

Purification and Antiserum Preparation of Vd-toxin from a Severe Defoliating Virulence Strain of *Verticillium dahliae* on Cotton

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Abstract: Vd-toxin (*Verticillium dahliae* toxin) had been purified partially with Sephacryl S-200 HR from V₉₉₁ that is a severe defoliating virulence strain of *Verticillium dahliae* on cotton. To take PP-Vd-toxin (partial purified Vd-toxin) as antigen to immunize white rabbit, the antiserum has been acquired. To test the specificity of the antiserum, 10 strains with different virulences have been conducted with indirect ELISA. Among them, all of the four strains of defoliating virulence can be identified with the

antiserum definitely, two of them may be tested with low sensitivity. The result indicated that the antiserum can be used to identify severe defoliating virulence strains of *V. dahliae* on cotton with indirect ELISA, and the P/N value may be used to measure differential types on virulence of vast strains; while there are some interactions on testing some paradoxical type strains. To probe this, PP-Vd-toxin had been analyzed with the capillary electrophoresis, SDS-PAGE and Western blot. The results showed that there is two peaks appeared in capillary electrophoresis; there are eight bands in SDS-PAGE, of which four main bands vary from 11.06 k to 26.37 k Da in molecular weight. There is notable correlation between reaction density of Dot Western blot and the wilting test on cotton leaves.

Key words: *Verticillium dahliae*; defoliating virulence; phytotoxin; antiserum; indirect ELISA; capillary electrophoresis