



<http://dx.doi.org/10.11646/zootaxa.4040.1.6>

<http://zoobank.org/urn:lsid:zoobank.org:pub:D46FFFA4-641B-4A08-9240-B19DED8D2FFE>

## Morphological and molecular characterization of *Tylencholaimellus persicus* sp. n. (Dorylaimida: Tylencholaimellidae) from Iran

YASER ADELDOOST<sup>1</sup>, RAMIN HEYDARI<sup>1,3</sup> & MAJID PEDRAM<sup>2,3</sup>

<sup>1</sup>Department of Plant Protection, College of Agriculture and Natural Resources, University of Tehran, Karaj, Iran

<sup>2</sup>Department of Plant Pathology, Faculty of Agriculture, Tarbiat Modares University, Tehran, Iran

<sup>3</sup>Corresponding author. E-mails: rheydari@ut.ac.ir; majid.pdram@modares.ac.ir

### Abstract

*Tylencholaimellus persicus* sp. n. is described and illustrated based on morphological and molecular characters. The new species is characterized by its 613–885 µm long body, expanded lip region separated from body contour by a sharp constriction, forming a large disk-like structure, odontostyle and odontophore respectively 12–14 and 6.5–8.0 µm long, female genital system mono-opisthodelphic with relatively long anterior uterine sac (AUS; 50–80 µm in length), position of vulva relative to the body length ( $V = 36.5\text{--}41.5$ ), broadly rounded tail, abundant males in population with 22–25 µm long spicules and one ventromedian copulatory supplement. The new species is compared with five known species of the genus that have a perioral disc, rounded tail and AUS: *T. coronatus*, *T. incertus*, *T. montanus*, *T. ozarkensis* and *T. projectus*. Compared to these five species, the new species has an expanded lip region separated from body contour by a sharp constriction, but can further be separated by a combination of morphological and morphometric characters such as odontostyle length, tail shape, differences in ratios  $c'$  and  $V$  and male characters. Because of having similar general morphology, the new species was also compared with a species of genus *Margollus*, *M. bokanicus*, and the differences between the two species are discussed. In addition to morphological and morphometric data, molecular phylogenetic analyses were performed using partial sequences of the 18S SSU and 28S LSU D2/D3 rDNA segments, in which the new species forms a clade with four species/isolates of *Tylencholaimellus* in the SSU tree and one isolate of *Tylencholaimus* in the LSU tree using Bayesian inference (BI).

**Key words:** new species, phylogeny, taxonomy, tylencholaims

### Introduction

Currently, the genus *Tylencholaimellus* Cobb in M.V. Cobb, 1915 (family Tylencholaimellidae Jiarajpuri, 1964) has 37 (36 in Andr ssy, 2009 plus one species by Zhang *et al.*, 2012) nominal species. The genus is mainly characterized by its dorylaimoid cuticle with fine transverse striations in the outer layer, presence of a stiffening piece at the dorsal side of odontostyle, odontophore with well-developed knobs at base, opisthodelphic female reproductive system, with or without an anterior uterine sac (AUS), and males with low number of copulatory supplements. Some species have a perioral disc, while others lack this structure.

A history of tylencholaim species studied from Iran is given in Pedram *et al.* (2012). During a nematode survey in Fars province, southern Iran, a population belonging to the genus *Tylencholaimellus*, having an expanded lip region separated from body contour by a sharp constriction, forming a large disk-like structure was recovered. Further studies of the recovered population revealed it belongs to an unknown species of the genus, described in the present study as *T. persicus* sp. n.

### Material and methods

**Sampling, extracting, mounting and drawing.** Nematodes were extracted from soil samples using the tray