
INSECTS - THE BEST OF SOILS MELIORATORS

Kuharuk Ecaterina, Burghelea A., Cojocaru Olesea,
Rusnac V., Panus A., Veliscu A.

Institute of Pedology, Agrochemistry and Soil Protection
«N. Dimo», Chisinau, Moldova
E-mail: ecostrategii@yahoo.com

Effect on soil small invertebrate animals, including insects, is very large. This was first noticed by Darwin. In Moldova, a great contribution in the development of science pedozoology introduced Nicholas Dimo, who studied in detail the life and work of ants, their impact on the soil. N. Dimo in 1955 published a book, «Observations and studies on soil fauna», which summed up his long-term supervision. In the soil of a large number of live insects (beetles, ants, etc.), which have a great influence on the process of soil formation. By doing numerous passages in the soil, they loosen the soil and improve its physical properties and water. Insects, actively participating in the recycling of crop residues, enrich the soil with humus and minerals.

Ant mounds are often found in a small area. Moving into the space, there are ant hills for centuries. For many decades we have seen nests in the forest park zone Valea - Morilor. Scientists have proved that the allocation of ants, affects the pH of the soil. They themselves have a slightly alkaline. Acidic and neutral soils alkalize ants, and strongly alkaline, the pH decrease. This has implications for the soil and for plants that prefer a response that is close to neutral. Nests do not occur in contaminated soils, so we can assume that this is one of the indicators of eco-friendly environment. Ant life flows on its established laws, it is interesting and complex. But, of course, the ants are of great use and need to be nurtured and protected.

On sandy soils, where strolling livestock (Grounds Motocross - the closest point of our observations) occurs beetle - beetle (*Ceratophius polyceros*). This beetle is found only on sandy soils, digging deep wells in them (mines), reaching up to 160 - 170 cm in depth. On the surface of the soil, these wells are summarized under the pile of manure of animals. Then the well perpendicularly to the depth omitted and only its center portion has 1 - 3 short horizontal branch. They probably intended to protect the well from crumble and sand filling. At a depth of 150 - 160 cm, the central well is branched into the barrel 3 - 4 blunt horizontal process, filled with manure, mixed with sand. They humus reaches from 9 to 17%, whereas in the uppermost soil layer itself does not exceed 1%. Activity of dung in the soil causes the formation of lenses, highly enriched in organic matter. In themselves these lenses and they are always observed near plant roots concentration is significantly greater than in the surrounding soil mass. The lenses kind of «suppliers» of nutrients for plants. Beetles - dung beetles are found on the banks of the rivers of Moldova, sea coasts and oceans. A wide variety of insects we find in the forest parks in Chisinau. In agrocenoses generated beetles an ex-

tensive void contributes to increased permeability of the soil, thereby improving the physical structure and improves agronomic properties.

Soil is housing and shelter for many organisms, it prevents from overheating, and from exposure to cold, protects from predators, living on earth's surface. The soil can serve as a shelter, due to the fact that temperature and humidity in it are much less susceptible to sharp fluctuations than on earth's surface. This soil feature is especially useful during abrupt weather changes' periods that mark Moldova's spring and autumn.

Actively use the land as a dwelling, many insects. Many invertebrates are widely used as dwelling burrows of certain rodents. So, in burrows of ground squirrels, except the owners, live spiders, woodlice, flies, beetles. In the cold season here is their winter refuge, and in the summer – a place of salvation from the heat. Fleas, flies and some beetles there and reproduce by laying eggs in the dung gophers. Many insects are held in the soil only a certain phase of development. For example, cicadas lay their eggs under the bark of thin twigs or leaf cuttings. The larva of the same after their exit from the egg falls to the ground and burrow into the soil often to a depth of 1 m, where is their further development.

The cases considered the use of soil as a “dwelling” suggests that the fourth (by V. V. Dokuchaev) kingdom of nature can be compared to the densely populated underground city where they live and its permanent residents, and those who work in the suburban area (for food on the ground), and those who are in the soil, only a limited time, as its guest.

The soil is capable of self-purification of her unusual microorganisms – that it's sanitary function. Therefore, violation of environmental protection under the influence of various toxicants represents a threat to all of the soil fauna, violates the biodiversity in ecosystems.

Thus, not only insects pests not only pollinators, not only the creators of these unique products like honey bees wax, propolis, etc., and endowed with builders and irrigators. In the description of the soil profile, soil scientist writes necessarily the presence of wildlife which may suggest a number of important points in the study.

We believe that it is necessary to enter the soil zoology in a compulsory subject, students of specialty «soil science», «ecology». No need to beliefs about the importance of the educational upbringing of the younger generation to protect insects. Thousands of farmers in our republic of Moldova are required to get the basics of zoology; environmental ethics should be incorporated in the heart of every citizen of our country.