

LIST OF BASIC PUBLICATIONS

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Recent publications

2012

1. Baymiev An. K., Ivanova E.S., Ptitzyn K.G., Belimov A.A., Safronova V.I., Baymiev Al.K. Genetic characterization of nodule bacteria of wild legumes living in the South Ural. *Molecular Genetic, Microbiology and Virology*, 2012, 1, 29-34.
2. Belimov A.A. Interactions between associative bacteria and plants: the role of biotic and abiotic factors. *Palmarium Acad. Publ.* 2012, 228 p.
3. Belimov A.A., Demchinskaya S.V., Safronova V.I. Response of pea to inoculation with rhizosphere ACC-utilizing bacteria in the presence of endomycorrhizal fungus *Glomus intraradices*. *Agricultural Biology*, 2012, №3, 90-97.
4. Jiang F., Chen L., Belimov A.A., Shaposhnikov A.I., Gong F., Meng X., Hartung W., Jeschke D.W., Davies W.J., Dodd I.C. Multiple impacts of the plant growth promoting rhizobacterium *Variovorax paradoxus* 5C-2 on nutrient and ABA relations of *Pisum sativum*. *Journal of Experimental Botany*, 2012, 63, 6421-6430.
5. Khudyakov I.Y. Developmental genetics and symbiotic potential of cyanobacteria. *Ekologicheskaya genetika*. 2012. Vol. X, № 4, 14-28 (In Russian).
6. Safronova V.I., Piluzza G., Bullitta S., Belimov A.A. Use of legume-microbe symbioses for phytoremediation of heavy metal polluted soils: advantages and potential problems (Review). In: *Handbook for Phytoremediation*, Golubev I.A. (Ed.), NOVA Sci. Publ., USA, 2011, p. 443-469.
7. Safronova V.I., Piluzza G., Zinovkina N.Y., Kimeklis A.K., Belimov A.A., Bullitta S. Relationships between pasture legumes, rhizobacteria and nodule bacteria in heavy metal polluted mine waste of SW Sardinia. *Symbiosis*, 2012, DOI 10.1007/k13199-012-0207-x.
8. Shakhnazarova V.Yu., Feoktistova A.S., Chizhevskaya E.P., Vishnevskaya N.A., Strunnikova O.K. Optimization of DNA extraction for *Fusarium culmorum* identification and quantification in barley and wheat roots with PCR. *Mikologiya i Fitopatologiya*, 2012, 46, 4, 287–292 (in Russian).

2011

1. Belimov A.A., Safronova V.I. ACC deaminase and plant-microbe interactions (review). *Agricultural Biology*, 2011, 3, 23-28 (in Russian).
2. Belimov A.A., Tikhonovich I.A. Microbiological aspects of resistance and accumulation of heavy metals by plants (review). *Agricultural Biology*, 2011, 3, 10-15 (in Russian).
3. Chebotar' V.K., Petrov V.B., Shaposhnikov A.I., Kravchenko L.V. Biochemical criteria for estimation of agronomic valuable properties of bacilli used for development of microbial preparations. *Agricultural Biology*, 2011, 3: 119-122 (in Russian).
4. Egamberdieva D., Kucharova Z., Davranov K., Berg G., Makarova N., Azarova T., Chebotar V., Tikhonovich I., Kamilova F., Validov S., Lugtenberg B. Bacteria able to control foot and root rot and to promote growth of cucumber in salinated soil. *Biology and Fertility of Soils*. 2011, 47, 197-205.
5. Kravchenko L.V., Shaposhnikov A.I., Makarova N.M., Azarova T.S., L'vova K.A., Kostyuk I.I., Tikhonovich I.A. Characterization of the root exudates in plant species and its

