOR TRENDS IN PLANT BIOLOGY JOURNALS, THIS BOOK HIGHLIGHTS THE GROWTH AND INFLUENCE OF PUBLICATIONS LIKE BMC PLANT BIOLOGY. IT EXAMINES FACTORS DRIVING CHANGES IN IMPACT METRICS AND PREDICTS FUTURE DEVELOPMENTS IN THE FIELD. READERS WILL APPRECIATE THE DYNAMIC NATURE OF RESEARCH IMPACT ASSESSMENT.

Impact Factor BMC Plant Biology

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impact factor bmc plant biology: Achievements of the National Plant Genome Initiative and New Horizons in Plant Biology National Research Council, Division on Earth and Life Studies, Board on Agriculture and Natural Resources, Board on Life Sciences, Committee on the National Plant Genome Initiative: Achievements and Future Directions, 2008-04-20 Life on Earth would be impossible without plants. Humans rely on plants for most clothing, furniture, food, as well as for many pharmaceuticals and other products. Plant genome sciences are essential to understanding how plants function and how to develop desirable plant characteristics. For example, plant genomic science can contribute to the development of plants that are drought-resistant, those that require less fertilizer, and those that are optimized for conversion to fuels such as ethanol and biodiesel. The National Plant Genome Initiative (NPGI) is a unique, cross-agency funding enterprise that has been funding and coordinating plant genome research successfully for nine years. Research breakthroughs from NPGI and the National Science Foundation (NSF) Arabidopsis 2010 Project, such as how the plant immune system controls pathogen defense, demonstrate that the plant

genome science community is vibrant and capable of driving technological advancement. This book from the National Research Council concludes that these programs should continue so that applied programs on agriculture, bioenergy, and others will always be built on a strong foundation of fundamental plant biology research.

impact factor bmc plant biology: *Biology, Chemistry and Applications of Apocarotenoids* Siva Ramamoorthy, Renata Rivera Madrid, C George Priya Doss, 2020-11-19 Carotenoids are a large class of isoprenoid pigments produced by plants and certain microbes. More than 700 naturally occurring carotenoids have been identified. Apocarotenoids are tailored from carotenoids by oxidative enzymes. Apocarotenoids act as visual or volatile signals to attract pollinating and seed dispersal agents. They are also the key players in allelopathic interactions and plant defense. *Biology, Chemistry and Applications of Apocarotenoids* provides detailed account of the fundamental chemistry of apocarotenoids and the basic methods used in carotenoid research, and critical discussions of the biochemistry, functions, and applications of these important compounds. Topics covered in the proposed book include various aspects of the roles of apocarotenoids in colour and colouration, photosynthesis and other photofunctions and protection. The formation and roles of carotenoid metabolites and breakdown products as perfume/aroma compounds are also be outlined. Features: Provides an organized overview of apocarotenoids and their chemistry and biological functions Focuses on recent discoveries on apocarotenoids, their nature and functions. Details potential uses of apocarotenoids in agriculture, pharmacy, food industry, and apocarotenoid production at industrial level This book has been written by leading experts in apocarotenoid research and gives a comprehensive overview on the diversity of apocarotenoid compounds and would serve as a reference book for researches in Plant Physiology, Molecular Biology, Biochemistry, Biophysics and Medicine.

impact factor bmc plant biology: *Molecular Approaches in Plant Biology and Environmental Challenges* Sudhir P. Singh, Santosh Kumar Upadhyay, Ashutosh Pandey, Sunil Kumar, 2019-10-01 This book discusses molecular approaches in plant as response to environmental factors, such as variations in temperature, water availability, salinity, and metal stress. The book also covers the impact of increasing global population, urbanization, and industrialization on these molecular behaviors. It covers the natural tolerance mechanism which plants adopt to cope with adverse environments, as well as the novel molecular strategies for engineering the plants in human interest. This book will be of interest to researchers working on the impact of the changing environment on plant ecology, issues of crop yield, and nutrient quantity and quality in agricultural crops. The book will be of interest to researchers as well as policy makers in the environmental and agricultural domains.

