

*Materials of Conferences***TOXIGENIC MYXOMYCETES  
OF LIGHT-CHESTNUT SOILS  
OF SOUTH VOLGA**Gorbunova I.F.  
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At the light-chestnut soils of South Volga there are widely spread the types of genera *Penicillium* and *Aspergillus*, reaching 60% from the whole number of selected myxomycetes. The rest of soil mushrooms is distributed among 18 genera: g. *Mortierilla*, g. *Verticillium*, g. *Gliocladium* and others. The types of genera *Penicillium* and *Aspergillus* reveal antagonism with respect to azotobacter in 50 and 70% correspondingly. Among the other genera of soil there are considerably less number of mushrooms antagonists. Among the types of the genus *Aspergillus* the most wide spreading there have types *Aspergillus niger* v. *Thegh*, *A. fumigatus* Fres., *A. sydowii* (Bain. et Sart.) Thom et Church. Almost all types of this genus includes antagonists az. The biggest percent of antagonists was in types *A. niger* v. *Thegh* – 100%, *A. fumigatus* Fres – 50%, *A. alliaceus* Thom et Church – 60%, *A. flavus* Lk. – 65%, *A. wentii* Wehm. – 60%. The least number of antagonists was revealed at the isolates of the types *A. sydowii* (Bain. et Sart.) Thom et Church, *A. flavipes* (Bain. et Sart.) Thom et Church, *A. ustus* (Bain.) Thom (12%). But it makes itself conspicuous, that the maximal diameter of the zone of suppression of the height of azotobacter 9,7 mm is character for the isolates of the type *A. flavipes* (Bain. et Sart.) Thom et Church, while the isolates of the type *A. niger* v. *Thegh*, *A. fumigatus* Fres. Have 7,4 mm.

The phenomenon of phytotoxicity, which is revealed by separated isolates of micromycetes not always coincide with antagonism to the azotobacter. To the most strong antagonists there are involved *A. fumigatus* Fres, *A. alliaceus* Thom et Church, *A. flavus* Lk., as suppressing of the azotobacter's height and detaining of the winter wheat's germination. By our facts *A. alliaceus* Thom et Church, which is separated also from other ecological zones of light-chestnut soils preserves toxic behavior.

Mechanic erosion rise the general number of micromycetes in the soil especially the types of genera *Penicillium* and *Aspergillus*. Micromycetes of the genus *Mortierilla* M. *alpina* Peyronel reveal sensitivity to the compaction of the soil and can

be used as indicators of the ecological condition of the soil.

The use of heavy machines leads to the increase of the whole number of micromycetes in the soil, it especially reveals at the initial phases of the plants' development. At the compacted by the agricultural machines soil there increases the content of mushrooms – antagonists to the 20% in comparison with the control, there decreases the whole biological activity and harvest of barley. But introduction of organic fertilizers restores the ecological environment.

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Modern world economic situation is connected with the developing of scales of industrial and agri-culture manufacture. The progress of modern civilization is conditioned by the use of electricity; its producing at the majority of countries every 7–10 years doubles, meanwhile the big part of electricity is outputted by thermal power station.

Existing technologies of producing the electricity at the thermal power stations cause damage to nature and human being as the result of pollution of environment. While the projecting and building of thermal power stations in Russian Federation the economic calculations traditionally take into consideration only the effectiveness of capital investment into a prospecting, exploitation of deposits and technological process of burning the fuel. But at every stage of producing the energy at the fossil fuel – while the prospecting, production, processing, transportation, deposit, burning of coal, warehousing of slag – there are formed different polluting substances, which come in the environment and are involved into global biogeochemical processes.

The estimation of economical effectiveness of producing the energy at the coal and other fossil