Sericologia 57(1): 32-38, 2017
ISSN 0250-3980

Research Paper

MORPHOLOGY AND PATHOGENICITY OF A NEW MICROSPORIDIAN ISOLATED FROM SILKWORM (*BOMBYX MORI* L.) CROPS OF PURE MYSORE SEED AREA OF KARNATAKA, INDIA

M. Balavenkatasubbaiah[1*], A.V. Mary Josepha[1], P. Vineet Kumar[1], G. Satish[2] and V. Sivaprasad[1]

[1]Central Sericultural Research and Training Institute, Central Silk Board, Mysuru 570008, India.

[2]Karnataka State Sericulture Research and Development Institute, Bengaluru, India.

[*]E-mail: mbvsubbaiah@gmail.com

ABSTRACT

Different species of microsporidia cause microsporidiosis in silkworm, *Bombyx mori* L. A number of microsporidia have been isolated from silkworm and mulberry pests by many. Recently, a new microsporidian infection was reported in Pure Mysore (multivoltine) silkworm rearings of Mysore seed area, Karnataka, India. In the present study, the authors collected this microsporidian infected samples from the field, isolated and purified spores, and studied their morphological characters, pathogenicity and transmission in four successive generations in silkworm. Scanning Electron Microscope study revealed that the purified spores of the new microsporidian are ovo-cylindrical in shape and measured 4.62 ± 0.34 µm in length and 2.05 ± 0.24 µm in width with 1:0.44, length : width ratio. In contrast, the spores of *Nosema bombycis*, the common microsporidian are oval in shape having 3.80 ± 0.01µm length, 2.60 ± 0.01µm width and 1:0.68, length : width ratio. At the inoculation doses of 1×10^4 and 1×10^5 spores/ml, with the new microsporidian, the larval mortality recorded during rearing was 2.33 to 6.00 %. At subsequent high inoculation doses (1×10^6 to 1×10^8 spores/ml), 10.33 to 70.00 % mortality was observed and the cocoon parameters of silkworm were adversely affected by the infection. Studies also indicated that the transovarian infection by the new microsporidian in four successive generations had impact on larval mortality and cocoon characters of silkworm. The results are discussed in the light of the studies carried out.

Key words: New microsporidian, morphology, pathogenicity, silkworm.