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TAXONOMIC STUDIES ON *APHELENCHOIDES RITZEMABOSI*
(NEMATODA, APHELENCHIDA) FROM INDIA

by

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The occurrence of *Aphelenchoides ritzemabosi* (Schwartz, 1911) Steiner, 1932 in India was first reported by Ahmad *et al.* (1966). In Shimla, Gill and Sharma (1976) observed that it caused more damage on *Zinnia elegans* L. than on chrysanthemum. Recent survey studies have shown that *A. ritzemabosi* occurs widely on zinnia in hilly areas of Northern India. It was, therefore, of interest to confirm and compare the identity of this species from various localities.

Three populations, one each from Shimla, Solan (Himachal Pradesh) and Srinagar (Jammu and Kashmir), were collected from infested leaves of *Z. elegans*. The specimens were fixed in F.A.A., and processed in glycerine-alcohol (95 parts of 30% alcohol: 5 parts of glycerine) for slow dehydration and mounted in anhydrous glycerine.

APHELENCHOIDES RITZEMABOSI (Schwartz, 1911) Steiner, 1932

Shimla population: (10 ♀ ♀): L=1.09-1.29 mm; a=49-56; b=11.6-13.2; b'=3.4-4.2; c=20-23; V=68-71; spear=15-17 μ m. (10 ♂ ♂): L=0.89-1.11 mm; a=49-51; b=9-12; b'=3.4-3.8; c=15-21; T=33-48; spear=15-17 μ m.

Solan population: (10 ♀ ♀): L=0.74-1.02 mm; a=42-53; b=10.3-12.4; b'=4.2-5.2; c=19-22; V=69-74; spear=11-12 μ m. (10 ♂ ♂): L=0.72-0.94 mm; a=44-54; b=9-12; b'=3.5-5.0; c=14-22; T=43-57; spear=12.5-14.5 μ m.

Srinagar population: (10 ♀ ♀): L=0.98-1.27 mm; a=42-49; b=12-13; b'=4.6-5.5; c=18-23; V=69-72; spear=12.5-14.5 μm . (10 ♂ ♂): L=0.78-0.93 mm; a=43-50; b=10.7-12.5; b'=4-5; c=16-20; T=44-59; spear=12.5-14.5 μm .

Description: Female: Body open C-shaped or slightly ventrally arcuate when killed. Lip region rounded, set-off from the body; without annulation. Cephalic framework moderately developed. Metenchium almost equal to telenchium, basal knobs of spear small, slightly backwardly directed. Lateral field with four incisures. Nerve ring located 87-101 μm from anterior end. Excretory pore about 1-2 corresponding body-widths posterior to nerve ring. Oocytes arranged in one or two rows. Post-uterine sac an elongated pouch about 5-7.5 times vulval body-width in length, usually containing a large number of sperms. Tail uniformly tapering to a peg like terminus with four mucrons.

Male: Spicules 19.5-24.7 μm in length, ventrally arcuate. Ventral shaft of spicules is smaller, about 1/3 length of dorsal shaft. Three pairs of postanal, subventro-median papillae present. Tail curved ventrally ranging from 90-180°; tapering gradually to mucronate terminus.

Apart from some variations from the original description, the present populations varied considerably among themselves (Table I).

The *A. ritzemabosi* population from Shimla had a larger spear, 15-17 μm , compared with the other two populations, in which the spear length varied between 11-14.5 μm (Table I). It also had a larger post-uterine sac (PUS), a greater vulva-anus distance (VAD) and more posteriorly located excretory pore, compared with Solan and Srinagar populations.

However, the Srinagar population had a greater vulval body-width (VBW) compared with the Shimla population, although the ratio between post-uterine sac and vulval body-width was found to be slightly less than 5 in some Srinagar specimens. In general the post-uterine sac varied between 5 to 7.5 times as long as the vulval body-width. Similar observations were also made by Thorne, 1961 who separated *A. ritzemabosi* from *A. besseyi* on the basis of the PUS character.

Table I - Comparative taxonomic variations in three populations of *A. ritzemabosi* on *Zinnia elegans*.

Measurements based on 10 female specimens	Shimla 1850 m alt.	Solan 1600 m alt.	Srinagar 1200 m alt.
Body length mm	1.09-1.29 (1.19)	0.74-1.02 (0.90)	0.98-1.27 (1.11)
Spear μm	15-17 (16.4)	11-12 (12.1)	12.5-14.5 (13.7)
Excretory pore μm	93-121 (112)	88-113 (102)	88-100 (93)
Vulval body-width (VBW)	12.5-17.5 (15.3)	15-20 (17)	17.5-20 (18)
Vulva-Anus distance (VAD)	200-258 (230)	173-238 (207)	175-245 (218)
Post-uterine sac (PUS)	100-138 (116.5)	87-138 (111.8)	75-107 (90)
PUS / VBW	6.6-9.1 (7.6)	5.0-9.2 (6.6)	4.2-5.8 (5.02)
VAD / PUS	1.6-2.3 (1.9)	1.3-2.2 (1.9)	2.0-2.9 (2.4)

LITERATURE CITED

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