Field Testing of Contans WG Suggests that the Product may be a Useful Tool for Managing Sclerotinia Diseases in North Dakota

Michael J. Wunsch, Michael Schaefer, and Billy Kraft

Sclerotinia diseases are ideal targets for biological control. Unlike many other fungal diseases, the spores that cause Sclerotinia diseases on soybeans, dry beans, sunflowers, and other broadleaf crops are not produced on diseased plants. All spores originate from apothecia (tiny mushrooms) produced from sclerotia (resting structures of the pathogen) in the soil. If the sclerotia are degraded by another organism in the soil, the sclerotia do not germinate to form apothecia and do not produce spores, and disease cannot develop.

Contans WG is a commercial formulation of *Coniothyrium minitans*, a fungus that degrades Sclerotinia sclerotia. It is marketed for Sclerotinia control in North Dakota, but little information is available on its efficacy.

In October 2011, field trials were established in Carrington under pivot irrigation to evaluate Contans under different (1) application rates, (2) application timings, and (3) incorporation methods. Contans applications were made in October 2011 and April to May 2012, and soybeans ('Ashtabula', a conventional variety from NDSU) were planted on May 11.

In this study, Contans reduced both the viability and the vigor of sclerotia, decreasing both the number of sclerotia that germinated to form apothecia and the number of apothecia produced per sclerotium. Fall applications were more effective than spring applications, the performance of Contans was identical at 1 lb/ac and 2 lbs/ac, and the timing of spring applications had little effect on the performance of Contans. Manual incorporation (harrowing to 1.5 inches) of Contans provided similar results as water incorporation (1 inch of water applied with overhead irrigation).

The results from this study are expected to most accurately reflect the outcomes that can be anticipated when Contans is applied directly to sclerotia and sclerotia-infested residues immediately after the harvest of a crop that suffered a severe outbreak of Sclerotinia. Sclerotia were primarily on the soil surface in this study; supplemental sclerotia were distributed over the soil surface in October 2011, and they were not incorporated prior to applying Contans.