Comparative Efficacy of Strobilurin Fungicides Against Leaf Spot and Blight Disease of Sunflower

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Abstract

Sunflower is one of the major oil crops grown in India. Its production can be limited by leaf spot and blight disease caused by Alternaria helianthi (renamed Alternariaster helianthi (Hansford) Simmons) which decreases seed germination and seedling survival. Apart from the disease causing ability, it also reduces the nutritious value by producing toxins. In the present study three commercial formulations of strobilurins, viz, azoxystrobin, trifloxystrobin and kresoxim-methyl were evaluated for their efficacy against sunflower leaf spot and blight disease. Seed treatment with different concentrations of strobilurins recorded improved germination in comparison to control. Azoxystrobin seed treatment recorded improved germination (83%) at 10 µg/ml. The strobilurins evaluated were not phytotoxic to sunflower seedlings applied as seed treatment or foliar spray. Varied degree of protection against Alternaria leaf spot and blight were recorded on seedlings in a greenhouse test following seed treatment and foliar spray with strobilurin fungicides. Among the strobilurins tested as seed treatment in field experiments, azoxystrobin proved to be the best by offering 60% disease protection. Further, seed treatment followed by foliar application improved protection (67-71%) against A. helianthi in treatments of azoxystrobin and trifloxystrobin. Foliar spray 10 µg/ml alone azoxystrobin or trifloxystrobin provided disease protection of 61-65%.

Key words: Alternariaster, Alternaria helianthi, azoxystrobin, Helianthus annuus, trifloxystrobin, kresoxim-methyl, strobilurins.