

Instructions for Contributors

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Aims and scope. This journal publishes the new results of completed, original studies on any aspect of plant physiology based also on approaches and methods of biochemistry, biophysics, genetics, molecular biology, genetic engineering, applied plant physiology, and other related fields. We also accept descriptions of original methods and instruments opening novel possibilities for obtaining and analyzing experimental results. Papers outlining trends and hypotheses are accepted as well. Review articles, chronicles of congresses and conferences, and book reviews are published at the invitation of Editor-in-Chief. For serial publication, no less than two manuscripts should be submitted simultaneously. Brief communications are not accepted. However, in some cases, the editors may suggest that authors shorten a manuscript to the size of a brief communication (no more than 10 pages of text and 4 figures and/or tables in all).

Manuscript submission implies that the material has not been published before and is not under consideration for publication anywhere else.

Manuscript requirements. Manuscript length should not exceed 20 printed pages (30 printed pages for review), including references, tables, and figure captions; it should contain no more than 7 figures. The manuscript must be typed (Times New Roman font, 12 pt, 1.5 spacing throughout) in a single column on one side of white paper (A4, 210 × 297 mm) with left and top margins of 2.5 cm and a right margin of 1.5 cm and printed using a high-quality printer. Before title of the manuscript (in first page only) have to be 5 empty lines.

All pages, including references, tables, and figure captions, should be numbered consecutively in the top right-hand corner. (Pages with figures are not numbered.) All lines should be enumerated throughout the entire text by the left.

Please arrange your manuscript as follows: title, author(s), affiliation(s), abstract, keywords, abbreviations, INTRODUCTION, MATERIALS AND METHODS, RESULTS, DISCUSSION (or RESULTS and DISCUSSION), ACKNOWLEDGMENTS, REFERENCES, TABLES, and FIGURE CAPTIONS.

The **title** must be concise (no more than 10 words) but informative. Capitalize the first letters in all nouns, pronouns, adjectives, verbs, adverbs, and subordinate conjunctions. Avoid nonstandard abbreviations.

Authors' initials and surnames should be written with one space between the initials and between the initials and an author's surname and with the conjunction "and" before the last author. Author affiliations should be marked as ^a, ^b, etc.

On a separate page, provide the full names of all authors to help translators correctly transliterate initials in Russian, their postal addresses and telephone and fax numbers, as well as e-mail addresses, and indicate the corresponding author.

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Abstract. All papers should be preceded by a concise (of no more than 250 words) but informative abstract, in which the plant material (binomial, including authority) is given. The abstract should explain to the general reader the major contributions of the article. The abstract is typed as a single paragraph. Citing and discussing literature are not recommended.

Keywords (no more than 10 items) are listed beginning with the Latin name(s) of the organism(s) studied without author's name and arranged as follows: *Keywords: Lycopersicon esculentum*, transgenic tomato plant, ethylene.

Abbreviations are listed in alphabetical order and arranged as follows: BA---benzyladenine; PSI--photosystem I; WT---wild type.

Define nonstandard abbreviations when they are first mentioned in the text and abstract.

Main headings within the text should be placed on separate lines and written in all capitals. First-level subheadings (in RESULTS) should follow title capitalization (example: *Cytokinin-Dependent Signal Transduction*) and be placed on separate lines. Second-level subheadings (In MATERIALS AND METHODS and headings run into a paragraph should follow sentence capitalization (example: **Plant material.**).

INTRODUCTION. The introductory part of the article should explain its objective and cite relevant articles published previously.

MATERIALS AND METHODS should include complete botanical names (genus, species, authority for the binomial, and, when appropriate, cultivar) for all plants studied. Following first mentions, generic names should be abbreviated to the initial except when confusion could arise by reference to genera with the same initial. Growth conditions must be described. New procedures should be described in sufficient detail to be repeated. A short description of other procedures

should also be given. Avoid references like "... as described in [2]" or "... according to [5]." This section should also contain the names of the manufacturers (including country name) of materials and reagents. Statistical analysis of the results should be described. Identify the number of replications and the number of times individual experiments were duplicated. It should be clearly stated whether the standard deviation or the standard error is used.

RESULTS should be presented mainly in figures and tables without their detailed discussion. Double documentation of the same points in figures and tables is not acceptable.

