Disease Management in a Flooding Season

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Disease Management in a Flooding Season

Abstract
This planting season has been so wet in Iowa with flood happening every week. This naturally leads to questions what will happen to crop diseases. So far this season has some similarity to what happen in 1993, my first year at Iowa State University and those experiences have stayed with me. That year planting was so delayed that planting related questions were a major topic to ISU agronomy extension even in early summer field days. Looking at what happened in 1993 may provide some clues to disease management this season if the weather pattern continues to produce the similarity.

Keywords
Plant Pathology

Disciplines
Agricultural Science | Agriculture | Plant Pathology

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In corn, two diseases were prevalent in 1993, crazy top and corn rusts which include both common corn rust and southern corn rust. Corn plants which stood in water for a long time had relatively high incidence of crazy top, a disease caused by downy mildew fungus. Southern corn rust showed up as early as late June and was widely spread.
However the disease may not be a problem this year because in 1993 the disease spread to Iowa from south. This spring has been dry in Florida and Texas; both are the source regions of the fungus. The disease is unlikely to arrive so early. If the disease was prevalent, we may see return from the use of fungicide control.

Soybean diseases were production problems in 1993. Brown stem rot, a disease occurs in cool and wet weather, was prevalent in the season causing lodging in severely infested soybean fields.

SDS was prevalent in many north central states and was found in Iowa for the first time. This year the disease may be problem even we had a late planting because prolong cool weather during the planting season is favorable to the fungus. Because the management measures for these two diseases are made before or during planting, there is nothing we can do about now, except for scouting to gather management information for future crop years.

In the fall of 1993, premature defoliation from foliar diseases was prevalent and many soybean fields turned yellow before September. Two reasons caused the premature defoliation that fall. First, fields were flooded for so long and soybean did not have good root systems. Second, the excessive rainfall led to the outbreaks of brown spot, a rain-borne fungal disease, and other foliar diseases, which defoliated soybean leaves.

So keep an eye on foliar diseases, especially brown spot this season. Preventative measures can control this disease. The first is to use mid-season tillage which can improve root growth. Secondly, we could control foliar diseases with the fungicides if the disease risk is high this summer. Numerous studies consistently show that fungicide sprays pay off when significant number of diseases are present.

Soybean white mold has been a concern to many producers in eastern Iowa and the disease was prevalent in every even-year in the last ten years. In this season, this disease poses less threat because of delayed planting, making it unlikely the canopy will close early, a necessity for a white mold outbreak. White mold was not a problem in 1993.

It is difficult to predict what the climate will be for the rest of growing season. So watch national weather forecasts and scout for diseases to help you make good management decisions. Also, it may be worth to dig out 1993 ICM articles.

XB Yang  is a professor of plant pathology with research and extension responsibilities in crop diseases.