Soybean rust update

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Abstract
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How is soybean rust developing in Brazil?

According to Brazilian plant pathologists, soybean rust occurred early and had high disease pressure in the past growing season in Brazil. In central and northern soybean production regions, excessive rainfall favored the development of the disease. Soybean rust was not important in southern Brazil due to drought conditions. Jose Y. Tadashi, a Brazilian plant pathologist who works for EMBRAPA, reported on the situation of soybean rust at the World Soybean Research Conference early this March and estimated that US$ 750 million were spent with fungicides to control soybean rust during the last season in Brazil.

Has rust moved north of the equator?

Most producers understand that the northward movement of this disease poses a threat to U.S. soybean. In January a report from South America indicates that soybean rust has occurred in Roraima, a Brazilian state north of the equator with 10,000 hectares of soybean. However, two Brazilian plant pathologists whom I have contacted recently could not confirm this information. They said that so far, the rust is still in the south of the equator.

Can winds carry the rust from South America to the United States?

A recent study indicates that the chances for viable spores to move by wind directly from South America are very small. Using computer-modeling approaches, scientists (climatologists at St. Louis University and plant pathologists at Iowa State University) showed that viable spores released from South America were far from reaching this country. For the rust to be successfully introduced, rust spores have to land on green leaves of host plants. Therefore, due to the fact that the growing season in Brazil is our winter, direct introduction
by wind is quite unlikely.

**What about land bridging?**

Land bridging is considered a more likely natural pathway in the northward movement of soybean rust. Keep in mind that besides natural pathways, rust can also be introduced by other means, such as accidental introduction by tourists, spore-carrying materials, or intentional means.

**Will rust show up this season in North America?**

If all the potential means for introducing the disease are considered, it is difficult to predict when the disease will occur in North America. If we consider only the natural pathways, the chances for the disease to show up this coming season are not high because the disease has not been found in areas north of equator. Besides, if the rust does move beyond the equator, the disease is likely to be detected in countries south of the United States, in its route to reach this country. Historically, this has been the case with barley stripe rust and sorghum ergot, which moved into the United States from South America.

**What actions can producers take?**

This winter, Iowa farmers had questions about the purchase of chemicals to control rust this coming season. Since the disease has not been detected in regions between the United States and the equator, it seems too early to stock fungicides for a disease which is yet to show up. Besides, even if indeed the disease reaches North America, it would need time to establish itself and build up its populations to sufficiently high levels in the southern states before it can further spread to the northern soybean production region. We should have time to respond if we can detect the disease early upon its arrival in the south. Furthermore, the level of foliar disease occurrence depends on weather in a growing season, which varies from year to year. In a dry season, the disease will not be a problem. Check NOAA seasonal predictions if you hear new progress on soybean rust movement.

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