ENVIRONMENTAL AND EXPERIMENTAL BOTANY

DESCRIPTION

Aims and Scope of the Journal Environmental and Experimental Botany:

Environmental and Experimental Botany (EEB) publishes research papers on the physical, chemical, biological, molecular mechanisms and processes involved in the responses of plants to their environment.

In addition to research papers, the journal includes review articles. Submission is in agreement with the Editors-in-Chief.

The Journal also publishes special issues which are built by invited guest editors and are related to the main themes of EEB.

The areas covered by the Journal include:

(1) Responses of plants to heavy metals and pollutants
(2) Plant/water interactions (salinity, drought, flooding)
(3) Responses of plants to radiations ranging from UV-B to infrared
(4) Plant/atmosphere relations (ozone, CO2, temperature)
(5) Global change impacts on plant ecophysiology
(6) Biotic interactions involving environmental factors.

Each submitted manuscript related to these areas should be preferably based on an explicitly elaborated mechanistic hypothesis. The purely descriptive and following types of manuscripts are not suitable for EEB: field monitoring surveys, pure mathematical modeling without experimentations, pure correlative works, applied papers on agriculture and phytopathology, studies of plant biology, gene expression and molecular works without considering environmental aspects. The research should be based on a clear hypothesis and provide new insights on plant responses to the environment, preferably providing evidence of new mechanisms underlying plant stress resistance. Ecological studies are also encouraged if they provide a sound basis of physiological processes involved in the plant response to the environment.
AUDIENCE

Plant scientists, physiologists and molecular biologists.

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Redox regulation of photosynthesis under abiotic stress
Kunming Chen, Northwest A&F University, College of Life Sciences, State Key Laboratory of Crop Stress Biology in Arid Areas, Yangling, China
Abiotic stress, ROS signaling and Redox balance, Stress physiology and molecular biology, Biosafety and environmental phytoremediation

Ilaria Colzi, University of Florence Department of Biology, Firenze, Italy
Main research interests: molecular and physiological studies on metal tolerance strategies of wild plants adapted to grow on heavy metals-enriched soils (e.g. mines or serpentine outcrops), and their potential for application in environmental technologies; metal exclusion and hyperaccumulation; plant responses and signalling under abiotic stress.

Danilo Menezes Daloso, Federal University of Ceará, Department of Biochemistry and Molecular Biology, Fortaleza, Brazil
Plant metabolism: Stomata regulation, metabolomics and inter-organelle thiol-metabolism

Thomas A. Day, Arizona State University, Tempe, Arizona, United States of America
Climate change, deserts, biogeochemistry, ecology, ecosystems

Liumin Fan, Peking University, Beijing, China
Mechanisms underlying plant stress and phytohormone gibberellin signal transduction; functional genomics, molecular genetics, biochemical and other approaches; stress and gibberellin signaling pathways; epigenetic regulatory machinery for gibberellin and stress-responsive gene expression; cross-talk between gibberellin and stress hormone abscisic acid

Renwei Feng, Fujian Agriculture and Forestry University, Fuzhou, China
Antimony; Selenium; phytoremediation; in situ passivation; risk assessment of heavy metal contamination

Lorenzo Ferroni, University of Ferrara Department of Life Sciences and Biotechnology, Ferrara, Italy
Photosynthesis, Thylakoid membrane, Chlorophyll fluorescence, Acclimation

Etelvina Figueira, University of Aveiro, Aveiro, Portugal
Mechanisms of tolerance to metals; oxidative stress; bacterial volatiles; plant bacteria interactions; plant growth promoting bacteria

Queila Garcia, Federal University of Minas Gerais Department of Botany, BELO HORIZONTE, Brazil
Seed ecology, seed dormancy cycling, oxidative signaling, hormonal balance, tropical species

Luisa Ghelardini, University of Florence Department of Agrarian Management Systems Food and Forestry, Firenze, Italy
Plant pathology, Tree phenology, (Alien) Plant pathogens, Emerging plant diseases

Cristina Gonnelli, University of Florence Department of Biology, Firenze, Italy
Race metals, Metallophytes, Exclusion, Hyperaccumulation

Robert Hänsch, TU Braunschweig University, Braunschweig, Germany
Sulphite detoxification, nitrate assimilation, protein localization, protein-protein interaction, plant defensin - molecular plant physiology and plant cell biology

Henrik Hartmann, Max-Planck Institute for Biogeochemistry, Biogeochemical Processes, Jena, Germany
Tree mortality, drought, carbon allocation, carbohydrates, isotope labeling

Matthew Haworth, The National Research Council of Italy, Institute for Sustainable Plant Protection, Firenze, Italy
Stomatal control; stomatal evolution; photosynthesis; elevated [CO2]; drought