- changes in rhizosphere under the influence of soil microorganisms. *Agricultural Biology*, 2011, 3, 71-75 (in Russian).
6. Kravchenko L.V., Shaposhnikov A.I., Makarova N.M., Azarova T.S., L'vova K.A., Kostyuk I.I., Lyapunova O.A., Tikhonovich I.A. Exometabolites of bread wheat and tomato Affecting the plant-microbe interactions in the rhizosphere. *Russian Journal of Plant Physiology*, 2011, 58, 5: 936-940.
 7. Safronova V.I., Chizhevskaya E.P., Belimov A.A., Pavlova E.A. Taxonomy of micro symbionts of *Hedysarum* and *Astragalus* basing on ribosomal RNA genes sequencing. *Agricultural Biology*, 2011, 3, 10-15 (in Russian).
 8. Safronova V.I., Piluzza G., Bullitta S., Belimov A.A. Use of legume-microbe symbioses for phytoremediation of heavy metal polluted soils: advantages and potential problems (Review). In: *Handbook for Phytoremediation*, Golubev I.A. (Ed.), NOVA Sci. Publ., USA, 2011, p. 443-469.
 9. Shaposhnikov A.I., Belimov A.A., Kravchenko L.V., Vivanco J.M. Interactions of rhizosphere bacteria with plants: mechanisms of generation and factors of efficiency in associative symbiosis (review). *Agricultural Biology*, 2011, 3, 16-22 (in Russian).
 10. Shaposhnikov A.I., L'vova K.A., Bodyagina K.B., Zhuravleva E.V., Safronova V.I., Belimov A.A. Improvement of tolerance of potato to water deficit and extreme temperatures by associative rhizobacteria. Proc. Int. Conf. "System of high-yielding agriculture and biotechnology as an innovative modernization of agriculture to climate change", 16-17 Mar., 2011, Ufa, p. 162-170 (in Russian).
 11. Strunnikova O.K. Study of *Fusarium culmorum* development in soil for search protective actions against barley root rot. *Agricultural biology*, 2011, 3, 98-101 (in Russian).
 12. Strunnikova O.K., Feoktistova A.S., Vishnevskaya N.A., Chebotar V. K. Role competition between *Pseudomonas fluorescens* 2137GUS and *Fusarium culmorum* colonization of barley roots. *Mikologiya i Fitopatologiya*, 2011, 45, 4, 362-369 (in Russian).
 13. Tikhonovich I.A., Kravchenko L.V., Shaposhnikov A.I. Root exudates as an important factor of formation of nanomolecular structures of the rhizosphere. *Russian Agricultural Sciences*, 2011, 37, 1: 40-42.

Interactions of plants with beneficial microorganisms

9. Archipchenko I.A., Belimov A.A., Vasiliev V.B. Distribution of nitrogen, phosphorus and potassium during aerobic processing of the swine fattening unit sewage. *Proc. Acad. Sci. Soviet Union*, 1987, 6, 894-901 (in Russian).
10. Barbolina I.I., Kravchenko L.V., Arkhipchenko I.A. Utilization of tryptophane from organic fertilizers for indolil-3-acetic acid biosynthesis. *Agricultural Biology*, 1999, 3: 87-90 (in Russian).
11. Belimov A.A., Dietz K.-J. Effect of associative bacteria on element composition of barley seedlings grown in solution culture at toxic cadmium concentrations. *Microbiological Research*, 2000, 155 (II), 113-121.
12. Belimov A.A., Dodd I.C., Hontzeas N., Theobald J.C., Safronova V.I., Davies W.J. Rhizosphere bacteria containing ACC deaminase increase yield of plants grown in drying soil via both local and systemic hormone signalling. *New Phytologist*, 2009, 181, 413-423.
13. Belimov A.A., Dodd I.C., Safronova V.I., Davies W.J. ACC deaminase-containing rhizobacteria improve vegetative development and yield of potato plants grown under water-limited conditions. *Aspects of Applied Biology*, 2009, 98, 163-169.
14. Belimov A.A., Dodd I.C., Safronova V.I., Hontzeas N., Davies W.J. *Pseudomonas brassicacearum* strain Am3 containing 1-aminocyclopropane-1-carboxylate deaminase can show both pathogenic and growth-promoting properties in its interaction with tomato. *Journal of Experimental Botany*, 2007, 58, 1485-1495.

