

Research Article

Effectiveness of Seed Treatment with Recommended Fungicides on Seed, Soil Borne Diseases and Productivity of Cotton

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Abstract

Seed and soil borne diseases of cotton collectively refer to a group of diseases that affect the germination of cotton seed, emergence, survival and plant stand in the field. The damage caused by these pathogens ultimately reduces the cotton productivity and production worldwide. Sometimes, chemical fungicides recommended for management of these fungal pathogens are not performing up to the mark in the field. The one of the reason may be due to increased resistance of seed and soil borne pathogens against recommended fungicides. Hence, the study was conducted to reexamine the effectiveness of age old recommended commercial fungicides for cotton seed treatments. The field experiments were conducted during three consecutive years from 2012-13 to 2014-15 using seed treatment fungicides namely carboxin, thiram and carboxin + thiram at four different locations in four states of India including Andhra Pradesh, Karnataka, Gujarat and Tamil Nadu. The fungicides (carboxin, thiram and carboxin + thiram) with three doses each (recommended dose, one above and one below) were evaluated as seed treatment and found to be effective in managing the seedling mortality, alternaria blight and bacterial leaf blight diseases. However, the highest disease management was recorded with the doses above the recommended dose of carboxin + thiram (4.5 g Kg⁻¹) followed by carboxin + thiram (3.5 g Kg⁻¹) and thiram (4 g Kg⁻¹) and these treatments also enhanced the yield by 40.7, 37.3 and 29.4 per cent, respectively irrespective of locations, varieties and pathogens. This study is indicating that the fungicides employed and or recommended to control these diseases in cotton are still effective and the higher doses than their recommended doses were found to be better than the recommended dose at all the location within the country. Thus, the dose above the recommended dose of CIB & RC may be used for effective management of these diseases and enhancing the cotton productivity. However, environmental studies should be conducted prior to any recommendations.

Key words: Cotton, disease management, productivity, recommended fungicides, seed treatment

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