

Sith Jaisong 2010: Detection of Seedborne Fungi on Rice Seeds and Application of Test Results for Seed Treatment Decision. Master of Science (Plant Pathology), Major Field: Plant Pathology, Department of Plant Pathology. Thesis Advisor: Associate Professor Somsiri Sangchote, Ph.D. 100 pages.

Investigation of fungal seedborne pathogens on 45 seed samples of *Oryza sativa* L of 6 cultivars including Chai Nat1, Phatum Thani1, Suphan Buri1 Suphan Buri3 Phitsanulok2 and Khao Dawk Mali 105 from 23 Rice Seed Centers, Rice Department by blotter method following ISTA rules was conducted. *Bipolaris oryzae*, *Alternaria padwickii*, *Curvularia* spp. and *Fusarium moniliforme* were the important pathogens and the most common recorded in all seed samples. *B. oryzae* and *A. padwickii* were detected at high level, 19.2, 14.4 % seed infection, respectively. *Curvularia* spp. and *F. moniliforme* were 8.0 and 4.9 % seed infection. These fungi were isolated from parts of seedling blight symptom. The percentage of fungi isolated from seedling blight symptom was statistically similar in all four cultivars of rice, Chai Nat1, Phatum Thani1, Suphan Buri1 and Khao Dawk Mali 105. *B. oryzae* was highly pathogenic to seeds and seedlings, causing seed rot, root rot and reducing quality and quantity of seedlings. The others had partial effect to seed and seedling. An evaluation of infected seedlings using top of paper, between paper and sand method were considered. The top of paper gave a higher accuracy than between paper method and more suitable than sand method. Simple correlation studies between percentage seeds infected with *A. padwickii*, *B. oryzae*, *Curvularia* spp. and *Fusarium moniliforme* and seedling infection in the laboratory. High positive correlation ($r = 0.89$) was obtained between incidence of *B. oryzae* on the seeds and seedling infection. Seed treatment with 3.0 and 5.0 % w/w mancozeb were highly effective control of seedling disease. Seed treatment with 3.0 % w/w mancozeb could eliminate completely seed infecting *B. oryzae* when seed lots have less than 7 % of *B. oryzae* infection or 10.5 % of infected seedling.

Student's signature

Thesis Advisor's signature