

Teknik pengesanan spora *Nosema bombycis* dan kesan jangkitan pada larva *Plutella xylostella*

ABSTRACT

Several conventional staining techniques were employed to detect the life stages (in particular the spores) of *Nosema bombycis* from infected larvae of *Plutella xylostella* (diamondback moth, DBM) and the effects of the infection of *N. bombycis* on the larvae were studied. Larval instars 1, 2, 3 and 4 of the DBM were infected with four different spore concentrations (407150, 41420, 4260 and 420 spores/ l) accordingly by allowing them to feed on artificial diet previously inoculated with the respective spore concentrations. Larval tissues were processed for staining and the number of spores were counted and direct observations on the larvae were carried out at 24, 48 and 72 h post infection. The Gram s, Giemsa's, haematoxylin and trichrome staining techniques were more superior in detecting the spores, sporonts and meronts than the good Pasteurs. The main effect of the infection was mortality which was dose-dependent and that the younger instars were more susceptible to infection than the older ones. Spore concentrations of 407150, 41420 and 4260 spores/ l) caused death to the instars whereas the dose of 420 spores) l was unable to kill the larval instars. The mortality rate of the younger instars was significantly higher ($p < 0.001$) than the older ones. The LC50 and LC95 values of instar 1 and 2 were lower than those of the instar 3 and 4 after 48 and 72 h post infection. This showed that high spore concentrations were needed to kill the bigger size and matured instars. Histological studies on the infected larvae indicated that the infection caused severe cellular damages in fat tissues and the intestine leading to death. Results of this studies showed that life stages of *N. bombycis* in particular the spores were detected effectively using conventional staining techniques and the infectivity and the effects of the infection on the larval tissues of DBM were also established.

Keyword: *Nosema bombycis*; *Plutella xylostella*