David Jespersen, University of Georgia College of Agricultural and Environmental Sciences - Griffin Campus, Griffin, Georgia, United States of America
Turfgrass, grass physiology, Abiotic stress

Yuan-Qing Jiang, Northwest Agriculture and Forestry University, Yangling, Shaanxi, China
Abiotic stress, abscisic acid, reactive oxygen species, biotic stress, transcription factor

Hazel M. Kalaji, Warsaw University of Life Sciences, Institute of Biology, Department of Plant Physiology, Warszawa, Poland
Photosynthesis, Chlorophyll fluorescence, Stress physiology, Plant talk, Machine learning

Annamari Markkola, University of Oulu, Oulu, Finland
Plant ecophysiology, Tree physiology, Stress physiology

Jordi Martinez-Vilalta, Center for Ecological Research and Forestry Applications, Barcelona, Spain
Plant-fungal interactions, mycorrhizal ecology, forest ecology

Robert Hänsch, TU Braunschweig University, Braunschweig, Germany
Breeding for abiotic and biotic stress tolerance; testing of effects and efficacy of agro-chemicals; studying the effects of climate change on plants; screening and characterization of mutants

Chunyang Li, Hangzhou Normal University, College of Life and Environmental Sciences, Hangzhou, China
Plant ecophysiology, Tree physiology, Stress physiology

Cornelius Lütz, University of Innsbruck Institute of Botany and Botanical Garden, Innsbruck, Austria
Plant anatomy and cell biology; Stress physiology of plants; Metabolic mechanisms of adaptations

Jordi Martinez-Vilalta, Center for Ecological Research and Forestry Applications, Barcelona, Spain
drought, ecophysiology, forest ecology, hydraulics, water transport

**Andy A. Meharg**, Queen's University Belfast The Institute for Global Food Security, Belfast, United Kingdom
My research is focused around how pollutants & nutrients cycle in the environment. Arsenic biogeochemistry is of particular interest.

**Cristina Nali**, University of Pisa Department of Agricultural Food and Agro-environmental Sciences, Pisa, Italy
Air pollution, Abiotic stress, Plant pathology, Ecosystem services, Urban forestry

**Abdallah Oukarroum**, Mohammed VI Polytechnic University, Ben Guerir, Morocco
Plant Physiology, Plant stress, Photosynthesis, Chlorophyll a fluorescence, Ecotoxicology

**Martina Pollastrini**, University of Florence Department of Agrarian Management Systems Food and Forestry, Firenze, Italy
plant physiology, ecology, plant stress, forest biodiversity, forest monitoring, photosynthesis, chlorophyll fluorescence, drought, ozone, growth

**Markus Puschenreiter**, University of Natural Resources and Life Sciences Vienna, Wien, Austria
Heavy metals/trace elements in soils and plants, Rhizosphere processes involved in metal/trace element acquisition, Soil remediation technologies / phytoremediation

**Fernando Rivas**, National Agricultural Research Institute of Uruguay, Salto, Uruguay
Cultivo; Genética vegetal y fitomejoramiento; Fisiología y bioquímica de la planta

**Piotr Rozpądek**, Jagiellonian University in Krakow Malopolska Centre of Biotechnology, Kraków, Poland
Endophytes, Symbiosis, Heavy metals, Gene expression

**Eric Ruelland**, Sorbonne University Pierre and Marie Curie Campus, Paris, France
My interest is lipid signaling in plants, and more precisely phosphoglycerolipid signalling.

Plant functional traits, ecosystem services, chlorophyll “a” fluorescence, JIP-Test, ecophysiology

**Luigi Sanità di Toppi**, University of Pisa, Pisa, Italy
Metal stress, adaptation and resistance

**Dimitrios Savvas**, Agricultural University of Athens, Athens, Greece
Irrigation of greenhouse crops, Greenhouse microclimate, Slinity management and strategies for improving the use of saline water in agriculture, Soilless culture, Nutrition and fertilization of vegetable crops, Implications of groundwater and surface water management on nutrient cycling, Physical properties of growing media and their impact on irrigation management of crops grown on substrates, Cultural practices in vegetable crops

**Henk Schat**, VU Amsterdam, Amsterdam, Netherlands
Mainly focused on the genetics, and physiological and molecular mechanisms, of metal hyperaccumulation and hypertolerance in (facultative) metallophytes

**Rachid Serraj**, CGIAR Independent Science & Partnership Council, Rome, Italy
Physiology; Stress tolerance; drought, nitrogen fixation; rice; dryland; water use efficiency; climate change; food security.

