Soybean rust studies in southern Brazil.

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Asian soybean rust was first detected in the state of Rio Grande do Sul (RS), Brazil, by the end of the 2001/02 summer crop season. In that time, grain yield loss was estimated to be 43% for the cultivar BRS154 and 23% for the cultivar BRS153. In the following seasons, rust was observed in almost every field, but with low severity due to drought or due to unfavorable rainfall distribution. Even so, 359 districts with occurrences were registered in the state of RS in the 2005/06 season. This disease appeared mainly in the reproductive growth stage (99% of the cases in 2005/06, being 44% of the occurrences in the beginning seed stage - R5). February was the month with the highest incidence (55%).

Epidemiology studies, started in 2002/03, were based on fields sown on three or four seeding dates with two cultivars. In most cropping seasons the first symptoms appeared when plants were in the reproductive growth stage. The greatest severity and Area Under the Disease Progress Curve (AUDPC) occurred on the latest seeding date. Severity was lower or absent in the earlier-maturing cultivar sowed on the first seeding date (October).

Chemical control of rust has been evaluated as part of the National Fungicide Efficiency Trial Net. In 2003/04 and 2005/06, no significant differences were detected between the control without fungicide and any of the treatments with different fungicides.

In 2004, the genotypes that stood out with the lowest disease indices (incidence x severity) were PF 001339, BR 993313, and MGBR 48 (Garimpo RCH), and, in 2006, PI 224270, PI 379618 TC1, PI 417115, PI 423956, Shiranui and Kinoshita, with RB (reddish-brown) lesion type and lower sporulation and severity, besides PI 471904, with RT lesion type (reddish-brown with some TAN lesions type).

Final considerations

In RS, the highest yield losses were observed at the small farm landowners, and that could be related to the lack of rust scouting, misidentification of the disease in its early symptoms, or the delay of the ideal time for fungicide spraying.

In commercial soybean fields sowed in the optimum sowing date, that is between Oct 1 (st) and Dec 31 (st), the first pustules appear when the soybean plants are in the reproductive growth stage.