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Soybean rust update and potential early season activities

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Abstract
As the planting season progresses, there have been questions on possible spore movement from overwintering regions to the Gulf Coast states, such as Mississippi, Louisiana, and Texas, which are considered more epidemiologically important sources to spread inoculum to the northern states. It is expected that each new event reported may lead people to think of its potential impact on the future spread of the disease. This article addresses some of the issues.

Keywords
Agronomy

Disciplines
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Sample Date	PEAQ Est. RFV (Relative Feed Value Index)	Harvest/Storage "Adjustment"		"Adjusted" RFV of Forage in Storage if Cut on Date
May 5	230	(230 x 10% = 23 RFV points)	=	207
May 10	210	(210 x 10% = 21 RFV points)	=	189
May 15	190	(190 x 10% = 19 RFV points)	=	171
May 20	175	(175 x 10% = 17 RFV points)	=	158
May 25	165	(165 x 10% = 16 RFV points)	=	149

If a producer will require 6 to 8 days to harvest all of the first cutting, consider beginning harvest a few days earlier than the exact target quality, so that the average forage quality stored is at the target level.

Other site-related or local conditions that may influence the decision:

- South-facing slopes develop faster than north-facing slopes.

- Stands on lighter textured soils develop faster than on heavier textured soils.

- Winter-injured stands should not be considered for a high-quality harvest and should be allowed to mature into early to mid-bloom stage to recover vigor.

- Newer, high-quality varieties may hold quality 2 to 3 days longer than standard varieties.

The PEAQ procedure is most accurate on good stands of healthy alfalfa and should not replace standard laboratory analysis, hay, or silage for ration balancing.

PEAQ sticks can be purchased from the Midwest Forage Association, using an order form found at **http://www.midwestforage.org/peaq.pdf**.

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Plant Diseases

Soybean rust update and potential early season activities

by X. B. Yang and E. M. Del Ponte, Department of Plant Pathology

As the planting season progresses, there have been questions on possible spore movement from overwintering regions to the Gulf Coast states, such as Mississippi, Louisiana, and Texas, which are considered more epidemiologically important sources to spread inoculum to the northern states. It is expected that each new event reported may lead people to think of its potential impact on the future spread of the disease. This article addresses some of the issues.

Current status: According to reports from the eastern-southern states, soybean rust has been confirmed in a kudzu patch in central Alabama with a few leaves showing symptoms. The infected plants have been removed. No new infections were found in a previously infected kudzu patch in Georgia, where infected plants have been destroyed. There has been no new sporulation noticed in kudzu in northern Florida, possibly due to lack of rainfall and dry conditions. Recent rainfalls in the southern region are likely to favor rust development, although the level of activity is yet to be determined.

There are two active source areas for soybean rust in the eastern-southern region that includes Florida and Alabama. New development from current regions will depend on rains during this and next week. New development is more likely to be seen in a few weeks after the effects of recent rains take place. Last week, findings of yet-to-be-confirmed activity of soybean rust in a Mexican soybean growing area have been a consideration for potential reintroduction of the fungus to the continental United States. In the same way, new detections in May in other southern states could affect the disease in fields in those regions if favorable weather conditions continue.

Mexico effects. In a previous article, we showed that better climate conditions for the disease to establish and for the fungus to sporulate in Texas soybean fields are found earlier in the season up to the time soybeans already reached flowering—by late June. Since inoculum is less available early there, and so far no finding has been confirmed, an assessment of spore reintroduction from Mexico may help to better evaluate the threat to U.S. soybeans.

We used simulation models to map potential spread and deposition of spores using 30-year historical data. Results showed that during May, there is a low probability of the spores reaching northern Texas, Oklahoma, Kansas, and Nebraska from Mexico (generally a 1- in 10-year event). Most of the spores would reach areas in the South where soybean is less cultivated. Although this is good news, it is only an example of the low suitability of climate to spread the rust to the United States from a Mexican source using a model that accounts for spore transport and survival. Other undetected sources may exist in the South with less significant importance in spore production.

At this time, kudzu is growing well in Texas and no rust is confirmed, possibly due to a dry period that occurred. With increasing rainfall in northern regions of the state, the risk for the disease to establish increases as well. If inoculum is present or reintroduced from Mexico, it is likely rust will first be found on kudzu plants in Texas. If favorable weather conditions continue, rust should not be found earlier than mid-June on spring-planted soybeans. Because of wind direction and speed, it is important to focus our attention on new reports from the South, especially Alabama, Texas, and Louisiana.

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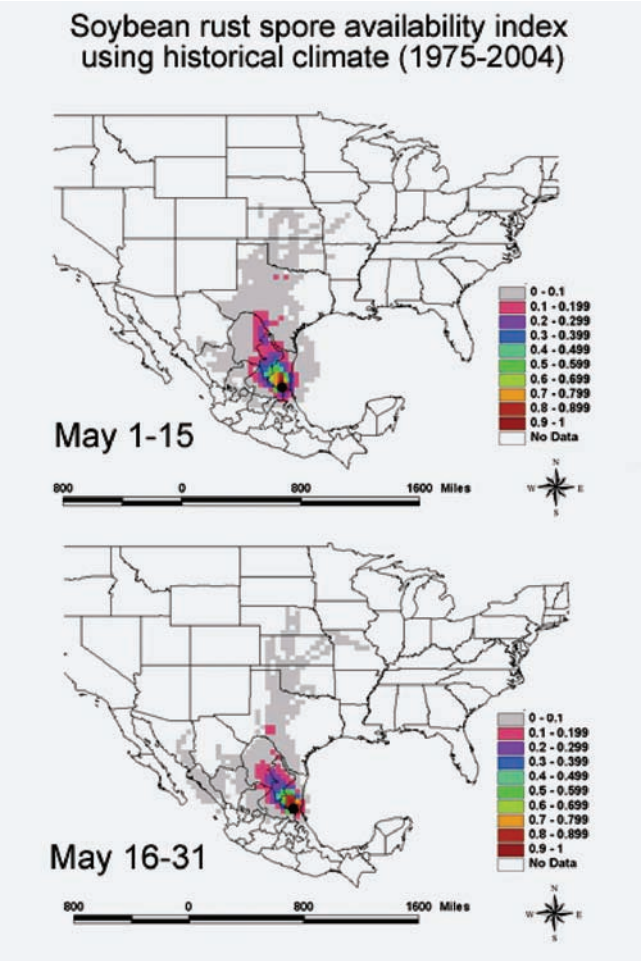

Computer-projected soybean rust spore pathways for the month of May. Potential dispersal pathway of soybean rust *(P. pachyrhizi)* from a soybean area in Mexico to the United States. Color code is relative frequency of spore availability.

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