15. Belimov A.A., Hontzeas N., Safronova V.I., Demchinskaya S.V., Piluzza G., Bullitta S., Glick B.R. Cadmium-tolerant plant growth-promoting bacteria associated with the roots of Indian mustard (*Brassica juncea* L. Czern.). *Soil Biology and Biochemistry*, 2005, 37, 241-250.
16. Belimov A.A., Ivanchikov A.Y., Yudkin L.V., Khamova O.F., Postavskaya S.M., Popolzukhin P.V., Shmakova A.A., Kozlova G. Y. New strains of associative growth-stimulating bacteria dominating the rhizoplane of barley seedlings: characterization and introduction. *Microbiologiya*, 1999, 68, 3, 337-342.
17. Belimov A.A., Ivanchikov A.Yu., Vorobyev N.I. The effect of predominant microflora of the barley rhizoplane on the interaction between introduced diazotrophs and the plant. *Microbiologiya*, 1998, 67, 3, 340-345.
18. Belimov A.A., Kozhemiakov A.P. Use of mixed cultures of nitrogen fixing bacteria in agriculture. *Agricultural Biology*, 1992, 5, 77-87 (in Russian).
19. Belimov A.A., Kozhemyakov A.P., Chuvarliyeva G.V. Interaction between barley and mixed cultures of nitrogen fixing and phosphate solubilizing bacteria. *Plant and Soil*, 1995, V. 173, p. 29-37.
20. Belimov A.A., Kunakova A M, Safronova V.I., Kozhemyakov A.P., Yudkin L.Y., Stepanok V.V. Interaction between associative bacteria and barley under environmental stresses: input of partner genotypes and growth conditions. In: *New Approaches and Techniques in Breeding Sustainable Fodder Crops and Amenity Grasses*, Eds: Provorov A.N. et al., "VIRA" Press, St-Petersburg, 2000, p. 146-148.
21. Belimov A.A., Kunakova A M, Vasilyeva N.D., Kovatcheva T.S, Dritchko V.F., Kuzovatov S.N., Trushkina I.R., Alekseyev Yu.V. Accumulation of radionuclides by associative bacteria and the uptake of ¹³⁴Cs by the inoculated barley plants. In: *Nitrogen Fixation with Non-Legumes*. Eds.: K.A.Malik et al., Kluwer Acad. Publ., 1998, p. 275-280.
22. Belimov A.A., Kunakova A.M., Alekseyeva E.G., Martsinkevitch O.N., Kojemyakov A.P. Survival of associative fitrogen fixers in rhizoplane as a criterion for estimation of their effect on the inoculated plants. In: *Azospirillum and related microorganisms*. NATO AS Series. Eds: Fendric I. et al., 1995, 535-542.
23. Belimov A.A., Kunakova A.M., Gruzdeva E.V. Influence of soil pH on the interaction of associative bacteria with barley. *Microbiologiya*, 1998, 67, 4, 463-469.
24. Belimov A.A., Kunakova A.M., Gruzdeva E.V., Vasilyeva N.D., Vorobyev N.I., Kojemyakov A.P., Khamova O.F., Postavskaya S.M., Sokova S.M. Relationship between survival rates of associative nitrogen fixers on roots and yield response of plants to inoculation. *FEMS Microbiology Ecology*, 1995, 17, 187-196.
25. Belimov A.A., Kunakova A.M., Safronova V.I., Stepanok V.V., Yudkin L.Y., Alekseev Y.V., Kozhemyakov A.P. Employment of rhizobacteria for the inoculation of barley plants cultivated in soil contaminated with lead and cadmium. *Microbiologiya*, 2004, 73, 99-106.
26. Belimov A.A., Postavskaya S.M., Khamova O.F., Kozhemiakov A.P., Kunakova A.M., Gruzdeva E.V. Effect of inoculation of barley with diazotrophic bacteria and their survival depending on soil moisture and temperature. *Microbiologiya*, 1994, 63, 900-908 (in Russian).
27. Belimov A.A., Safronova V.I., Demchinskayaa S.V., Dzyuba O.O. Intraspecific variability of cadmium tolerance in hydroponically grown Indian mustard (*Brassica juncea* (L.) Czern.) seedlings. *Acta Physiologia Plantarum*, 2007, 29, 473-478.
28. Belimov A.A., Safronova V.I., Mimura T. Response of spring rape to inoculation with plant growth-promoting rhizobacteria containing 1-aminocyclopropane-1-carboxylate deaminase depends on nutrient status of the plant. *Canadian Journal of Microbiology*, 2002, 48, 189-199.
29. Belimov A.A., Safronova V.I., Sergeyeva T.A., Egorova T.N., Matveyeva V.A, Tsyganov V.E., Borisov A.Y., Tikhonovich I.A., Kluge C., Preisfeld A., Dietz K.-J., Stepanok V.V.

