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PRODUCTION OF THE MICROSPORIDIAN PLISTOPHORA CULICIS WEISER IN SUBSTITUTE HOST

Phistophora culicis is one of the three known microsporidians which may be employed for direct infection of mosquitoes (Weiser J., Coluzzi M., Folia parasit. (Praha) 19: 197—202, 1972). It infects larval *Anopheles stephensi* and *A. gambiae* and also transfers to other hosts. However, extensive experiments, in which it could be used against different vectors, were very difficult because the yield of spores in culturing microsporidians on larvae of *A. stephensi* constituted 5×10^5 up to 1×10^6 of spores per larva. I used the method of feeding a spore suspension to hungry caterpillars of *Barathra brassicae* (Hostounský J., Weiser J., Věst. čs. spol. zoolog. 36: 97—100, 1972). After moulting to 4th instar the caterpillars from colonies reared on artificial diet were left without food for 12 hours and then each fed 1 cubic mm of spore suspension containing 4000 mature spores in water. The development of infected caterpillars was somewhat retarded, on 25th day after infection up to 60 % of caterpillars succumbed and the remaining ones were dead on 28th day. At autopsy on 20th day the microsporidian was detected in the hypertrophied oenocytes on the surface of intestine and in the dispersed hypertrophied phagocytes in different parts of caterpillars. The spore content in one caterpillar was assessed on spore contents in whole suspensions read in Bürker's hemocytometer. On 20th day 5×10^7 of refractive mature spores were found singly or in pansporoblasts, and 3×10^7 of nonrefringent sporoblasts and young spores. At the end of experiments on 28th day 3×10^8 mature spores and 1×10^8 sporoblasts and immature spores were found in one infected caterpillar, i.e. about 400 times more than from one mosquito. The produced spores were virulent. Only oenocytes, agglomerates of lymphocytes and connective tissue between the organs of the caterpillar were infected, while the fat body, muscles, gangliar cells, hypodermis, silk glands, gonade primordia and tracheal matrix were free of infection. The cells of the intestinal epithelium were not infected either. The infection induced appearance of latent cytoplasmatic polyedrosis in caterpillars and their mortality resulted from a combined virus and microsporidian effect.

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