SCREENING OF POTATO CULTIVARS AGAINST COMMON SCAB DISEASE IN WEST BENGAL

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Common scab of potato caused by Streptomyces scabies (Thaxter) Waksman & Henriki is one of the most important diseases of potato and has gradually become a major disease in the plains of West Bengal. Twelve potato cultivars obtained from CPRI, Shimla, were planted in a naturally infested field at Adisaptagram Block Seed Farm, Hooghly, in two successive cropping seasons (2002-2003 and 2003-2004). Out of twelve cultivars, three cultivars (Kufri Lalima, Kufri Sindhuri and Kufri Anand) were least susceptible, three cultivars (Kufri Kanchan, Kufri Badshah and Kufri Giriraj) were medium susceptible, three cultivars (Kufri Pukhraj, Kufri Sutlej and Kufri Jawhar) were highly susceptible and rest three cultivars (Kufri Jyoti, Kufri Chandramukhi and Kufri Ashoka) were very highly susceptible. In general, the red skinned cultivars were least susceptible to the scab pathogen. Besides, cv. Kufri Anand being a white skinned cultivar, was also among the least susceptible. Majority of the hybrids included in this programme were very highly susceptible to the disease. Hence, cultivars found least susceptible in this study may be useful against scab pathogen in breeding programme for this region.

DETECTION OF SELF-FERTILE ISOLATES OF PHYTOPHTHORA INFESTANS IN INDIA

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Until 1984, Phytophthora infestans, the incitant of potato late blight, was known to reproduce sexually only in Mexico where both A1 and A2 mating types existed in equal proportion. With the appearance of A2 type in 1984 in Europe and in 1990 in India, the possibility of pathogen’s sexual reproduction and oospore formation arose. Oospores of P. infestans were recorded in spring season in nature and in culture of single isolate. Studies here aimed to monitor the fungus population for oospore formation and possibility of its survival in soil. Blighted foliage and stems were collected from the fields during November to April from 1999 to 2004 and inoculated in tubers. Isolations from inoculated/infected tubers and also from fresh diseased foliage collected from fields were made on Pea agar media. The culture was incubated at 18±1°C for observing pathogen’s growth and cultures were observed under microscope to see whether oospores were found or not. Isolates forming oospores, irrespective of their number, were identified as self-fertile and those without oospores regarded either of A1 or A2 strain after pairing with known tester. Out of 54 isolates obtained during the course of study from 1999 to 2004, 16 (29.62%) were observed forming oospores and identified as self-fertile. Remaining isolates belonged to either A1 or A2 mating types. A2 type was predominant till 2001 (80%) whereas the native population A1 again dominated during 2003-04. Pathogenicity tests of self-fertile isolates conducted on detached leaves of cvs. Kufri Chandramukhi and Kufri Jyoti gave positive reaction. The critical examination of self-fertile isolates revealed that oospore formation initiated in 8 days period and one month old cultures revealed abundant oospores. The self-fertile isolates have also been reported to occur in England and in United States. The occurrence of self-fertile isolates during the present studies suggests the increased possibility of oospore formation in the region leading to greater genetical diversity in P. infestans population and also pathogen’s ability to over-summer in soil. The findings could be of significance in developing strategies for the effective management of late blight.