

15.18 Toxigenicity of *Fusarium oxysporum* f. sp. *ciceri*, the wilt pathogen of chickpea

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The toxigenicity of a devastating fungal pathogen, *Fusarium oxysporum* f.sp.*ciceri* (FOC), which causes wilt of chickpea, *Cicer arietinum*, the third most important legume crop in the world, was studied. The fungus was grown in liquid culture on a defined medium and the filtrates were tested for their ability to kill isolated cells of chickpea. Cell death was determined by the inability of cells to fluoresce when treated with fluorescein diacetate. The relationship between probit percent cell death and Log_2 of the dilution of a given toxin preparation was linear, enabling an LD_{50} value to be extracted. This was defined as 1 unit of activity. Cultural filtrates of five isolates of the fungus gave 15.8, 11.6, 15.9, 42.8 and 71.2 units/ml for Race1, Race2, V2, Jabalpur and FOC5, respectively. Since filtrates of FOC5 were the most toxic, this isolate was singled out for toxin isolation. Toxic activity partitioned quantitatively into ethyl acetate, but about 11% of the activity was not adsorbed by solid phase C18 cartridges. Desorption of the cartridges with incrementally increasing concentrations of methanol yielded a further 34% of the activity. Further purification has been achieved of both the fractions adsorbed and non-adsorbed by the C18 cartridges, and this will be detailed in the poster.