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## Screening of salt resistant isolate of nodules bacteria of alfalfa

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**S** oil salinization caused by application of outdated irrigation methods and expansion of arid areas and techno polluted territories is one of most vital problems of modern agriculture. Currently about 40% of lands, including irrigated fields are over-mineralized. To increase re-cultivation efficiency of salinized soils recent studies have been focused on isolation of halo-tolerant bacteria and screening of salt-resistant cultivars to derive plant-microbial associations. Alfalfa (*Medicago sativa* L.) is perennial forage legume with moderate salt tolerance that can be used for remediation of salt-affected soils. In turn, nodulating bacterial strains are essential to promote plant growth and ensure efficient symbiosis under saline conditions. Among isolates of nodulating bacteria recovered from roots of large, well-developed alfalfa plants, 39 variants were capable to grow on TY medium containing up to 300 mM NaCl. 11 isolates generated nodules on alfalfa roots *in vitro*. We selected strain *Ensifer meliloti* S3-2 forming large elongated pink nodules *in vitro* in the media comprising 50 mM NaCl. It stimulated seed germination and development of alfalfa sprouts in saline media (NaCl concentration 100 mM) by 17% and 34%, respectively. The selected strain may be a promising active ingredient of microbial preparation used to promote growth and development of alfalfa under moderate salinization conditions.

## **Biography**

A Fedorenchik was awarded an MSc degree at Department of Biology, Belarusian State University. Currently she is completing PhD thesis "Microbial-plant association to increase the productivity and sustainability of *Medicago sativa*" and holding a position of Junior Researcher at the Institute of Microbiology National Academy of Science Belarus. Her research interests are investigation of interaction mechanisms between soil bacteria and higher plants, legume symbiosis, nodulating bacteria of alfalfa, PGRP bacteria, phyto-remediation of degraded, polluted and salinized soils, elaboration of technologies for production of bio-inoculants promoting harvests of legumes. Her research findings are summarized in 31 publications.

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