Pakistan Journal of Nematology (2019)37(2): 245-247 ISSN 0255-7576 (Print)
ISSN 2313-1942 (Online)
www.pjn.com.pk
http://dx.doi.org/10.18681/pjn.v37.i02.p245-247

Tylenchorhynchus usmanensis Khurma & Mahajan, 1987, a new record of plant parasitic nematode from Pakistan

M. Israr[1†], M. Habib[1] and K. Nasira[2]

[1]*Pakistan Science Foundation, Islamabad, Pakistan*
[2]*National Nematological Research Centre, University of Karachi, Karachi-75270, Pakistan*

[†]Corresponding author: misrar@gmail.com

The soil samples were collected from underground vegetable fields of Punjab and Khyber Pukhtunkhwa provinces. The plant parasitic nematodes were extracted from soil samples by Cobb's sieving and decanting method (Cobb, 1918) followed by modified Baermann technique (Baermann, 1917). After processing, the nematode genera and species were identified (Siddiqi, 2000). *Tylenchorhynchus usmanensis* is reported from the first time from Pakistan is briefly redescribed and illustrated.

Tylenchorhynchus usmanensis Khurma & Mahajan, 1987 (Fig. 1 A-G, Table 1)

Description Female: Body slender, slightly ventrally curved upon fixation. Cuticular annulation distinct 1-2 µm near mid body. Lateral field with four incisures, outer two incisures crenate, occupying about 1/3 of body width. Lip region offset with 5-6 lip annules, labial frame work moderately sclerotized. Stylet slender, moderately developed, knobs slopping posteriorly. Dorsal gland orifice (DGO) about 1-2 µm behind stylet base. Excretory pore 94-108 µm from anterior end. Median oesophageal bulb oval 50-53 µm from anterior end, basal bulb elongate pyriform.

Nerve ring 82-85 µm from anterior end. Reproductive system amphidelphic, ovaries outstretched, oocytes arranged in a single row. Vulva a transverse slit like, vagina about half the vulval body width long. Epiptygma absent, spermatheca elongate, oval, filled with large sperms. Tail terminus smooth, narrow, conoid 43-45 µm long, bearing 33-35 annules. Phasmid pore like in anterior half of tail, 16-18 µm from anus. Post-rectal intestinal sac absent. Serpentine canals present.

Male: Similar to female except for sexual characters, and body in posterior region usually more curved than in female. Testis outstretched, bursa tylenchoid, finely crenate, enveloping entire tail. Spicules ventrally curved, gubernaculum well developed, half of the spicules length. Tail terminus conoid pointed, enveloped by a crenate bursa, extending from opposite the proximal ends of the retracted spicules to tail tip. Phasmids in anterior half of tail, 14-16 µm from cloaca.

Remarks: *Tylenchorhynchus usmanensis* Khurma & Mahajan, 1987 represents the first record of this species from Pakistan. Morphological and morphometric characters fit the original description of *T. usmanensis* except for few differences which may be due to ecological variation. The Pakistani specimens have greater "a" ratio in male (a=35-37 vs 28.5-30.5).

Tylenchorhynchus usmanensis was collected from two provinces, Punjab and Khyber Pakhtunkhwa. From Punjab this species was encountered from three hosts and localities viz., radish-Toba Tek Singh, turnip-Sargodha and carrot-Sheikhupura; from Khyber Pukhtunkhwa this species was also encountered from three hosts and localities *viz*., radish-Abbottabad, turnip-Nowshera and sugar beet-Peshawar.

Published by Pakistan Society of Nematologists
Received:28 Apr, 2019
Accepted:19 Aug, 2019

