

channel of collimator provides significant increase in output of reference radiation from target simultaneously decreasing unneeded parts of the spectrum.

To decrease flux of thermal neutrons using borated polyethylene is recommended.

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THE INSECTS – VISITORS OF MALVA ALCEA L. IN BELARUS

Analysing of anthophilous insects communities has a great significance in the process of studying of the symbiotic relationship between pollinators and plants. Anthophilous insects as pollinators play an important role in the pollination and seed reproduction of plants. Pollinators can provide the efficiency of seed production process in many different ways. Studying the species composition of pollinators of any particular plant may help in predicting similar results during studying of another plant from this family or genus.

Malva alcea L. is an introducent in Belarusian flora. Thereby studying of pollinators' community may help in the process of analyzing interspecies communication between different similar to *Malva alcea* L. plants during the process of introduction process of *Malva alcea* L. to our flora.

The collecting of insects was held during July, 2016. Insects were caught on the territory of the botanical garden of biology faculty of BSU, Minsk. Insects were caught one by one in the moment of visiting the inflorescence of *Malva alcea* L., then they were placed in the tubes with alcohol for pollen cargo analysis. The taxonomic identification has been established with the key.

Malva alcea L. is a plant in the mallow family native to southwestern, central and eastern Europe, also it can be found in southwestern Asia. It is a herbaceous plant growing to 125 cm tall. The flowers appear singly in summer to early autumn. They are about 6 cm in diameter, usually with five sepals and five bright pink petals. This plant is the most common in drier soils in thickets, along paths, in waste places. *Malva alcea* L. can make natural hybrids with the closely related *Malva moschata* L. In central Europe it can grow at altitudes of up to 2,000 m.

We found 5 species of Hymenoptera – visitors of inflorescences of malva, which are listed in the following diagram:

Family	Genus	Species
Apidae	Bombus	<i>Bombus terrestris</i> L.
		<i>Bombus hypnorum</i> L.
		<i>Bombus lapidarius</i> L.
Anthophoridae	Tetralonia	<i>Tetralonia macroglossa</i> Rossi
Halictidae	Halictoides	<i>Halictoides dentiventris</i> Nylander

Species of genus *Bombus* are polythrophic pollinators of flowering plants, *Tetralonia macroglossa* Rossi were registered on Malvaceae plants only in other places, *Halictoides dentiventris* Nylander prefer to visit inflorescences of plants from Campanulaceae family.

All of these species were registered on the inflorescences of malva for the first time in Belarus.

In this way, there were 5 species of Hymenoptera marked as visitors of the inflorescences of *Malva alcea* L., which belong to the Apidae, Anthophoridae and Halictidae families. In the future we are planning to continue our research, including pollen cargo analysis.

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EVALUATION ABSORBED DOSES IN GENERATIVE ORGANS POPULATIONS OF SCOTS PINE IN NAROVLYANSKY AND FORESTRY VIETKA

The purpose of research – evaluation of absorbed doses in the generative organs of pine populations in Narovlya Vetka forestry. Studied experimental plots are contrasting level of radioactive contamination, but the background on the physico-chemical properties and heavy metal contamination. The largest contribution to the absorbed dose plant generative organs makes ^{137}Cs . Dose rate in experimental plots ranged from 7 to 140 mGy / year, compared to 0.14 mGy / year in the control plot.

To calculate the radiation dose to the generative organs of pine trees used a specially designed dosimetry model. To calculate the radiation dose generated by ^{137}Cs γ -rays, forest ecosystem has been divided into 5 zones on the vertical profile. Three upper zones are elevated part phytocenosis, others characterize forest litter and soil layer thickness of 5 cm.

In developing the conceptual scheme dosimetric models made the assumption of a uniform distribution of radionuclides within each zone. Thus, each of the zones shown in Figure 1 viewed as a source of an infinitely long (endless “plate”) with a uniform distribution of activity. The objects for which the estimated radiation doses – generative organs of pine trees, are concentrated within the uppermost zone called “the crown of woody plants.” This zone is a collection of two thick endless radiation sources, one of which is located above and the other - below the level at which the selection was carried out of the generative organs of pine trees. When calculating the dose rate, radionuclide formed by gamma-radiation, distributed within the areas “woody plants Crowns”, “Under crowns layer”, and zones that simulate layers of soil-litter system, using an idea – “a source in the form of thick plates for protection.” In this case considered as protection layers disposed above the source layer.