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Materials  
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# **Biodiversity. Ecology. Adaptation. Evolution**

dedicated to 180th anniversary  
from the birth of famous physiologist  
**Ivan Sechenov**  
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We know cases when breakdown of equipment open switching centres led to unloadings and even stops of power units of the APP. Such events in APP work are extremely undesirable.

Last years quantity of breakdowns of an electric equipment, caused by birds grow. According to database of atomic research institute in 1987-2007 on the Russian APP there were 11 incidents which birds were offenders.

The analysis of daily and seasonal spread of birds on inspected territory is very important for forecasting of an ornithological situation.

With that in view on the explored APP carried were the ecologo-ornithological investigations including: routing and areal counts of birds, accounts of birds on places of congestions, accounts of flying birds in a unit of time.

The obtained data are used in definition of the most effective methods, devices and the plants applied to protection of object against biodamage.

According to our research, the greatest problem for air-lines 110-330 KV is created by Ciconiidae and Corvidae, especially during the nesting period.

Unfortunately, quite often birds perish, getting under electric current action.

For an exception of influence of biodamaging activity of birds for APP work, the complex approach is required. First of all protective measures should be taken for an equipment projection stage.

Modern conditions of co-existence of a human society and the nature demand a careful attitude to animals. Electronic acoustic repellents correspond to such approach completely. Among acoustic repellents application of a hardware-software complex is most perspective. Use of optical repellents is also efficient.

It is important, that efficiency of any repellents considerably decreases in the presence of a come-at-able forage reserve, in immediate proximity to protected object.

#### **BIOLOGICAL EFFECTIVENESS OF BACTERIAL INSECTICIDES AGAINST GYPSY MOTH UNDER LABORATORY CONDITIONS**

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Gypsy moth (*Ocneria dispar* L.) is the serious pest of bright woods and fruit gardens of Armenia.

With the aim to extend the species composition of high-performance bacterial preparations a goal was set to test against the gypsy moth caterpillars of all ages (I-II, III-IV, V-VI) under laboratory conditions in 2008-2009 the commercial preparation lepidocide (BE - 3000 AU/mg, tablets), the strains of the Institute of Biotechnology of Republic of Armenia (BT κ6-1, BT κ6-2) as well as the insecticide strains (BT(SAR)-49), BT(SAR)-54), BT(SAR)-86) of *Bacillus thuringiensis* (BT) species, isolated from the biocenosis (dead caterpillars) by us.



Against the phytophage the 0.2 % water suspension of lepidocide and culture liquids of strains with titre  $4.5 \times 10^7$  -  $4.7 \times 10^7$  have been tested.

BTB (BE - 1500 AU/mg, powder) as standard and populated by pests but nonsprayed 15-20 centimetre-long twigs of oak as control have been used.

Experiments were conducted according to operating instructions. The calculations of living and dead caterpillars have been conducted after 3, 7, 10 and 15 days of spraying as well as up to the caterpillar pupation.

The two-year experiments have led us to the assumption that tested insecticides reveal the highest biological effectiveness against phytophage after 10 days of spraying. Pest caterpillars of I-II age were the most susceptible and caterpillars of V-VI age were comparatively steady to the influence of insecticides. Two-year average indices of revealed biological effectiveness of bacterial insecticides against caterpillars of I-II, III-IV and V-VI ages in the mentioned term fluctuated in the ranges 90.0-96.0, 74.6-85.3 and 58.0-76.6 %, respectively. The biological effectiveness indices up to the caterpillars' pupation haven't undergone to any substantial alterations.

Lepidocide, BT(SAR)-49 and lepidocide show the highest biological effectiveness against young, middle and senior ages of caterpillars, respectively, and insecticides BT κ6-2, BT κ6-2 and BT κ6-1, respectively, have comparatively low effectiveness.

The standard preparation against pest caterpillars of different ages displayed biological effectiveness of 67.3 % (V-VI age) and 93.3 % (I-II age) after 10 days of spraying.

By means of Student's  $t_{test}$  it has been established that there aren't any significant differences between the biological effectiveness displayed by experimental and standard variants. After the testing of aforesaid insecticides of BT species against I-II age caterpillars of phytophage in the woodlots the most effective preparations will be chosen and suggested to industry as effective means for gypsy moth control.

#### **ABOUT FAUNA OF COLEOPTERA ON THE SAND SPITS IN THE NORTH-WESTERN PART OF THE BLACK SEA SHORE**

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One of the components, which conditions landscape diversity of the South of Ukraine, is sand spits - the deposition landform found off coasts. Sand spit (or peresyp) is a narrow strip of land dividing estuaries or lakes from the sea. That land has poor but very peculiar flora and fauna.

The fauna of insects (fauna of Coleoptera inclusive) of sand spits in the North-Western part of Black Sea is insufficiently explored unlike the fauna of sand spits and island of the Black Sea and Azov Sea (Kinburn Spit, Tender Spit, Berdyansk Spit, Biryuchy Spit, Jarylgach Island).