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DOMINANT PESTS IN VARIOUS KINDS OF CABBAGE OILSEED CROPS

In 2013–2021 six species of spring oilseed which belong to the cabbage family (Brassicaceae): Spring rape (*Brassica napus oleifera annua*) grade Ataman, white mustard (*Sinapis alba*) grade Carolina, Brassica juncea, (*Brássica júncea*) grade Tavrychanka, black mustard (*Brássica nígra*) sort Sofia, oil radish (*Raphanus sativum d. var. oleifera*) Zhuravka variety and spring false flax (*Camelina glabrata*) Hyrskij variety were sown on the experimental plots of Educational and Scientific Productive Center "Experimental Field" at Kharkiv National Agrarian University named after V.V. Dokuchayev.

The main reasons to obtain a low yield of oilseed cabbage crops are farming failure and heavy losses because of the pests. The arrears of the harvest, caused by harmful organisms is 30–40 %.

The dominant species of the pests in the oilseed cabbage crops were cabbage cruciferous complex bugs (*Eurydema spp.*): cabbage bug (*Eurydema ventralis* Kol.), rape bug (*E. oleracea* L.), mustard bug (*E. ornata* L.); mealy cabbage aphid (*Brevicoryne brassicae* L.); lesser cabbage moth (*Plutella maculipennis* Curt.); rape blossom beetle (*Meligethes aeneus* F.); blossom feeder (*Tropinota (Epicometis) hirta* L)., cruciferous flea beetles (*Phyllotreta spp.*): black flea beetles (*Phyllotreta atra* F.), blue flea beetles (*Ph. nigripes* F.), large striped flea beetle (*Ph. nemorum* L.), small striped flea beetle (*Ph. undulata* Kutsch.), turnip flea beetle striped flea beetle (*Ph. vittata* Redt.) and horseradish flea beetle (*Ph. armoracie* Koch.).

While studying the dominant pests' species it has been found that different crops were not equally damaged by insects. According to the data given in Table. № 1 it is shown that cruciferous flea beetles prefer to feed soring rape and different kinds of mustard in the selecting of feeding plants.

They choose the oil radish to a less extent and do not nourish a spring false flax.

The cruciferous bugs prefer spring rape and brassica juncea, much weaker bugs inhabit the white and black mustard and oil radish, and do not feed spring false flax.

A rape blossom beetle prefers the spring rape and different kinds of mustard. It does not nourish the oil radish and spring false flax at all. That may be due to white oil radish flowers and small sized flowers in spring false flax.

A mealy cabbage aphid prefers the spring rape and brassica juncea – the crops that have a flattering non pubescent stem. The aphid colonizes white and black mustard and oil radish much less the stem of which is pubescent and barbed. The aphids have never feed flax spring false flax.

A lesser cabbage moth inhabits the spring rape to a great extent, and all kinds of mustard and oil radish to a less extent. The feeding of caterpillars has not been marked on a spring false flax.

A blossom feeder is a polyphagous pest and it colonizes the spring rape flowers and all kinds of mustard to a great extent. However, it inhabits the oil radish (as well as a rape blossom beetle) much less. Like the previous species the blossom feeder does not inhabit a spring false flax.

1. The Damage of Various Kinds of Oil Cabbage Crops (ESPC "Experimental Field" KhNAU named after V.V. Dokuchayev, 2013-2021)

Type of plant	The Plant Population Degree by Various Kinds of Pests					
	Cruciferous flea beetles (*Phyllotreta spp.)*	Cruciferous bugs (*Eurydema spp.)*	Rape blossom beetle (*Meligethes aeneus* F.)	Mealy cabbage aphid (*Brevicoryne brassicae* L.)	Lesser cabbage moth (*Plutella maculipennis* Curt.)	Blossom feeder (*Tropinota (Epicometis) hirta* L)
Spring rape	+++	+++	+++	+++	+++	+++
White mustard	+++	+	+++	+	++	+++
Brassica juncea	+++	+++	+++	+++	++	+++
Black mustard	+++	+	+++	+	++	+++
Oil radish	++	+	**0**	+	++	+
Spring false flax	**0**	**0**	**0**	**0**	**0**	**0**

Conditional Sings: +++ plants are damaged to a great extent; ++ plants are damaged to an average extent; + slightly damaged plants; 0 no damage.

From the data presented in Table. №1 one can see that the spring rape and brassica juncea are populated with all dominant species of oilseed cabbage crops pests most of all. White mustard as well as black mustard are colonized by these species of insects to a less extent. The oil radish is populated by pests poorly. The spring false flax is not populated by the specialized types of oilseed cabbage crops pests at all. It may be explained by its biochemical features. This fact will be studied in the future.

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THEORY OF CYCLIC CHARACTER OF POPULATION DYNAMICS

The main regulations of the modern theory of the population dynamics and its practical application in forecasting are described in the works of I.Ya. Poliakov (1968, 1976). According to this theory the dynamics of harmful organisms is connected with the changes in their vital activity under the influence of nutritional conditions, heat and water exchange in which the development of the separate generations or age groups took place. The variability of these conditions causes a qualitative morphophysiological rearrangement of the state of populations which is manifested in the changes in their static spreading, reproduction intensity, and development and survival rates. He called this theory the “modern unified theory”. According to his ideas the energy resources and physical environmental factors form all the properties of the population including its reaction to the same factors in the future as well as the nature and regulating importance of intra-and interspecies relationships. The feedback principle is characteristic of the entire set of relationships between the populations and the environment. At the same time the interaction between the food reserve and the population with the simultaneous dependence of both components on the climatic factors becomes decisive.

I.Ya. Poliakov considered that the climatic conditions and energy resources were the main factors guiding the evolution of species on the Earth and they are still remainrd the same. Only those forms that could ensure a