Bacillus thuringiensis 멜타-내독소 섭취에 의한 배추흰나비 
(Pieris rapae L.) 幼蟲의 組織病理學的 研究

韓盛植・朴榮學

HISTOPATHOLOGICAL STUDIES ON THE CABBAGEWORM, PIERIS RAPA L. BY THE INGESTION OF BACILLUS THURINGIENSIS $\delta$-ENDOTOXIN

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Abstract

The observation on histopathological changes of the cabbageworm, Pieris rapae L. by the ingestion of Bacillus thuringiensis $\delta$-endotoxin was made in terms of symptoms, blood, midgut and fat body using a light microscope and histochemical techniques.

The changes by the ingestion of Bacillus thuringiensis $\delta$-endotoxin were as follows:

1. The pathological changes were firstly observed at 1/3 of the anterior portion of the midgut, and then the changes spread over to the posterior portion of the midgut.
2. B.t. spores germinated easily and subsequently proliferated vigorously in the midgut.
3. Within 5min after the treatment of the B.t., the striated border of the columnar epithelial cells showed a distortion. The cytoplasm of columnar cells became extremely vacuolated at 70 min after the treatment. Disrupted columnar cells were sloughed into the lumen of the midgut 10hrs after the treatment.
4. B.t. spores germinated and subsequently proliferated in the blood, but the hemocytes disappeared.
5. The fat cells showed an enlarged nucleus, extremely vacuolated structures and then the fat cells were destroyed.