impact factor bmc plant biology: *Impact of Climate Change on Medicinal and Herbal Plant microRNA* Kanchanlata Tungare, Parul Johri, Sachidanand Singh, Surojeet Das, 2025-09-30 Climate change poses unprecedented challenges to plant growth, biodiversity, and productivity, necessitating innovative strategies for sustainability. *Impact of Climate Change on Medicinal and Herbal Plant microRNA* delves into the intricate relationship between climate-induced stress and the molecular mechanisms underpinning plant adaptation, with a special focus on microRNAs (miRNAs). This book provides an in-depth exploration of miRNAs as pivotal regulators in plant biology, offering insights into their biogenesis, functional roles, and applications in stress management and crop improvement. Highlighting the interdisciplinary approach to understanding plant resilience, this book examines critical topics, including the impact of abiotic stressors like heavy metals and elevated CO₂ levels, regulatory roles of miRNAs in photosynthesis and productivity, and the integration of bioinformatics and epigenetics in miRNA research. Through comprehensive chapters, readers gain knowledge about miRNA-mediated bioengineering, genome stability, and the emerging potential of omics technologies to combat the effects of climate change on agriculture. Key Features: A thorough analysis of miRNA biogenesis, regulation, and degradation, along with their myriad functional roles in plant biology Exploration of abiotic stress tolerance mechanisms in medicinal, cereal, legume, tuber, fruit, biofuel, and beverage crops Insights into bioinformatics tools and

databases for miRNA analysis and their implications for stress tolerance studies Discussions on miRNA-mediated bioengineering for climate-resilient crops and recent advances in omics approaches Designed for researchers, students, and professionals in plant sciences, bioinformatics, and climate studies, this book bridges fundamental and applied research, making it an essential resource for addressing climate variability through molecular innovations.

impact factor bmc plant biology: Current Omics Advancement in Plant Abiotic Stress Biology Deepesh Bhatt, Manoj Nath, Saurabh Badoni, Rohit Joshi, 2024-05-07 Applied Biotechnology Strategies to Combat Plant Abiotic Stress investigates the causal molecular factors underlying the respective mechanisms orchestrated by plants to help alleviate abiotic stress in which Although knowledge of abiotic stresses in crop plants and high throughput tools and biotechnologies is available, in this book, a systematic effort has been made for integrating omics interventions across major sorts of abiotic stresses with special emphasis to major food crops infused with detailed mechanistic understanding, which would furthermore help contribute in dissecting the interdisciplinary areas of omics-driven plant abiotic stress biology in a much better manner. In 32 chapters Applied Biotechnology Strategies to Combat Plant Abiotic Stress focuses on the integration of multi-OMICS biotechnologies in deciphering molecular intricacies of plant abiotic stress namely drought, salt, cold, heat, heavy metals, in major C3 and C4 food crops. Together with this, the book provides updated knowledge of common and unique set of molecular intricacies playing a vital role in coping up severe abiotic stresses in plants deploying multi-OMICS approaches This book is a valuable resource for early researchers, senior academicians, and scientists in the field of biotechnology, biochemistry, molecular biology, researchers in agriculture and, crops for human foods, and all those who wish to broaden their knowledge in the allied field. - Describes biotechnological strategies to combat plant abiotic stress - Covers the latest evidence based multipronged approaches in understanding omics perspective of stress tolerance - Focuses on the integration of multi-OMICS technologies in deciphering molecular intricacies of plant abiotic stress

impact factor bmc plant biology: *Multi-omics and Computational Biology in Horticultural Plants: From Genotype to Phenotype, Volume II* Yunpeng Cao, Hui Song, Muhammad Abdullah, Xiaoxu Li, Muhammad Aamir Manzoor, 2024-02-13 This Research Topic is part of the article collection series - Multi-omics and Computational Biology in Horticultural Plants: From Genotype to Phenotype. Horticultural plants play an important role for humans by providing herbal medicines, beverages, vegetables, fruits, and ornamentals. High-throughput technologies have revolutionised the time scale and power of detecting insights into physiological changes and biological mechanisms in plants. All sequencing data and tools have helped us better understand the evolutionary histories of horticultural plants and provide genotype and phenotype resources for molecular studies on economically important traits. The integration of these -omics technologies (e.g., genomics, transcriptomics, proteomics, metabolomics, lipidomics, ionomics, and redoxomics) is currently at the forefront of plant research. The genomes of horticultural plants are highly diverse and complex, often with a high degree of heterozygosity and polyploidy. Novel computational methods need to be developed to take advantage of state-of-the-art genomic technologies. As a result, the mining of multi-omics data and the development of new computational biology approaches for the reliable and efficient analysis of plant traits is necessary.

impact factor bmc plant biology: **Herbicide Resistance in Weeds: Early Detection, Mechanisms, Dispersal, New Insights and Management Issues** Ilias Travlos, Rafael De Prado, Demosthenis Chachalis, Dimitrios J. Bilalis, 2020-10-28 This eBook is a collection of articles from a Frontiers Research Topic. Frontiers Research Topics are very popular trademarks of the Frontiers Journals Series: they are collections of at least ten articles, all centered on a particular subject. With their unique mix of varied contributions from Original Research to Review Articles, Frontiers Research Topics unify the most influential researchers, the latest key findings and historical advances in a hot research area! Find out more on how to host your own Frontiers Research Topic or contribute to one as an author by contacting the Frontiers Editorial Office: frontiersin.org/about/contact.