**Sergey Shabala**, University of Tasmania, Hobart, Australia
stress physiology (salinity; waterlogging; drought; oxidative stress; soil acidity; Al toxicity); membrane transport (ion channels and pumps); plant nutrition; stomata physiology; circadian and ultradian rhythms and oscillations

**Arun K. Shanker**, Central Research Institute for Dryland Agriculture, Hyderabad, Andhra Pradesh, India
Cr–plant interactions and various other abiotic stresses in crops and plants; gene finding and data mining to identify candidate genes for multiple abiotic stress tolerance in the family Poacea

**Joaquim Albenisio Gomes Silveira**, Federal University of Ceara Plant Metabolism Laboratory, FORTALEZA, Brazil

**Joseph Sullivan**, University of Maryland at College Park, College Park, Maryland, United States of America
UV radiation, Plant Physiological Ecology, Global Climate Change, Stress Physiology

**Massimiliano Tattini**, Research Institute for the Sustainable Protection of Plants National Research Council Florence Unit, Sesto Fiorentino, Italy
oxidative stress, light quality, environmental stress, cold acclimation and deacclimation

**Michael Tausz**, Central Queensland University Science Environment and Agriculture, Gladstone, Australia
plant physiologist interested in how trees and crops cope with environmental stress and changing climate

**Paitip Thiravetyan**, King Mongkut's University of Technology Thonburi, Division of Biotechnology, Bangkok, Thailand
Plant stress response, air pollution, wastewater treatment, heavy metals, adsorption

**Timothy Tschaplinski**, Oak Ridge National Laboratory, Oak Ridge, Tennessee, United States of America
Plant molecularphysiologist experienced in biochemistry, specifically the application of mass spectrometry to identify new genes for specific roles in genomics, bioenergy crop production, environmental stress physiology, and plant-microbe signaling. Current research includes metabolomics for phenotypic
characterization of genetically-modified Populus, Arabidopsis, Eucalyptus, Castanea, switchgrass, and numerous bioenergy-relevant microbial species

**Ismail Turkan**, Ege University, İzmir, Turkey

Plant Physiology, Plant Biology, Physiology, Antioxidants, Botany, Reactive Oxygen Species, Abiotic Stress Tolerance, Plant Environmental Stress Physiology, Photosynthesis, Drought, Molecular Plant Physiology, Abiotic Stress, Environmental Stresses, Stress Physiology, Salinity, Salt-Tolerance, Redox Signaling, Redox Regulation, Salt Stress, Plant Stress, Glutathione Reductase, Plant Abiotic Stress

**Luis Valledor**, University of Oviedo, Oviedo, Spain

abiotic stress, systems biology, proteomics, metabolomics, epigenomics

**Joseph C.V. Vu**, University of Florida, Gainesville, Florida, United States of America

Climate Change; Elevated Growth CO2; Water and Temperature Stresses; Leaf Photosynthesis; Carbon Metabolism

**Ruigang Wang**, Agro-Environmental Protection Institute Ministry of Agriculture and Rural Affairs, Tianjin, China

remediation of heavy metal contaminated soil, plant stress physiology and biochemistry, global climate change and plant adaptability

**Yucheng Wang**, Shenyang Agricultural University, College of forestry, Shenyang, China

Abiotic stress; Molecular biology; Transcription factor; Physiology

**Michael Wisniewski**, USDA-ARS Appalachian Fruit Research Station, Kearneysville, West Virginia, United States of America

stress physiology of fruit trees, cold hardiness, and frost protection, host-pathogen interactions, biological control of postharvest diseases, microbiome, apple biotechnology

**Yi Xu**, Texas A&M AgriLife Research and Extension Center at Dallas, Dallas, Texas, United States of America

plant physiology, abiotic stress, bioinformatics, molecular biology, antioxidants

**Hong-Xia Zhang**, Ludong University, College of Agriculture, Yantai, China

Abiotic stress, Transgenic plant, Xylem, Salt

**Sheng Zhang**, Sichuan University School of Life Sciences, Chengdu, China

Tree physiology, Proteomics, Metabolome, Biotic and abiotic stresses, Sexual difference

**Marek Živčák**, Slovak University of Agriculture in Nitra Department of Plant Physiology, Nitra, Slovakia

Stress, Photosynthesis, Phenotyping, Fluorescence, Crop physiology
INTRODUCTION

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(5) Ecophysiology of Northern plants under global change and environmental stress

Each submitted manuscript related to these areas should be based on an explicitly elaborated mechanistic hypothesis.

The following types of manuscripts are not suitable for EEB: purely descriptive studies, use of unicellular or micro-organisms as models, agricultural investigations, phytopathological studies, ecological reports, studies of plant biology without considering environmental factors.

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