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COMPARATIVE MORPHOLOGICAL ANALYSIS OF HETERODERA HUMULI AND HETERODERA URTICAE

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Heterodera humuli, Heterodera urticae, морфо-метрические показатели. A comparative morphological analysis of two types cists nematodes Heterodera humuli and Heterodera urticae. Comparative evaluation of morpho-metric indicators of cysts has allowed to allocate a number of objective criteria for their definition. The most stable signs to identify these species is the structure anal-valvano plate.

Heterodera humuli, Heterodera urticae, morpho-metric parameters

Despite the remoteness detection Hmeljova nematodы (Heterodera humuli), a number of questions morphological and anatomical structure and features biolohoekolohichnyh to date remain poorly understood or controversial. The lack of clear criteria, rather like the structure of a number of closely related species, complicating their systematic definition. In particular, the problem of identification of nematode species belonging Hmeljova complicated by the fact that the plantations hop on nettle nettle can meet nematode cysts [1,2,7].

Given that this species can parasitize on hops, the purpose of our work was to confirm or refute this assumption. Materials and methods of research. Soil sampling was carried out by conventional methods. Moving nematodes phase with selected samples (5 g root and 20 cm3 of soil) were isolated by modified Berman.

To study the structure-anal plate vulvarnogo selected mature females (cysts). Female placed on the slide in a drop of water, glycerol and under binokulyarom cut off her rear end of the body on which the vulva and anus. Vidchyschaly cut off part of the egg, internal organs and placed on the slide. The cut covered with cover glasses and examined under a microscope by a large increase in [3,4,5,6].

Results. Our research has shown that none of the options were not found to nematode reproduction tsystoutvoryuvalnyh atypical for each plant species -

zhyvytelyah. We conducted a comparative assessment of morpho-metric indicators cysts helped identify a number of objective criteria for their definition.

Hmeljova nematode cysts lymonopodibno - spherical shape with a slightly protruding head end as well as vulvarnogo cone. Small in size, length within 0,32-0,87 (0.521) mm, width - 0,28-0,57 (0.367) mm. Color cysts mostly light - orychnevyy. The ratio of length to width of cysts was 1.42. These indicators nematode cysts Hmeljova not significantly different from the nettle. With such measurements were also nettle cysts nematode (Heterodera urticae). Thus, female nettle nematodes and small, within 0,28-0,63 length and width of 0,263-0,474 mm. Cuticle cysts also mostly light brown, but contains a significant number of small spines. Therefore, we analyzed for determination of objective criteria of a number of other morphological and anatomical structure. In particular, most stable characteristics for species identification structure is anally-vulvarnogo plate.

In Hmeljova tsystoutvoryuyuchoyi nematodes she bifenestrovoho type - napivfenestry divided vulvarnogo wide bridge, while the nettle nematodes - narrow. On this basis they belong to the type of structure ambifenestrovoho anally-vulvarnogo plate. Thus, to determine the two related species tsystoutvoryuyuchyh nematodes would be best used to compare the structure is anally-vulvarnogo plates. Sizes napivfenestr two also differ: in Hmeljova they averaged 43.6 microns, while the nettle - 39.6 microns. Among other features of the anatomical structure is also worth noting the differences and structural features of the lower bridge. A number of distinctive features found us as larvae in the second stage of age (see. Table.). Thus, the size of the larvae were not significantly different length within 314 - 472 m in Hmeljova and 396 - 427 microns in nettle, width respectively 17.3 - 20.6 microns and 19.1 - 19.7 microns.

However Hmeljova was better developed stylet length 22.9 - 26.1 m, while the nettle 21.6 - 23.8 microns. The length of the tail hialynovoyi Hmeljova larvae (24.8 - 28.7 m) also exceeded the nettle nematodes (21.3 - 23.6 m). Hialynovoyi ratio (transparent) part of the tail slightly, but also differed in the investigated species. Thus, despite some similarities morphometric parameters cysts and

females, the analysis of our data suggests the existence of two different species. At hop hop tsystoutvoryuyucha parasite nematode Heterodera humuli, and nettle (Heterodera urticae) are accompanying species, plant zhyvytelem which is the nettle that often met in plantations of hops. It should be noted that in addition nettle nematodes in plantations of hops individual researchers was also discovered and described fikusova tsystoutvoryuyucha nematode, which in morphometric parameters (the difference only in the presence of poorly developed Bulle) is almost identical to Hmeljova nematodes.

This allowed suggesting some scientists believe it is not a separate species but fikusovoyu race Heterodera humuli. But as shown by further studies fikusova not characteristic of nematode plant hops [2]. Its plants zhyvytelyamy are different types of ficus that are not found in the wild growing hops, because fikusova nematode can be fitoparazytom hops. In addition to these species, on new plantations of hops also identify the likely beet cyst nematodes or oatmeal, especially when positioned on Khmilnyk predecessor - beet or cereals. This is because the nematode cysts can persist in soil for many years. However, none of these types of hops is unfavorable for propagation and development of culture. Because these types of economic importance in plantations of hops are not.

Conclusions. The inability to reproduce on atypical plants - zhyvytelyah and clear differences especially anal-structure vulvarnogo plates suggest the existence of hops plantation of two different species. At hop hop tsystoutvoryuvalna parasite nematode (Heterodera humuli). Other species - nettle tsystoutvoryuyucha nematode (Heterodera urticae) are accompanying species, the plant - which is zhyvytelem nettle, which is often found in stands of hops.

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