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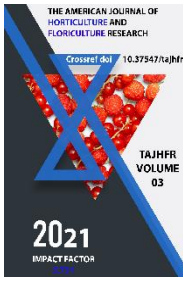

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The Impact Of Edaphic Variables On The Similitude Of Parasitic Nematodes In The Dirt Inspected In Nurseries Of Fancy Trees And Bushes

Karwowski Wojciech
University Of Agriculture In Krakow, Poland

ABSTRACT

The biggest faunistic similitudes between nematodes segregated from spots of development of coniferous and deciduous plants were recorded in soils of loamy sand and sandy topsoil. The most plentiful nematode species and the best similitude in types of plant parasitic nematodes were seen in soils with impartial pH or somewhat acidic. Aphelenchus avenae was found in soil tests gathered from both coniferous and deciduous plants, with no connection to soil corrosiveness.

KEYWORDS

Plant Parasitic Nematodes, Decorative Plants Nurseries.

INTRODUCTION

In Poland, the review on the plant parasitic nematodes related with woody plants started Wilski which detailed that nematodes are vermin of coniferous trees in backwoods. From that point forward, examines on plant parasitic nematodes in timberlands and woodland nurseries were proceeded by Wasilewska and as of late, by Dobies and Skwiercz. Studies on the plant parasitic nematodes in the dirt of nurseries creating trees for plantings in urban areas was introduced by Wolny.

The point of this work was to assess faunistic likeness of plant parasitic nematode networks in soils under development of different gatherings of trees and bushes in decorative nurseries.

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MATERIALS AND STRATEGIES

Among the tested gatherings, 8 types of coniferous and 26 types of deciduous trees and bushes were analyzed. Tests were gathered at every nursery once during the developing season utilizing a dirt center sampler with a distance across of 20 mm. . Systems dependent on Flegg's and Baermann's procedure, just as diffusive buoyancy strategy were utilized for the extraction of nematodes. Nematodes were preserved in a 4-6% formalin arrangement and super durable slides were made by the lactoglycerol technique. Examples were recognized utilizing a compound magnifying lens with Nomarski differential impedance contrast at a force of up to 1000× amplification.

In examples taken from decorative coniferous plants, 6082 people having a place with 105 types of nematodes were distinguished, while in examples taken from deciduous trees and bushes – 12320 people having a place with 120 animal categories were recognized. The faunistic similitude of plant parasitic nematode networks was assessed by 5-point scale. To think about the nematode faunistic similitudes and chose edaphic factors, subjective information were examined utilizing Jaccard's equation.

RESULTS

The arrangement of plant parasitic nematode species present in the dirt taken from conifers was the most comparable among pines and junipers, for which the coefficient of faunistic likeness was more than 40%. Pratylenchus neglectus, Rotylenchus robustus, Mesocriconema xenoplax and Trichodorus primitivus, known as unsafe species, were available in soil taken from rhizosphere of both these conifers. Also, P. fallax, Helicotylenchus pseudorobustus, Paratylenchus nanus and Bitylenchus dubius were additionally found en masse. A comparable nematode animal types structure was seen in the dirt examined from pines, tidies and arborvitae rhizosphere, and the coefficient of faunistic similitude for soils under these yields vacillated somewhere in the range of 32.0 and 37.7%. In the dirt of those three coniferous species, the conceivably unsafe types of nematodes were P. crenatus, R. robustus, P. projectus, Paratrichodorus pachydermus and furthermore H. pseudorobustus, P. nanus and B. dubius.

In soils inspected from nurseries of deciduous trees and bushes, the most noteworthy coefficient of faunistic closeness (above 35%) was found for maples and dark insect just as for chestnut and oaks rhizosphere. Among nematode species known as unsafe to plants, in soil examined from around maples and dark insect were discovered P. penetrans, P. neglectus, H. digonicus, H. pseudorobustus, R. robustus, P. projectus, P. bukowinensis and T. viruliferus.