DISCUSSION should contain an interpretation but not a recapitulation of the results. The Results and Discussion sections may be combined if a description of experimental results is brief or when the interpretation of the previous experiment is required for the logical substantiation of the next one.

ACKNOWLEDGMENTS. List dedications, acknowledgments, and funding sources.

REFERENCES. Cite published papers and books (for experimental work no more than 35 and for reviews no more than 100 sources); citing the abstracts of meetings is not recommended. References should be cited in the same numerical order as they appear in the text in square brackets. In the reference list, all authors should be named unless there are 10 or more. For titles in English, including titles of books, journals, articles, chapters, and dissertations and names of conferences, use title capitalization. For titles given in a foreign language, follow the rules of capitalization for that language. Research papers should have no more than 30 and review not more than 90 references.

Journal articles should be cited as follows:

1. Stahl, Y. and Simon, R., Plant primary meristems: shared functions and regulatory mechanisms, *Curr. Opin. Plant Biol.*, 2010, vol. 13, pp. 53--58.
2. Murata, N., Takahashi, S., Nishiyama, Y., and Allakhverdiev, S.I., Photoinhibition of photosystem II under environmental stress, *Biochim. Biophys. Acta*, 2007, vol. 1767, pp. 414--421.
3. Sharova, E.I., Expansins: proteins involved in cell wall softening during plant growth and morphogenesis, *Russ. J. Plant Physiol.*, 2007, vol. 54, pp. 713--727.

For correct abbreviations of journal titles, refer to *Chemical Abstracts Service Source Index* (CASSI).

Books should be cited as follows:

3. *Salicylic Acid: A Plant Hormone*, Hayat, S. and Ahmad, A., Eds., Berlin: Springer-Verlag, 2007.

Articles or chapters in books should be cited as follows:

1. Lichtenthaler, H., Vegetation stress: an introduction to the stress concept in plants, *Vegetation Stress*, Lichtenthaler, H., Ed., Stuttgart: Gustav Fisher, 1996, pp. 4--14.

Dissertations should be cited as follows:

10. Nesterova, A.N., Effects of lead, cadmium, and zinc ions on the meristem cell arrangement and growth of maize seedling roots, *Cand. Sci. (Biol.) Dissertation*, Moscow: Mosk. Gos. Univ., 1989.

TABLES (no more than 7). Each table should have a brief title, be on a separate page, and be 1.5-spaced. Each column should have a heading; units should appear under the column heading(s). Some remarks may be written below the table, but they should not repeat details given in the Materials and Methods section.

FIGURE CAPTIONS must be a brief self-sufficient explanation of the illustrations. Provide them separately from figures.

FIGURES (no more than 7). All figures (photographs, graphs, and diagrams) should be cited in the text and numbered consecutively throughout. Figures should provide enough information to easily understand them. Figure parts should be identified by lowercase roman letters ((a), (b), (c), etc.) in parentheses. The axes of each graph should have the numerical scale and the measured quantity with units (for example, CO₂ absorbance, $\mu\text{mol}/(\text{m}^2 \text{ s})$, but not photosynthesis, $\mu\text{mol}/(\text{m}^2 \text{ s})$). The curves should be defined by italic Arabic numbers, and their explanation should be provided in the caption. Submit all figures on separate pages. Supply figures at final size widths: 80 mm (single column) or 160 mm (double column). Maximum depth is 230 mm.

Figure number, author's name, and manuscript title should be written in the bottom left-hand corner.

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Figures and photographs are printed in black-and-white (colored photos may be printed only for the additional payment). The publication of color figures in online version of the Journal is free of charge. The manuscript should be signed by all authors.

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Submit figures as separate files (1 file = 1 figure). The preferred figure format is WORD and TIFF, but JPEG and GIF are also permitted. Load your figures at 600 dpi (dots per inch) for lineart

and no less than 300 dpi for halftones and photos. Use EPS format for figures and diagrams prepared in vector graphic. Try to keep files under 5 MB.

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Units of Measure, Symbols, and Abbreviations

Basic SI units:

A---ampere; Bq---becquerel; D---dalton; E---einstein; F---farad; G---gauss; g---gram; h---hour; Hz---hertz; J---joule; l---liter; m---meter; min---minute; N---newton; Pa---pascal; R---roentgen; Gr---gray; s---second; V---volt; W---watt; Ω ---ohm.

