EFFECT OF MIXED CROPPING IN POTATO ON SURVIVAL AND PERPETUATION OF R. SOLANACEARUM CAUSAL AGENT OF BACTERIAL WILT OF POTATO

Venkatesh 1, K.M. Indiresh 2, S.V. Patil and Siddagangaiah 1
1 AICPIP, Agricultural Research Station, Madenur, Hassan-573220, Karnataka, India
2 AICRP on Agro-Forestry, UAS, BANGALORE-560024, Karnataka, India

Bacterial wilt of potato caused by Ralstonia solanacearum (Smith) Yabuuchi et al. is a serious disease, causing enormous loss to the farmers. The disease is most destructive and widespread in Karnataka and causes up to 75% loss in yield in some localities of Karnataka. Presently, to manage the disease under rainfed situation of southern transitional zone of Karnataka, the integrated management practices namely (1) Crop rotation with finger millet, (2) Fall ploughing and (3) Application of bleaching powder @ 15 kgs/ha, are recommended. However, these strategies are effective in monocrop situation, while in mixed cropping system, effectiveness of the integrated practices varies. Three-year field trials were conducted during 2002-04 to study the effect of mixed cropping in potato on survival and perpetuation of R. solanacearum-causal agent of bacterial wilt. It was revealed that maximum disease incidence of 56.64, 64.16 and 65.40 per cent was recorded in mixed cropping i.e., potato + castor (long duration var.) compared to monocrop of potato (33.30, 27.75 and 24.20 per cent disease) during 2002, 2003 and 2004 trials, respectively. Disease incidence in potato + beans and potato + maize was less as compared to monocrop of potato. Correspondingly, maximum pathogen population in rhizosphere and soil was recorded in potato + castor (long duration var.) mixed cropping system compared to monocrop of potato and other mixed cropping systems.

EVALUATION OF FUNGICIDES/ FUNGICIDE COMBINATIONS AGAINST POTATO LATE BLIGHT IN AUTUMN TPS GROWN CROP IN MEGHALAYA HILLS.

B.K. Das, V.K. Gupta, Shantanu Kumar 1, P.H. Singh 2, L.K. Baishya and Uma Sah 1
1 Central Potato Research Station, Shillong-793009, Meghalaya, India
2 Centarl Potato Research Institute, Shimla-171001, HP, India

Autumn TPS grown crop has been recognized as an important means to produce quality seed in Meghalaya hill condition for its subsequent utilization in the summer season and late blight is one of the devastating diseases of potato that cause considerable yield losses in the crop. Field experiments were conducted during the year 2003 and 2004 in autumn season with TPS grown crop (hybrid 92-PT-27) at Shillong to evaluate four fungicidal spray schedules for their effectiveness in controlling late blight of potato. Three commercial fungicides namely Dithane M-45 (mancozeb 75% WP @ 0.2%), Indofil M-45 (mancozeb 75% WP @ 0.2%) and Ridomil MZ-72 (metalaxyl 8%+ mancozeb 64% WP @ 0.25%) were tested alone and in different combinations. The experiment was conducted in randomized block design and each treatment was replicated four times. Two years pooled data revealed that all fungicidal treatments were significantly superior to untreated plots in reducing AUDPC and in increasing the yield. The blighting rate (AUDPC) was least (83.95) in the treatment consisted of two sprays of Ridomil MZ-72 plus three sprays of Indofil M-45 in the sequence of systemic, contact, systemic, contact and contact, which was followed by two sprays of Ridomil MZ-72 plus three sprays of Dithane M-45. However, both the treatments were rated at par in checking the blighting rate. Plots receiving two sprays of Ridomil MZ-72 plus three sprays of Indofil M-45 recorded maximum yield (146.8 q/ha). Two sprays of Ridomil MZ-72 plus three sprays of Dithane M-45 gave result at par with previous treatment. The present study confirmed that alternate spray of Ridomil MZ-72 @ 0.25% at 15 days interval along with mancozeb @ 0.2% at 8 days interval would be useful for effective and economic management of late blight and minimize the yield losses in autumn grown TPS crop in Meghalaya hills.