Postgraduate Course

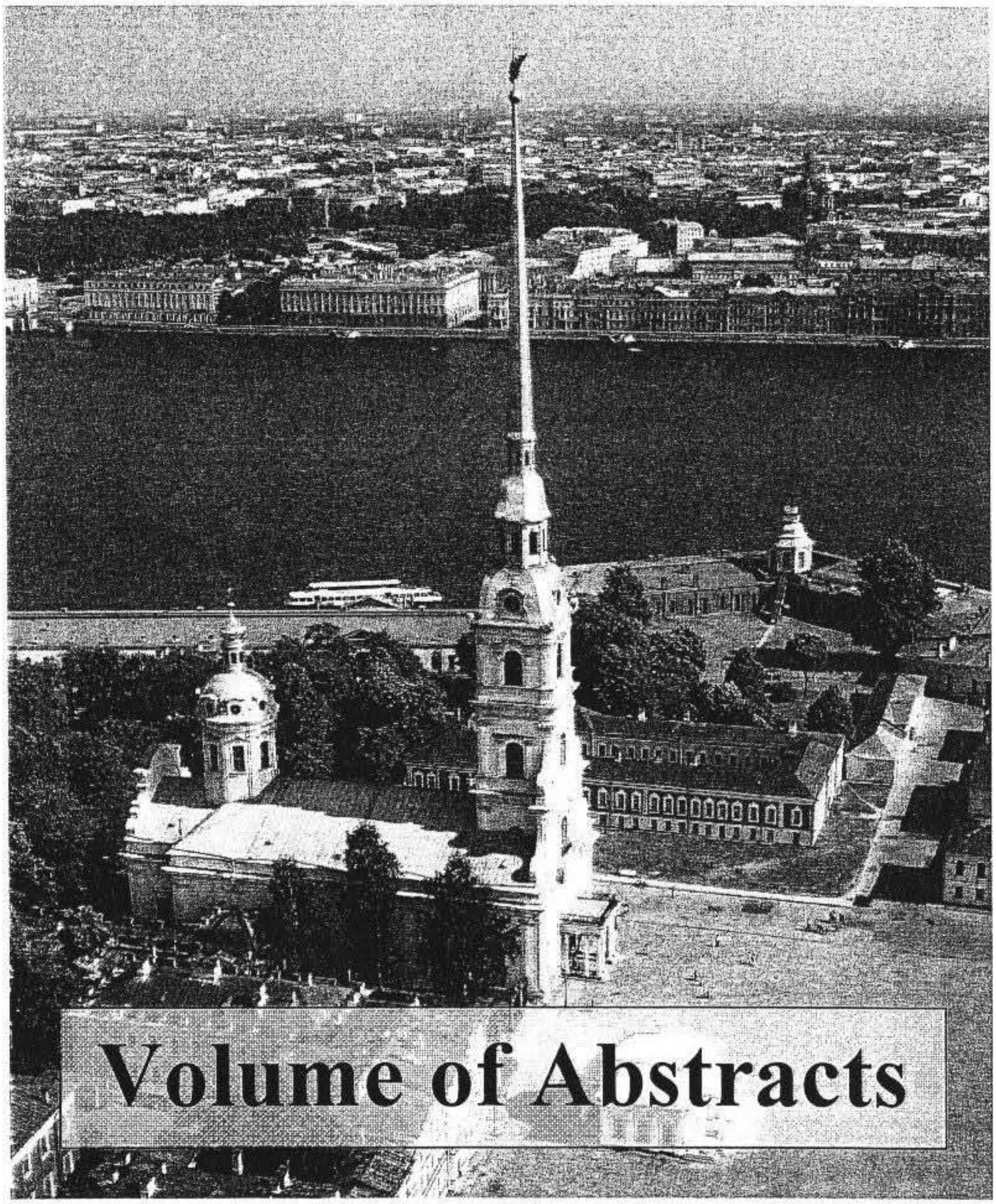
"APPLIED AND FUNDAMENTAL ASPECTS OF RESPONSES, SIGNALING AND DEVELOPMENTAL PROCESS IN THE ROOT-MICROBE SYSTEMS"

and

Meeting of the Research Consortium on

EVOLUTION OF PLANT-MICROBE INTERACTIONS

St.-Petersburg, Russia, June 25 – July 2, 2007



Volume of Abstracts

Symbiotic efficiency of black medic (*Medicago lupulina* L.) and arbuscular - mycorrhizal fungus (*Glomus intraradices*): approaches to study of mechanism and selection

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Arbuscular mycorrhiza (AM) plays a key role in plant adaptation to low available phosphorus (P_i) in soil. In order to study the mechanisms controlling AM-efficiency, at the present research the suitable hosts were selected. The effects of AM colonization on morphometrical and biochemical characteristics of black medic, *Medicago lupulina* (S9m2 line from cultivar-population VIC32) at the controlled environment were estimated. We determined that mycorrhization is visible on the 7th day after sowing. The first positive response to inoculation is evident ($P<0.05$) on the 14th day after sowing for P-content in shoots, leaf size and the number of leaves. The response in dry matter is evident ($P<0.05$) on the 21st day after sowing. S9m2 plants without AM have a dwarf symptom under low P_i in soil. On a balance we concluded that S9m2 line can be convenient test object for studying AM-efficiency by making symbiotic-defective plant mutants.

The plant genotypes with high and low AM efficiency based on different characteristics for productivity were selected in wild-growing population black medic – p. Pavlovskaya (Leningradskaja region). We determined that the variations for characteristics of AM-efficiency in 45 lines have a wide range, especially for dry mass of shoots (+58…1241%) and height of shoots (+14…1606%) to eight weeks after sowing. This experiment showed the actual opportunity for breeding of the symbiotically active cultivars.

Supported by RFBR (RFBR-ofr №06-04-08268), CRDF ST-012 and Russian Ministry of Education.

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