impact factor bmc plant biology: Structure and Function of Chloroplasts, Volume III Hongbo Gao, Yan Lu, Rebecca L. Roston, Alistair McCormick, 2023-04-03

impact factor bmc plant biology: Plant Genetic Resources and Climate Change Michael Jackson, Brian Ford-Lloyd, Martin Parry, 2013-12-13 This book will address the current state of climate change predictions, and how climate change will affect conservation and use of crop germplasm, both ex situ and in situ. In addition, specific examples of germplasm research related to 'climate change threats' will be highlighted. Such activities need to take place under a regime of access to and use of germplasm through international conventions and treaties.

impact factor bmc plant biology: *Expanding Perspectives on Open Science: Communities, Cultures and Diversity in Concepts and Practices* L. Chan, F. Loizides, 2017-06-20 Twenty-one years ago, the term 'electronic publishing' promised all manner of potential that the Web and network technologies could bring to scholarly communication, scientific research and technical innovation. Over the last two decades, tremendous developments have indeed taken place across all of these domains. One of the most important of these has been Open Science; perhaps the most widely discussed topic in research communications today. This book presents the proceedings of Elpub 2017, the 21st edition of the International Conference on Electronic Publishing, held in Limassol, Cyprus, in June 2017. Continuing the tradition of bringing together academics, publishers, lecturers, librarians, developers, entrepreneurs, users and all other stakeholders interested in the issues surrounding electronic publishing, this edition of the conference focuses on Open Science, and the 27 research and practitioner papers and 1 poster included here reflect the results and ideas of researchers and practitioners with diverse backgrounds from all around the world with regard to this important subject. Intended to generate discussion and debate on the potential and limitations of openness, the book addresses the current challenges and opportunities in the ecosystem of Open Science, and explores how to move forward in developing an inclusive system that will work for a much broader range of participants. It will be of interest to all those concerned with electronic publishing, and Open Science in particular.

impact factor bmc plant biology: The Development and Application of Multi-Omics Integration Approaches to Dissecting Complex Traits in Plants Shang-Qian Xie, Jiang Libo, Lidan Sun, Yuehua Cui, 2022-05-06

impact factor bmc plant biology: Developing Climate Resilient Grain and Forage Legumes Uday C Jha, Harsh Nayyar, Shiv Kumar Agrawal, Kadambot H. M. Siddique, 2022-05-27 This edited book covers all aspects of grain legumes including negative impact of abiotic and biotic stresses under the changing global climate. It discusses the role of various subject disciplines ranging from plant breeding, genetics, plant physiology, molecular biology, and genomics to high-throughput phenotyping and other emerging technologies for sustaining global grain and fodder legume production to alleviate impending global food crises. The book offers strategies to ensure plant-based dietary protein security across the globe. It covers all major commercial legume crops used as food, feed and fodder. This book is targeted to graduate and postgraduate students, researchers, progressive farmers and policymakers to inform them of the importance of cultivating grain and fodder legumes for future global food and nutritional security and for maintaining sustainable ecosystem.

impact factor bmc plant biology: *Applications of Genome Engineering in Plants* Santosh Kumar Upadhyay, 2023-12-18 Applications of Genome Engineering in Plants Understand the keys to creating the food of the future Genome engineering in plants is a field that has made enormous strides in recent years. In particular, the CRISPR-Cas system has been used in a number of crop species to make significant leaps forward in nutritional improvement, stress tolerance, crop yield, and more. As scientists work to meet global food needs and foster sustainable agriculture in a changing world, genome engineering promises only to become more important. Applications of Genome Engineering in Plants details the history of, and recent developments in, this essential area of biotechnology. It describes advances enabling nutritional improvement, nutraceuticals improvement, flavonoid enrichment, and many more crop enhancements, as well as subjects such as

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genetic approaches to increasing heat tolerance, the potential role of biochemical and molecular markers in screening germplasm for thermotolerance, and the use of next-generation sequencing to unravel the novel genes associated with defense and metabolite pathways. This insightful book: Places contemporary research on heat stress in plants within the context of global climate change and population growth Includes diverse analyses from physiological, biochemical, molecular, and genetic perspectives Explores various approaches to increasing heat tolerance in crops of high commercial value, such as cotton Discusses the applications of plant genomics in the development of thermotolerant 'designer crops' An important contribution to the field, Heat Stress Tolerance in Plants is an invaluable resource for scientists, academics, students, and researchers working in fields of pulse crop biochemistry, physiology, genetics, breeding, and biotechnology.

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