The coefficient of faunistic comparability of nematodes was additionally high (above 30%) for tests of soil taken from around oaks and birches just as rowans and hornbeam rhizosphere. Nematode M. curvatum, were available in the dirt tested from around oaks and hornbeam. Close to oaks and birches, H. digonicus, P. fallax, P. thornei, C. hexalineatus and B. dubius were found. Species like P. neglectus, H. digonicus, M. curvatum, Trichodorus sp., P. fallax, P. thornei, C. hexalineatus and B. dubius were seen in soils examined from the spot of development oaks and rowans.

The similitude of parasitic nematode gatherings, contingent upon the dirt class in examples from similar agronomic classifications of soil, the coefficient of faunistic comparability of nematode networks between tests taken from rhizosphere of coniferous and deciduous trees and bushes

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was high just on account of loamy sand and sandy topsoil soils. In soil tests taken from around coniferous plants, the coefficient of faunistic similitude of nematodes was practically 40% between the sand and loamy sand soils. Plant nematodes known as hurtful, for example P. neglectus, P. projectus, P. pachydermus and P. teres were found in the two kinds of the dirt. Likewise, P. fallax, H. pseudorobustus, H. varicaudatus, P. nanus, C. hexalineatus and dubius were likewise recorded in an enormous number. High similitude in species sythesis of parasitic nematodes was likewise found in sandy topsoil and loamy sand soils.

The similitude of parasitic nematode gatherings, contingent upon the dirt acridity

The similitude of the nematode networks from nurseries of coniferous and deciduous trees and bushes, present in soils of a similar pH was high just for acidic soils (40.3%) and fundamentally lower for somewhat acidic (18.6%) and unbiased (15.4%) soils (information not shown). The coefficient of faunistic similitude of nematodes in the acidic, marginally acidic and unbiased soil didn't surpass 20%. For somewhat acidic and nonpartisan soils faunistic likeness coefficients of nematode species arrangement showed critical distinction and its worth was under 9%, which implies that in coniferous nurseries, soil pH essentially affected the nematode species piece.

CONVERSATION

In our review, H. digonicus was more emphatically connected with deciduous plants than with conifers. This nematode has as of now been noted in nurseries creating trees for planting in urban communities and in ranger service nurseries. Investigations of Skwiercz and Dobies show that in ranger service nurseries H. digonicus doesn't happen oftentimes, but in organic product nurseries it was more various. Our outcomes demonstrate that R. robustus was related with coniferous plants. It is known as plentiful in coniferous nurseries, yet additionally in the plantations and in nurseries delivering trees for plantings in urban communities. A hurtfulness of R. robustus to the root arrangement of coniferous seedlings was reported by Boag. Most of parasitic nematode species was noted in the climate of loamy sand and sandy topsoil, subsequently high similitude of nematode networks in an area of coniferous and deciduous trees and bushes filled in these dirts were noticed. An enormous number of nematode species was recorded in light soils and relied upon the dirt boundaries. In sandy soils, void spaces between particles take into account nematodes development and water entrance which advances their event and spread. In any case, A. avenae from rhizosphere of coniferous and deciduous plants frequently showed up in both loamy sand and sandy topsoil soils, though B. dubius regularly happened in loamy sand soils as it were. P. crenatus and P. bukowinensis were regularly present in the coniferous nurseries on sandy soils, though C. hexalineatus was more continuous in deciduous trees and bushes nurseries. In sandy topsoil soils where coniferous plants were developed, H. pseudorobustus and R. robustus were normal, yet in deciduous trees and bushes nurseries H. digonicus was often found. The relationship between the presence of nematodes and soil acridity was depicted by Consumes and Norton and Hoffmann. The somewhat acidic and impartial soils were the most extravagant in nematode species and the species arrangement was comparable in soils of the two degrees of corrosiveness. In soils of this acridity, H. digonicus was the most incessant species, predominantly in deciduous trees and bushes nurseries. In marginally acidic soils in

coniferous nurseries the most regular were B. dubius and A. avenae, and in nonpartisan soil – C. hexalineatus. In marginally acidic and unbiased soils all the more regularly happened H. digonicus.

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