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Research Paper

IDENTIFICATION OF TARGET TISSUE(S) OF BmIFV INFECTION IN THE SUSCEPTIBLE / TOLERANT BREEDS OF SILKWORM, *BOMBYX MORI* L. THROUGH IMMUNODIFFUSSION TEST

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ABSTRACT

Among the silkworm diseases, infectious flacherie caused by the virus BmIFV (*Bombyx mori* infectious flacherie virus) is highly prevalent. In India, this disease was first reported by Sato (1992) and later, many have initiated the work on BmIFV. However, there are only a few reports on the susceptibility status of different silkworm breeds / hybrids to BmIFV and only a handful of breeds susceptible to this pathogen have been identified. BmIFV infected larvae exhibit atypical morphological symptoms but not many studies have been conducted so far on the symptomatology of this disease and target tissues during the progressive infection in silkworm. Hence, in the present study, attempts were made to identify BmIFV infected tissue(s) during its progressive infection in the identified susceptible (CSR2) and tolerant (5N) breeds of silkworm through serological test. Immediately after III moult, newly ecdysed 4th instar larvae were per orally inoculated with an infective dose of BmIFV and larvae were reared up to 12 days of post inoculation (DPI). The control batches were also maintained without any inoculation. From both treated and control batches of CSR2 and 5N breeds, different tissues *viz*., haemolymph, midgut, fat body, silk gland, gonads and malpighian tubules were collected daily (0 to 12 DPI) and conducted Agarose gel immunodiffusion test using BmIFV antibody. The results indicated that BmIFV infected only midgut tissue but none other where the precipitin line was formed between central antibody well and antigen well having midgut homogenate. Both the breeds were infected with BmIFV, however, mortality due toBmIFV was more in CSR2 (susceptible) compared to 5N (tolerant) breed. However, in the case of CSR2, the first signs of infection were recorded on 4 DPI and the infection progressed up to 12 DPI. In 5N breed also, BmIFV infected only midgut tissue but not haemolymph, fat body, silk gland, gonad and malpighian tubules. But in this breed, the primary symptoms of infection were recorded on 6 DPI and infection continued up to 12 DPI. Manifestations of the course of infection are discussed.

Key words: *Bombyx mori* L., BmIFV, infected tissue, susceptible/tolerant breed.