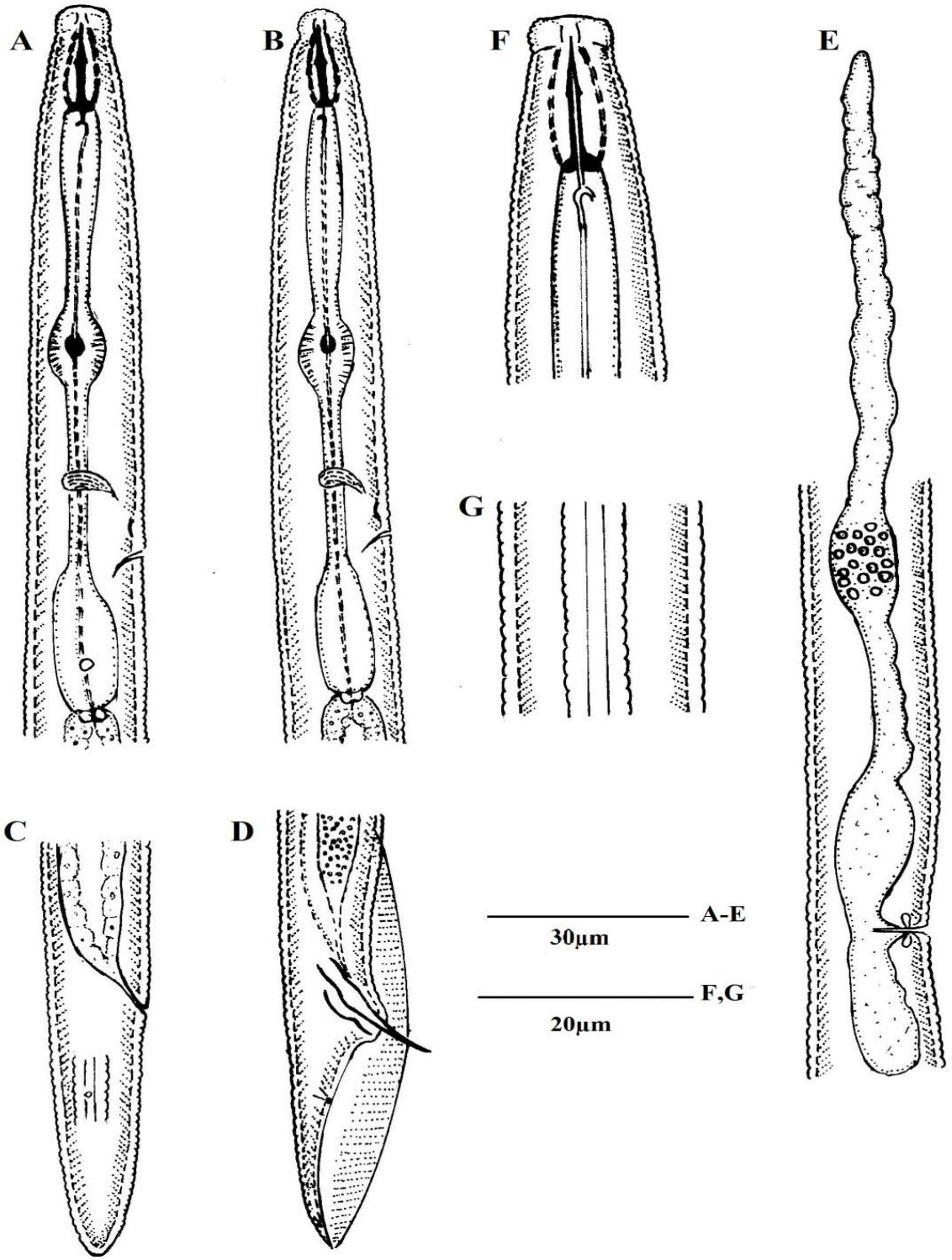

Fig. 1 (A-G). ***Tylenchorhynchus usmanensis*** **Khurma & Mahajan, 1987.** Female: A. Oesophageal region. C. Posterior region. F. Anterior region. G. Lateral field. E. Anterior gonad. Male: B. Oesophageal region. D. Posterior region.

Table 1. *Tylenchorhynchus usmanensis* Khurma & Mahajan, 1987. Measurements in µm (except L). Values in the form of Mean ± SD (range).

Morphological characters	Females (n=5)	Males (n=2)
L (mm)	0.56 ± 0.03 (0.52-0.62)	0.56,0.60
a	29.2 ± 2.27 (26.7-33)	34.4, 35.2
b	4.96 ± 0.23 (4.8-5.4)	4.8, 5.1
c	13.3 ± 0.72 (12.5-14.2)	14, 15
c’	2.9 ± 0.18 (2.7-3.1)	2.9, 3.0
V%	54.8 ± 0.34 (54.5-55.3)	-
Stylet	14.8 ± 0.83 (14-16)	15, 16
Tail length	41.2 ± 2.58 (38-44)	40, 41
Anal body width	13.4 ± 0.89 (12-14)	12.5,13.5
Oesophageal region	113.4 ± 9.09 (102-125)	116, 120
Spicules	-	23, 24
Gubernaculum	-	11.5,12

References

Baermann, G. (1917). Eineeinfache Method ZurAuffinding von Anklyostomum (*Nematoden*) LarveninErdproben. *Geneeskundig Tijdschiftvoor Nederlandsch Indie*, 57, 131-137.

Cobb, N. A. (1918). Estimating the nema population of soil. *Agriculture Technical Circular US Department of Agriculture*, 1, 48 pp.

Khurma, U. & Mahajan, R. (1987). Two new species of *Tylenchorhynchus* Cobb, 1913 from Punjab, India. *Indian Journal of Nematology*, 17, 202-207.

Siddiqi, M. R. (2000). *Tylenchida parasites of plant and insects*. 2nd Edition. CAB International, Wallingford, UK, 833pp. http://doi.org/10.1079/9780851992020