

Book review



A.A. Shesteperov. Epiphytology of nematode diseases of plants. M.: VNIIP – FSC VIEV; Publishing House Nauka (Science), 2021. – 446 pp. <https://doi.org/10.31016/978-5-6046256-6-8.2021.446> (In Russian).

The monograph is a modern theoretical and practical overview of the epiphytology of plant nematodosis. The study of nematode plant diseases and the development of integrated crop protection systems against them are two of the priorities in phytoparasitology and epiphytology. Plant-parasitic nematodes are recognised as one of the biggest threats to crop production. Annual world yield losses caused by plant-parasitic nematodes range from 78 to 128 billion US dollars. Therefore, in nematology, a comprehensive systematic approach to monitoring, diagnosis and protective measures is of particular importance, based on scientifically grounded management decisions. This will provide for the targeted use of certain complementary methods and techniques in combination with a diagnostic assessment of their effectiveness, rather than the use of one-sided ‘simple’ and ‘effective’ interventions.

The purpose of the monograph is the use in phytohelminthology of the epiphytological concept, which is based on the analysis of the epiphytotic process in various nematode diseases of plants and the methodology developed in epiphytology. The epiphytological and systemic parasitological approaches to the analysis of diverse manifestations of nematode diseases of plants and to the solution of problems of agricultural crops protection against nematode diseases pathogens are presented in the work. The general part presents the theoretical basis of the epiphytotic process in nematode diseases of plants: source of invasion, mechanism of persistence and transmission, receptive plants, and the role of plant-parasitic nematodes localisation in epiphytological classification of nematode diseases. The distinctive and principal features of the epiphytotic process in different nematode diseases in contrast to the epiphytology of infectious diseases are given. Epiphytotic foci in biocenoses and agrobiocenoses are characterised.

On the basis of this concept the regularities of epiphytosystem evolution are considered, the structure of monitoring nematode diseases is detailed, and the epiphytological basis of protection of agricultural crops against nematode plant diseases is presented. A large section of the book is given to the issues of quarantine, prevention and anti-epiphytotic measures. Examples of the examination of nematode disease foci are described in detail, which establishes the basics of protecting different agricultural crops from plant-parasitic nematodes. This is supported by examples of localisation and eradication of foci of especially dangerous nematode diseases. On the basis of epiphytological approach the scientific bases of agricultural crops protection against nematode diseases in general, as well as some methods of ecologically safe antinematode measures, have been improved to obtain high yields and ecologically safe products.

The book is intended for plant protection and quarantine specialists. It is of interest for students, graduates and postgraduates of agronomic and biological specialties, and for organisers and managers of state services on plant protection and quarantine.