Rapid Diagonosis of *Pseudomonas avenae* by Pathogenicity and Serology

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ABSTRACT

Recently it has been reported the world wide occurrence of bacterial stripe of rice caused by *Pseudomonas avenae* Manns (Shakya *et al* 1985). Approximately 150 isolates had been made from various parts of rice seedlings showing typical bacterial stripe raised from 55 rice seed samples of 29 countries of the world. Identification of bacterium by biochemical test is time consuming. Therefore an attempt was made to identify the isolates by pathogenicity and serology. Each isolate was studied for gram differentiation (Suslow *et al* 1982), oxidase reaction, pathogenicity to rice seedlings (hypodermic injection and clip method) and serology (Ouchterlony gel double diffusion and agglutination).

All pathogenic isolates were gram negative, positive in oxidase and nonfluorescent. Those isolates which were pathogenic to rice seedlings agglutinated strongly (complete clearing with cottony flucose clumps) only with *P. avenae* antiserum. A few isolates showed doubtful agglutination reaction without an appearence of macroscopic flucose cottony clumps. Only the pathogenic isolates produced precipitation bands on Ouchterlony gel double diffusion test. The precipitation bands produced by these isolates were 1 to 3 indicating *P. avenae* is serologically heterogenous. It is suggested that *P. avenae* can be rapidly identified by pathogenicity and serology.

Biological Control of Bacterial Wilt of Tomato by Non-pathogenic Strains of *Pseudomonas glumae*

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Owing to much effort made by many chemists and plant pathologists, various chemicals effective in controlling plant diseases have been developed. By application of such chemicals, the majority of plant diseases caused by fungi are able to be controlled at present. However, most of bacterial diseases and virus diseases are still remained difficult to control by chemicals.

To control these embarrassing plant diseases, some measures based on the cultivation practices have been recommended. Such cultivation practices, however, are not always sufficiently effective.

Since early 1970s when Dr. Kerr and his coworkers reported on the efficacy of the