Advance of Studies on Vegetative Compatibility of *Fusarium oxysporum* and *Verticillium dahliae* in Cotton

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Abstract: This review introduced that Puhalla first recovered auxotrophic mutant and color mutant induced by ultraviolet light in *V. dahliae* and nitrate-nonutilizing(nit) mutant in *F. oxysporum*. A numbering system in *F. oxysporum* was proposed whereby VCGs were related to formae speciales by 3-digit numerical codes. The 38 formae speciales have been subjected to VCG analysis. There was a correlation between VCG and forma specialie based on the examination of a limited number of strains. Isolates in the same VCG belonged to the same forma specialie and strains in different formae speciales were in different VCGs. Within several formae speciales, all isolates of a given race, even from a widespread geographical area, belonged to the same VCG, it has been demonstrated that the relationship between race and VCG was rather simple. Detailed examination of several other formae speciales revealed a much more complex relationship between formae speciales, race, and VCG. VCGs were genetically distinct subpopulations(clonal lineages). Many research results showed there was a correlation between pathogenicity and VCGs in *V. dahliae*. Defoliating strains with high virulence belonged to a VCG and nondefoliating strains with low virulence belonged to another VCG. Every VCG in *V. dahliae* was a distinctly genetic group and belonged to a haplotype.

Key words: cotton; *Fusarium oxysporum*; *Verticillium dahliae*; vegetative compatibility