- Characterisation of plant growth-promoting rhizobacteria isolated from polluted soils and containing 1-aminocyclopropane-1-carboxylate deaminase. *Canadian Journal of Microbiology*, 2001, 47, 642-652.
30. Belimov A.A., Safronova V.I., Tsyganov V.E., Borisov A.Y., Kozhemyakov A.P., Stepanok V.V., Martenson A.M., Gianinazzi-Pearson V., Tikhonovich I.A. Genetic variability in tolerance to cadmium and accumulation of heavy metals in pea (*Pisum sativum* L.). *Euphytica*, 2003, 131, 25-35.
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 32. Belimov A.A., Safronova V.I., Tsyganov V.E., Borisov A.Y., Stepanok V.V., Naumkina T.S., Serdyuk V.P. Garden pea: tolerance to cadmium and uptake of heavy metals from soil by pea plants. *Catalogue of the World Collection of VIR*. VIR Press, St-Petersburg, 2003, №729, 23 p.
 33. Belimov A.A., Serebrennikova N.V., Stepanok V.V. Interaction of associative bacteria and an endomycorrhizal fungus with barley upon dual inoculation. *Microbiologiya*, 1999, 68, 1, 104-108.
 34. Belimov A.A., Wenzel W.W. The role of rhizosphere microorganisms in heavy metal tolerance of higher plants. *Aspects of Applied Biology*, 2009, 98, 81-90.
 35. Bezverkhova N.V., Safronova V.I., Antonyuk L.P., Belimov A.A. Involvement of the bacterium *Azospirillum brasilense* in wheat tolerance to cadmium. In: *Metal Ions in Biology and Medicine: vol. 7*. Eds: L. Khasanova et al., John Libbey Eurotext, Paris, 2002, p. 268-271.
 36. Chebotar' V.K., Makarova N.M., Shaposhnikov A.I., Kravchenko L.V. Antifungal and phytostimulating characteristics of *Bacillus subtilis* Ch-13 rhizospheric strain, producer of biopreparations // *Applied Biochemistry and Microbiology*, 2009, 45, 4: 419-423 (translated from Russian).
 37. Dodd I.C., Belimov A.A. Agricultural opportunities for ACC deaminase-containing rhizobacteria: a review. *Aspects of Applied Biology*, 2009, 98, 151-156.
 38. Dodd I.C., Belimov A.A. Rhizobacterial impacts on plant water use efficiency *Aspects of Applied Biology*, 2010, 105, 31-37.
 39. Dodd I.C., Belimov A.A., Sobeih W.Y., Safronova V.I., Grierson D., Davies W.J. Will modifying plant ethylene status improve plant productivity in water-limited environments? *Proc. 4th Int. Crop Sci. Congr.*, 26 Sept. - 1 Oct., 2004, Brisbane, Australia, <http://www.cropscience.org.au>.
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45. Hontzeas N., Richardson A.O., Belimov A.A., Safronova V.I., Abu-Omar M.M., Glick B.R. Evidence for horizontal transfer of 1-aminocyclopropane-1-carboxylate deaminase genes. *Applied and Environmental Microbiology*, 2005, 71, 7556-7558.
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51. Kravchenko L.V., Azarova T.S., Leonova-Erko E.I., Shaposhnikov A.I., Makarova N.M., Tikhonovich I.A. Root exudates of tomato plants and their effects on the growth and antifungal activity of *Pseudomonas* strains. *Microbiology*, 2003, 72, 1, 37-41 (translated from Russian).
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68. Safronova V.I., Belimov A.A., Chizhevskaya E.P. Identification of nodule bacteria of *Asrtagalus* and *Hedysarum* by sequencing 16S rRNA gene. Proc. VI Int. Conf. «Current state and prospects for development of microbiology and biotechnology», Minsk, 2-6 June, 2008, V.1, p. 118-120.
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71. Safronova V.I., Stepanok V.V., Engqvist G.L., Alekseyev Y.V., Belimov A.A. Root-associated bacteria containing 1-aminocyclopropane-1-carboxylate deaminase improve growth and nutrient uptake by pea genotypes cultivated in cadmium supplemented soil. *Biology and Fertility of Soils*, 2006, 42, 267-272.
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73. Strunnikova O., Vishnevskaya N., Muromtsev G. Abundance of mycelium and microsclerotia as indices of the soil status of *Verticillium dahliae*. In: *Advance in Verticillium Research and Disease Management*. Tjamos E.C. et al., eds. APS Press, St.Paul. Minnesota, 2000. p. 125-128.
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75. Tsyganov V.E., Belimov A.A., Borisov A.Y., Safronova V.I., Georgi M., Dietz K.-J., Tikhonovich I.A. A chemically induced new pea (*Pisum sativum* L.) mutant SGECdt with increased tolerance to and accumulation of cadmium. *Annals of Botany*, 2007, 99, 227-237.
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Interactions of plants with phytopathogens

1. Strunnikova O.K., Vishnevskaya N.A. Development of phytopathogenic fungus *Verticillium dahliae* Kleb. in the soil. Mikologiya i Fitopatologiya, 1995, 29, 2, 59–63 (in Russian).
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3. Strunnikova O.K., Shakhnazarova V.Yu., Vishnevskaya N.A., Muromtsev G.S. Use of membrane filters and immunofluorescent staining for observation of the development of soil micromycetes. Mikologiya i Fitopatologiya, 1998, 32, 2, 65–72 (in Russian).
4. Shakhnazarova V.Yu., Strunnikova O.K., Vishnevskaya N.A. Effect of soil water contact on the development of *Fusarium culmorum*. Mikologiya i Fitopatologiya, 1999, 33, 1, 53–59 (in Russian).
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