Use the following multiplying prefixes for the appropriate units:

P---peta 10^{15} ; T---tera 10^{12} ; G---giga 10^9 ; M---mega 10^6 ; k---kilo 10^3 ; d---deci 10^{-1} ; c---centi 10^{-2} ; m---milli 10^{-3} ; μ ---micro 10^{-6} ; n---nano 10^{-9} ; p---pico 10^{-12} ; f---femto 10^{-15} .

Do not use negative exponents to indicate units, e.g., use $\mu\text{mol}/(\text{m}^2 \text{ s})$ rather than $\mu\text{mol m}^{-2} \text{ s}^{-1}$.

Use without definition the following abbreviations:

atm---atmosphere

bp---base pair

cpm---counts per min

cv.---cultivar

dpm---disintegrations per min

dry wt---dry weight

equiv---equivalent

fr wt---fresh weight

g---gravity

ha---hectare

K---degrees Kelvin

kb---kilobase

K_M ---Michaelis constant

mol---mole

mol wt---molecular weight

osmol---osmole

pI---isoelectric point

ppm---parts per million

rpm---revolutions per minute

R_f ---retardation factor

SD---standard deviation

SE---standard error

sp.---species

UV---ultraviolet

var.---variety

vol.---volume (but v/v, not vol/vol)

wt---weight (as a measure of material) (but w/v, not wt/vol)

Methods:

ANOVA---analysis of variance
 ELISA---enzyme-linked immunosorbent assay
 ESR---electron spin resonance
 FPLC---fast protein liquid chromatography
 GC---gas chromatography
 IEF---isoelectric focusing
 HPLC---high performance liquid chromatography
 RP-HPLC---reverse-phase HPLC
 MS---mass spectrometry
 NMR---nuclear magnetic resonance
 PAGE---polyacrylamide gel electrophoresis
 PCR---polymerase chain reaction
 RACE---rapid amplification of cDNA ends
 RFLP---restriction fragment length polymorphism
 RT-PCR---reverse transcription PCR
 SDS-PAGE---denaturing PAGE
 TLC---thin-layer chromatography

Chemicals:

ABA---abscisic acid
 AMP, ADP, ATP---adenosine mono-, di-, triphosphate
 ATPase---adenosine triphosphatase
 BSA---bovine serum albumin
 buffers: Tris, Mes, Hepes, Pipes
 cAMP, cGMP---cyclic monophosphates
 CMP, CDP, CTP---cytidine mono-, di-, triphosphate
 CoA, AcetylCoA---coenzyme A, acetylcoenzyme A
 2,4-D---2,4-dichlorophenoxyacetic acid
 DNA---deoxyribonucleic acid
 cDNA---complementary DNA
 ctDNA---chloroplast DNA
 mtDNA---mitochondrial DNA
 nDNA---nuclear DNA

snDNA---small nuclear DNA
 ssDNA, dsDNA---single-stranded DNA, double-stranded DNA
 DNase---deoxyribonuclease
 EDTA---ethylenediaminetetraacetate
 EGTA---ethyleneglycol-*bis* (*b*-aminoethylether)
 N,N,N',N'-tetraacetic acid
 FAD---flavine adenine dinucleotide
 FADH₂---its reduced form
 GA---gibberellin
 GA₃---gibberellic acid
 GMP, GDP, GTP---guanosine mono-, di-, triphosphate
 IgG, IgM, etc.---immunoglobulin G, M, etc.
 IAA---indoleacetic acid
 MDA---malondialdehyde
 MS medium---Murashige and Skoog nutrient medium
 NAA---naphthalene acetic acid
 NAD---nicotinamide adenine dinucleotide
 NADH---its reduced form
 NADP---nicotinamide adenine dinucleotide phosphate
 NADPH---its reduced form
 PAAG---polyacrylamide gel
 PEG---polyethylene glycol
 poly(A)---polyadenylate
 RNA---ribonucleic acid
 cRNA---complementary RNA
 hnRNA---heterogenous nuclear RNA
 mRNA---messenger RNA
 rRNA---ribosomal RNA
 snRNA---small nuclear RNA
 tRNA---transfer RNA
 RNase---ribonuclease
 RNP---ribonucleoprotein
 ROS---reactive oxygen species
 Rubisco---ribulose-1,5-bisphosphate carboxylase/oxygenase

