ARS-Led Effort Tackles White Mold

Thanks to the hard, protective casings it forms, called "sclerotia," the fungus *Sclerotinia sclerotiorum,* or white mold, can slumber in the soil for years until conditions become favorable enough for it to germinate and infect its victims—some 408 different plant species. In commercial fields, this sclerotia-forming ability makes the fungus especially difficult to control.

Indeed, outbreaks of white mold in U.S. sunflower, soybean, canola, dry edible bean, and pulse crops (dry peas, lentils, and chickpeas) cost around $252 million annually in yield losses and diminished quality. In 2002, the Agricultural Research Service launched the National Sclerotinia Initiative, a multiorganization effort to help farmers better protect these important crops from white mold.

Participants include more than 30 scientists from several ARS laboratories, state universities, and land-grant institutions and members from about a dozen agribusinesses and commodity groups, notes William P. Kemp. He administers the *Sclerotinia* initiative as director of ARS's Red River Valley Agricultural Research Center in Fargo, North Dakota.

Under the 5-year-old effort, scientists conduct their research with four strategic goals in mind: to develop new, disease-resistant germplasm lines and varieties of the seven crops covered under the initiative; to learn more about white mold's biology and development; to decipher white mold's genomic secrets and its disease epidemiology, which varies with the type of plant infected; and to devise new diagnostic tools and disease-management strategies based on information from all the above.

The scientists have presented their research before peers, producers, and other stakeholders at annual conferences hosted by ARS in collaboration with the National Sunflower Association, U.S. Dry Bean Council, U.S. Canola Association, U.S. Dry Pea and Lentil Council, and United Soybean Board.

PHILLIP MIKLAS (D877-1)

Snap bean pods infected with white mold.

Below are a few initiative goals highlighted this past January during the annual conference in Bloomington, Minnesota:

• Develop a risk-assessment map and indices for dry bean crops, such as snap beans, which suffer annual losses of around $46 million, and for canola and other crops;

• Evaluate fungicide treatments to control *Sclerotinia* head rot in sunflowers and rots and wilts affecting leaves and stems of dry beans;

• Evaluate the biological-control potential of *Coniothyrium minitans* and *Sporidesmium sclerotivorum,* two beneficial fungi that parasitize sclerotia in order to feed and grow;

• Develop new screening methods to speed evaluations of plants for their susceptibility or resistance to *Sclerotinia,* including a misting system to inoculate plants with acospores, an infectious stage of white mold; and

• Identify resistant germplasm lines of lentil, soybean, and sunflower.

Also at the conference, says Kemp, "An industry panel provided an update on technologies developed by initiative scientists that are currently being used to help growers manage this important disease."

To learn more, visit the National Sclerotinia Initiative website at www.whitemoldresearch.com/index.cfm.—By **Jan Suszkiw,** ARS.

BRADY VICK (D880-1)

Sunflower plant infected with *Sclerotinia* head rot.