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DISTRIBUTION OF *HETERODERA AVENAE IN CZECHO-SLOVAKIA*

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Summary. The cereal-cyst nematode, *Heterodera avenae* occurred in Czecho-Slovakia in 59.3% of localities sampled. The highest population density of the nematode was found in the region with intensive cereal cultivation.

Cereals are grown in Czecho-Slovakia on more than two milion hectares of the agricultural land. The share of cereals in the crop rotation is very high in some regions (above 70%) and results in monocultural systems with conditions favourable for increase in pest populations.

Heterodera avenae Woll., the cereal cyst nematode, is widely distributed in cereal-growing areas all over the world (Meagher, 1977; Ritter, 1982). In Czecho-Slovakia investigations on the occurrence of the cereal-cyst nematode started in 1975 in the territory of Slovakia (Sabová *et al.*, 1977), later including also the territory of Bohemia. Studies on pathotypes confirmed the occurrence of the Ha 12 (c) pathotype throughout the Czech and Slovak Federal Republic (CSFR), except for some localities where mixed populations of Ha 12 and Ha 11 pathotypes were detected (Sabová *et al.*, 1990). This paper presents the results of a survey of the distribution of the cereal cyst nematode in CSFR.

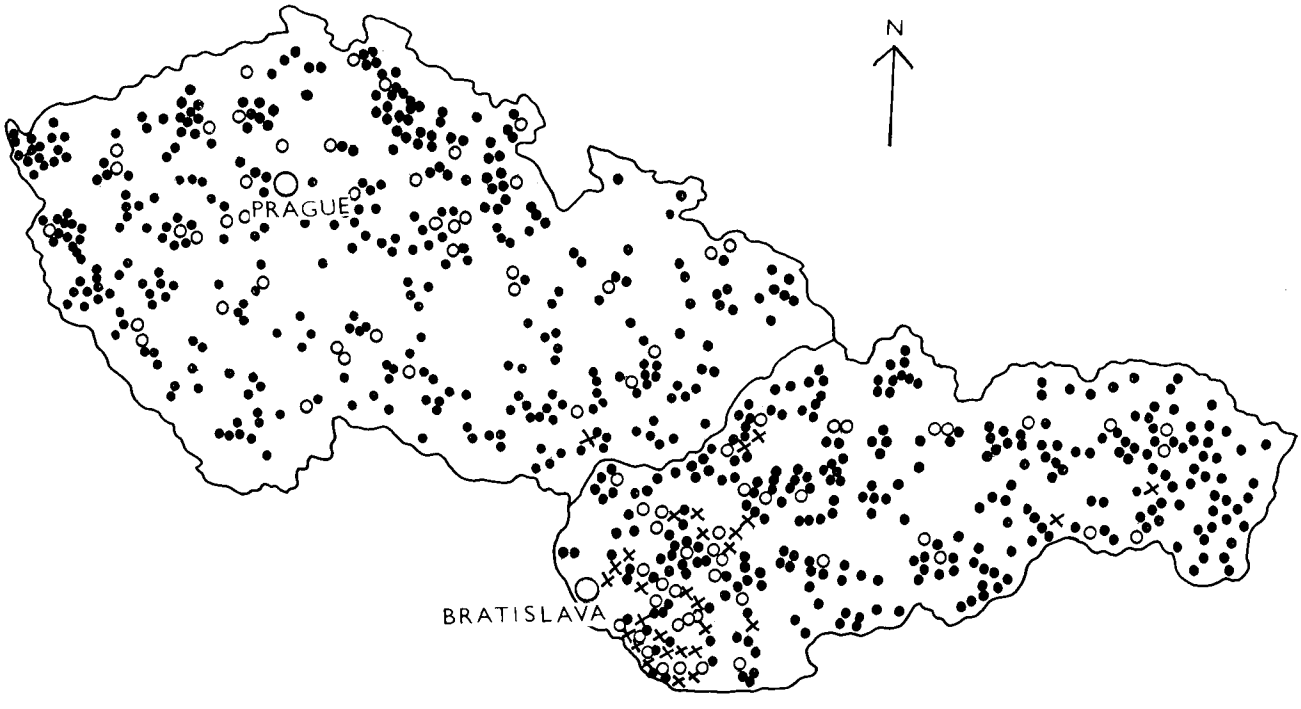

Fig. 1 - Distribution of the cereal-cyst nematode in Czecho-Slovakia with indication on population density (• = low, less than 14 cysts, O = medium, 14-40 cysts and x = high, more than 40 cysts/100 g soil).

TABLE I - *The occurrence of the cereal-cyst nematode in Czecho-Slovakia (CSFR).*

	Number of localities			Number of localities with nematode population density		
	investigated	positive	%	low	median	high
Bohemia	671	415	61%	372	42	1
Slovakia	679	386	56%	316	42	28
CSFR	1350	801	59,3%	688	84	29
%				51	6,2	2,1

Materials and methods

Soil samples were collected from 1350 localities (679 in Slovakia, 671 in Bohemia). Cysts of the nematode were extracted by the flotation method (Sabová et Valocká, 1980). Population densities of *H. avenae* were evaluated as low when less than 14 cysts/100 g soil were detected, medium when 14-40 cysts/100 g occurred and high when more than 40 cysts/100 g were extracted.

Results

Heterodera avenae was found to occur in 801 of 1350 localities (Fig. 1, Table I), representanting 59% of the fields sampled (56% in Slovakia; 61% in Bohemia). The population density in the individual localities ranged from 1 to 193 cysts/100 g of soil. In most of the localities (51%) densities of *H. avenae* were low, in 6,2% were medium and in 2,1% high. In the region of South and South-west Slovakia, where populations were high, there was evidence of yield reduction. In this region there is intensive cereal cultivation with narrow crop rotation, and such conditions lead to the increase of the nematode.

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