SDS---sodium dodecyl sulfate

TCA---trichloroacetic acid

UMP, UDP, UTP---uridine mono-, di-, triphosphate

Amino Acids:

Use the three-letter symbols (or the one-letter symbols in the case of protein sequences):

Ala(A)---alanine

Arg(R)---arginine

Asn(N)---asparagine

Asp(D)---aspartic acid

Cys(C)---cysteine

Gln(Q)---glutamine

Glu(E)---glutamic acid

Gly(G)---glycine

His(H)---histidine

Hyp(O)---hydroxyproline

Ile(I)---isoleucine

Leu(L)---leucine

Lys(K)---lysine

Met(M)---methionine

Orn---ornithine

Phe(F)---phenylalanine

Pro(P)---proline

Ser(S)---serine

Thr(T)---threonine

Trp(W)---tryptophan

Tyr(Y)---tyrosine

Val(V)---valine

Sugars:

Ara---arabinose

dRib---deoxyribose

Fru---fructose

Fuc---fucose

Gal---galactose

Glu---glucose
 Man---mannose
 Raf---raffinose
 Rib---ribose
 Suc---sucrose
 UDP-Gal---uridine diphosphate galactose
 Xyl---xylose

The following need to be defined if used:

Chemicals:

Ab---antibody
 mAb---monoclonal antibody
 AD---actinomycin D
 AP---action potential
 BA---benzyladenine
 BEP---bioelectric potential
 CH---cycloheximide
 CCC---chlorocholine chloride
 Chlide---chlorophyllide
 CM-cellulose---carboxymethylcellulose
 ConA---concanavalin A
 Cyt---cytochrome
 DTT---dithiothreitol
 DCMU---dichlorophenyldimethylurea, diuron
 DMSO---dimethyl sulfoxide
 DNP---2,4-dinitrophenol
 FA---fatty acids
 Fd---ferredoxin
 GABA--- γ -aminobutyric acid
 GSH, GSSG---glutathione, reduced and oxidized
 IMP, IDP, ITP---inosine mono-, di-, triphosphate
 IPA---isopentenyladenine
 PAL---phenylalanine ammonia-lyase
 PBS---phosphate-buffered saline

PC---phosphatidylcholine
 Pchl---protochlorophyll
 Pchl_{id}---protochlorophyllide
 PE---phosphatidylethanolamine
 PEP---phosphoenolpyruvate
 PEPC---phosphoenolpyruvate carboxylase
 P_{fr}---phytochrome, far-red absorbing
 P_r---phytochrome, red absorbing
 P_i---phosphate (inorganic)
 PK/PKC---protein kinase/protein kinase C
 PP_i---pyrophosphate
 PMSF---phenylmethylsulfonyl fluoride
 SHAM---salicylhydroxamic acid
 SSC---standard saline citrate
 UTR---untranslated region
 Z---zeatin
 ZR---zeatin riboside

Other abbreviations:

C₃ plant (not C₃-plant)
 C₄ plant (not C₄-plant)
 CAM---crassulacean acid metabolism
 2D/3D---two-dimensional/three-dimensional
 DAF---days after flowering
 DAP---days after pollination
 ER---endoplasmic reticulum
 ETC---electron transport chain
 EU---enzyme unit
 FR---far-red light
 IC₅₀---inhibitory concentration (50% inhibition)
 IR---infrared
 IRGA---infrared gas analyzer
 isotopes---¹⁴C, ³H, etc.
 LD---long day

LD₅₀---lethal dose (50% survival)
 LHC---light-harvesting complex
 lx---lux
 MF---microfilaments
 MT---microtubules
 ORF---open reading frame
 PAR---photosynthetically active radiation
 PPFD--- photosynthetic photon flux density, mmol/(m² s)
 PFD---photon flux density, mmol/(m² s)
 POL---peroxidation of lipids
 PSI---photosystem I
 PSII---photosystem II
 R---red light
 RC---respiratory control
 RNA polymerase (not RNA-polymerase)
 RH---relative humidity
 SD---short day
 X-rays---Roentgen rays

Abbreviations used in tables:

A---absorbance (A_{320})
 chl---chlorophyll
 conc---concentration
 const---constant
 exp---experiment
 F---fluorescence (F_{720})
 LSD---least significant difference
 nd---not determined, no data
 ns---not significant
 temp---temperature

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