

Scab Forecasting Data Management Meeting
March 16, 2001
Ohio State University/ OARDC, Wooster

A meeting to discuss and evaluate the progress toward the development of a scab forecasting model was held at the Ohio Agricultural Research and Development Center, Wooster, OH on March 16, 2001. Meeting participants represented the core of individuals participating in cooperative studies to monitor weather conditions and pathogen population levels from different wheat growing regions of the US. Participants included Dr. Len Francl (NDSU), Dr. Yue Jin (SDSU) and Mr. Larry Osborne (SDSU) from the northcentral, hard-red spring wheat states and Dr. Greg Shaner (Purdue), Mr. George Buechley (Purdue), Dr. Erick De Wolf (Penn State), Ms. Jessica Engle (Ohio State), Dr. Larry Madden (Ohio State) and Dr. Pat Lipps (Ohio State) from the Great Lakes, soft-red winter wheat states.

The morning began with a search for enough extension cords to plug in all the lap top computers containing weather and scab severity data from each location. Dr. Erick De Wolf took charge of the meeting and set the stage for the days work. Three major areas were discussed: the Fusarium Head Blight Risk Assessment model, critical evaluation of the monitoring data from 1999 and 2000, and plans for data collection in 2001.

Dr. De Wolf and Dr. Larry Madden lead the discussion on the FHB Risk Assessment Model developed from historic weather and disease severity data. They explained the interrelationships among temperature, relative humidity and precipitation before, during and after the critical anthesis period of the wheat crop in relation to disease severity. The Risk Assessment Model was based on data from 50 location-years and had an 84% accuracy level of predicting epidemics. Critical parameters for the model included the temperature and precipitation events seven days prior to anthesis and the duration of high relative humidity ten days after anthesis. The group had a very thorough discussion of the epidemics that were incorrectly predicted by the model (false positives and false negatives) to help understand the limitations of the model. The group concluded that the Risk Assessment Model was sufficient to begin preliminary evaluation in several locations during 2001.

Weather and pathogen monitoring data collected during 1999 and 2000 were evaluated by the group during the afternoon session. It was generally agreed that the Campbell weather stations were performing well and that recorded weather data could be readily manipulated via several different spreadsheets. Dr. De Wolf provided guidelines for setting up spread sheets for rapid evaluation of the data. The group then discussed the problems associated with monitoring pathogen inoculum in the field. Burkard spore traps have left a lot to be desired for collecting spores from the air, but wheat head washes, although variable, appeared to provide more consistent data. The group discussed the best ways to analyze and present the pathogen monitoring data for model development. The final discussions focused on improving data collection for the upcoming season. The group agreed to continue monitoring procedures as was conducted in 2000 to provide two years of consistent data across the monitoring locations.

Although the cooperators met for only one day to discuss the cooperative Scab Forecasting program, all felt the time was very well spent and all came away with a unified understanding of the project goals and procedures.