

The species composition of nematodes in winter wheat rhizosphere in conditions of fields and selection greenhouses have been studied during 4 years of experiments in Mironovka Institute of Wheat (Ukraine). It was determined that there are 43 species of nematodes in the plant rhizosphere. In greenhouse conditions complex of rhizosphere plant nematodes are represented by 21 species. This complex consists of nematode species, which are dominating and usual in field conditions. The main number of the plant parasitic nematode group in field conditions (315 of from 319 individuals per 100 cm³ of soil) consists of *Ditylenchus dipsaci*, *Pratylenchus pratensis*, *Tylenchorhynchus dubius*, *Helicotylenchus dihystra* and *Paratylenchus nanus*. The same species of parasites have been found when growing wheat in greenhouses conditions but their number is much more higher than in fields. The mean number of parasitic nematodes in greenhouses was 482 individuals (sometimes up to 982) per 100 cm³ of soil. Based on many years of investigations the complex approach for research on nematode fauna of winter wheat have been developing by our team. The characteristic feature of such approach is the investigation of the whole complex of nematode species, which exists in the rhizosphere of plants. In result of harmfulness thresholds determination for plant parasitic nematodes in the rhizosphere of winter wheat which is grown in field conditions, it is determined that truth biomass losses of plants take place under total number of parasitic species complex of 84 – 145 individuals per 100 cm³ of soil, and the most dangerous species for wheat, such as *Pratylenchus pratensis* and *Ditylenchus dipsaci* are 26 and 42 individuals per 100 cm³ of soil coil respectively. The thresholds of harmfulness of plant parasitic nematodes in conditions of greenhouses are higher than in the fields and are 79 – 889 individuals per 100 cm³ of soil for complex of parasitic species, and for *Pratylenchus pratensis* and *Ditylenchus dipsaci* they are 79 – 367 and 5 – 8288 individuals per 100 cm³ of soil respectively. It is because of optimal conditions of growing (such conditions are provided in greenhouses) under which wheat plants are able to sustain the high invasion pressure without marked losses of biomass and a crop.

1323 (P) Plant parasitic nematodes of winter wheat

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A complex approach to the winter wheat nematode fauna based on long-term investigations have been developed. The characteristic feature of such approach is the investigation of the whole complex of nematode species which exist in the rhizosphere and its comparison to secular and pathologic changes, which take place in plants during the vegetation period and finally concerning their productivity. We have defined that 56 plant nematode species live in the wheat rhizosphere and are included in 42 genera, 25 families and 5 orders. The Tylenchida series (25 species) and Rhabditida (16 species) dominate in species quantity. The other 15 species are distributed in the following way: Dorylaimida 8 species, Araeolaimida 4 species, Enoplida 3 species. Five species among them (*Pratylenchus pratensis*, *Ditylenchus dipsaci*, *Tylenchorhynchus dubius*, *Paratylenchus nanus* and *Helicotylenchus dihystra*) are included in the plant parasitic nematode group, whereas mycotrophs include 20 species, and bacteriotrophs 31 species. It is defined that the density of the nematode populations in various groups varies according to the developing phases of winter wheat plants and is determined both by meteorological conditions and winter wheat state in a whole. The higher number of plant parasitic nematodes is found in bush phase, ear phase and milr-wox ripeness of the seed (66-1485 individuals per 100 cm³ of soil). The lower number of plant parasitic nematodes is found in autumn, in the third leaf phase (283-428 individuals per 100 cm³ of soil). The thresholds of harmfulness are defined according to correlation and regression analysis which have been made in the ear phase for the total number of plant parasitic nematodes: 90-94 individuals per 100 cm³ of soil; for *T. dubius* 11-61, for *D. dipsaci* 33, and for *Pr. pratensis* 154 individuals per 100 cm³ of soil. In the bush phase they depend more on the external conditions and have from 33 up to 479 individuals per 100 cm³ of soil for the total number of plant parasitic nematodes, for *Pr. pratensis* 24-90, and for *D. dipsaci* 40-102 individuals per 100 cm³ of soil. In years unfavourable for plant growing, the losses of winter wheat crop because of parasitic nematode complexes reach 15-17%.

1324 (P) The nematode fauna of potato tubers with ditylenchose

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Potato tubers affected by *Ditylenchus destructor* Thorne, 1945 are populated by other nematode species, in particular by mycotrophs and bacteriorthophs which actively inoculate fungus and bacterial infections and promote the developing of secondary deceases. We have studied nematode species compositions found in potato tubers with ditylenchose. A total of 20 species of nematodes have been revealed which are included in 17 genera, 8 families and 2 orders. Nematodes of potato tubers are represented by three eco-trophic groups: plant parasites 1 species (5%), mycotrophies 5 species (25%), and bacteriorthophies 14 species (70%). The bacteriorthophies group is predominant in the number of species. Among those species presenting a dominating status (on the number) there are two species of mycotrophs which are usual and in ill potato tubers one can seldom find 7 species of bacteriorthophs and 2 species of mycotrophies.

1325 (P) Changes in the invasive capacity and development of *Meloidogyne arenaria* (Neal, 1889) Chitwood, 1949

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Meloidogyne arenaria is one of the most widespread and pathogenic plant-parasitic nematodes. The objective of the present work is an investigation of the influence of α - and γ -radiation on the invasive capacity and development of *M. arenaria* in *Tiny Tim* tomato plants. For this purpose matured egg sacks of *M. arenaria* were exposed to different doses of radiation. As a source of α -rays-Am²⁴¹ was used and as a source of