

ISSN 2412-0324 (English ed. Online)
ISSN 0131-6397 (Russian ed. Print)
ISSN 2313-4836 (Russian ed. Online)

AGRICULTURAL BIOLOGY

Since January, 1966

PLANT
BIOLOGY

Vol. 51, Issue 5
September-October

2016 Moscow

EDITORIAL BOARD

I.V. SAVCHENKO (Moscow, Russia) — Chairman (plant biology)

BESPALOVA L.A. (Krasnodar, Russia)	LITVINOV S.S. (Moscow, Russia)
DRAGAVTSEV V.A. (St. Petersburg, Russia)	LUGTENBERG E.J.J. (Leiden, The Netherlands)
DZYUBENKO N.I. (St. Petersburg, Russia)	LUKOMETS V.M. (Krasnodar, Russia)
FEDOROVA L.M. (editor-in-chief) (Moscow, Russia)	PIVOVAROV V.F. (Moscow, Russia)
GONCHARENKO A.A. (Moscow, Russia)	SANDUKHADZE B.I. (Moscow, Russia)
GORBACHEV I.V. (Moscow, Russia)	SEDOV E.N. (Orel, Russia)
KHARITONOV E.M. (Krasnodar, Russia)	SHABALA S. (Tasmania, Australia)
KHOTYLEVA L.V. (Minsk, Belorussia)	TIGERSTEDT P.M.A. (Esbo, Finland)
KORPELA T. (Turku, Finland)	TIKHONOVICH I.A. (St. Petersburg, Russia)

Covered in Scopus, Web of Science (BIOSIS Previews, Biological Abstracts, Russian Science Citation Index), Agris

Science editors: E.V. Karaseva, L.M. Fedorova

Publisher: Agricultural Biology Editorial Office NPO

Address: build. 16/1, office 36, pr. Poleskii, Moscow, 125367 Russia

Tel: + 7 (916) 027-09-12

E-mail: felami@mail.ru, elein-k@yandex.ru **Internet:** <http://www.agrobiology.ru>

For citation: Agricultural Biology,
Сельскохозяйственная биология, Sel'skokhozyaistvennaya biologiya

ISSN 0131-6397 (Russian ed. Print)
ISSN 2313-4836 (Russian ed. Online)
ISSN 2412-0324 (English ed. Online)

© Agricultural Biology Editorial Office (Редакция журнала
«Сельскохозяйственная биология»), 2016

CONTENTS

<i>Bilova T.E., Ryabova D.N., Anisimova I.N.</i> Molecular basis of the dwarfism character in cultivated plants. II. DELLA-proteins: structure and functions (review)	571
<i>Dolgikh E.A., Kirienko A.N., Leppanen I.V. et al.</i> Role of phytohormones in the control of symbiotic nodule development in legume plants. II. Auxins (review)	585
<i>Zhukov V.A., Shtark O.Yu., Nemankin T.A. et al.</i> Genetic mapping of pea (<i>Pisum sativum</i> L.) genes involved in symbiosis (review)	593
<i>Ushchapovskii I.V., Lemesh V.V., Bogdanova M.V. et al.</i> Particularity of breeding and perspectives on the use of molecular genetic methods in flax (<i>Linum usitatissimum</i> L.) genetics and breeding research (review)	602
<i>Rybas' I.A.</i> Breeding grain crops to increase adaptability (review)	617
<i>Novokhatin V.V.</i> The theoretical justification of intensive genetic potential of the varieties of soft wheat	627
<i>Zhuzhzhhalova T.P., Podvigina O.A., Znamenskaya V.V. et al.</i> Sugar beet (<i>Beta vulgaris</i> L.) haploid parthenogenesis in vitro: factors and diagnostic characters	636
<i>Radenovich Ch., Maksimov G.V., Tyutyayev E.V. et al.</i> Identification of characteristic organic molecules in kernels of maize (<i>Zea mays</i> L.) hybrid grain using infrared spectroscopy	645
<i>Zverev A.O., Pershina E.V., Provorov N.A. et al.</i> Metagenomic characteristic of rhizosphere effect on cereals in black and sod-podzolic soils	654
<i>Sviridova O.V., Vorobyov N.I., Provorov N.A. et al.</i> The alignment of soil's conditions for plant's development during microbial destruction of plant's residues by microbial preparations	664
<i>Malyukova L.S., Pritula Z.V., Kozlova N.V. et al.</i> About the formation of <i>Camellia sinensis</i> (L.) O. Kuntze resistance under insufficient water supply at the root fertilization with calcium clay	673
<i>Martirosyan Yu.Ts., Dilovarova T.A., Martirosyan V.V. et al.</i> Photosynthetic apparatus of potato plants (<i>Solanum tuberosum</i> L.) grown in vitro as influenced by different spectral composition of LED radiation	680
<i>Kirillova L.L., Nazarova G.N., Ivanova E.P.</i> para-Aminobenzoic acid stimulates seed germination, plant growth, development, photosynthesis and nitrogen assimilation in the amaranth (<i>Amaranthus</i> L.)	688
<i>Akinshina N.G., Rashidova D.K., Azizov A.A.</i> Seed encapsulation in chitosan and its derivatives restores levels of chlorophyll and photosynthesis in wilt-affected cotton (<i>Gossypium</i> L., 1753) plants	696
<i>Kulikova O.G., Mal'tsev D.I., Kartashov M.I. et al.</i> Proteins from garlic <i>Allium sativum</i> L. which are active against fungal pathogens of barley, wheat and rice, and can stimulate seeds in garlic	705
<i>Bukharov A.F., Baleev D.N.</i> The appearance of the induced dormancy in seeds of some <i>Umbelliferae</i> vegetable crops under the effect of allelopathic substances	714
<i>Pakholkova E.V., Sal'nicova N.N., Kurkova N.A.</i> Genetic structure of regional populations of <i>Mycosphaerella graminicola</i> (<i>Septoria tritici</i>), the septoria leaf blotch agent of wheat	722
<i>Stepanycheva E.A., Petrova M.O., Shchenikova A.V. et al.</i> Allelochemicals: an interaction between phytophages and <i>Pseudomonas syringae</i> pv. <i>tomato</i> on tomato <i>Solanum lycopersicum</i> plants	731
<i>Semina Yu.V., Shcherbakova L.A., Slezina M.P. et al.</i> Studying the activity of <i>Chenopodium album</i> seed extracts and <i>Fusarium sambucinum</i> culture liquid against several plant pathogenic fungi	739
<i>Provorov N.A.</i> K.S. Merezhkovsky and the origin of the eukaryotic cell: 111 years of symbiogenesis theory	746

THE FIFTH INTERNATIONAL CONFERENCE ON INTEGRATION OF SCIENCE AND
TECHNOLOGY FOR SUSTAINABLE DEVELOPMENT 2016 (5th ICIST 2016)

«Water conservation, Biological Diversity, Food and Agriculture»

November 26-27, 2016, Cherry Queen Hotel, Southern Shan State, Myanmar

Contacts: myot47@gmail.com, queencherry.ns@gmail.com