

PolicyPennings by Dr. Daryll E. Ray

## Brazil has mammoth land resources and world-class plant breeding research programs

On our fifth day in Brazil we discovered just how small the world is when we met another agricultural tour group at our hotel in Rondonopolis, Mato Grosso (MT). This group, a young-adult agricultural leadership class, was from Oklahoma State University where Daryll taught for twenty years. They, like us, were in Brazil to study soybean production, Asian Soybean Rust, and the impact of Brazil on international agricultural trade. Not so surprisingly, both groups were going to visit many of the same places, just in a different order.

Our first stop was the agricultural research station run by the Mato Grosso Foundation, a private foundation that several years ago severed its ties with EMBRAPA, the Brazilian national crop research agency. There we were met by Foundation Superintendent Dario M. Hiromoto who gave us a presentation, "The Brazilian Agriculture on Cerrado Region." In that presentation he told us that the 2002 world ranking of Brazil's production places them in first place in citrus, coffee, sugar cane, sugar, and papaya. In that year Brazil ranked second in the world in soybean, beef and chicken production; third in corn production; sixth in milk and hogs; and seventh in cotton. Many of those products are of interest to producers in various regions of the US.

The Cerrado region contains 500 million acres of which 45% is suitable for agricultural production. In MT alone the soybean production area grew nearly 50% during a recent two year period - from 10.6 million acres in the 2002/03 cropping cycle to 15.0 million acres in the 2004/2005 cropping cycle. The Cerrados region (2002) produced 43% of the country's beef, 23% of its coffee, 34% of its rice, 59% of its soybeans, 65% of its cotton and 29% of its corn. Most of this growth has taken place over the last 25 years. In our travels in MT we saw beef, soybeans, cotton and some corn. We must have missed MT's coffee, rice and sugar areas.

He spoke of the need to balance production and preservation of this important ecosystem and the role of the Mato Grosso Foundation in developing technologies to preserve the environment. He also spoke of the growing world population and the need to increase agriculture by intensifying the use of present agricultural lands, the need to improve the factors of production like genetics, chemicals and fertilizers and the expansion of cultivated area with Brazil representing a major source of new cultivated area. Clearly, Brazil wants to be a world class player in the agricultural arena.

The Mato Grosso Foundation is Brazil's largest private plant breeding research program. Overall they have 76,400 experimental plots as a part of tests for canker and cyst nematode control, Asian Soybean Rust, as well as for the development of varieties suited to the conditions of the Cerrados. In 2004 and 2005 they released varieties tolerant to soybean canker and soybean cyst nematodes. In 2006 they will release a variety with a stacked gene that will be tolerant of both diseases. Hiromoto expects that they will release their first generation of soybean plants with resistance to Asian Soybean Rust in 2008, with a stacked Roundup Ready™ rust resistant variety in 2011.

After departing Mato Grosso Foundation's test plots we drove to APROSMAT, don't ask us to translate what these letters stand for. APROSMAT is a state of the art facility that has two functions: the certification of seeds, primarily soybeans, and the diagnosis of soybean diseases. We were told that this is the premier testing facility in all of Latin American. From what we saw, we had no reason to question that claim.

We were there during slack season and still a dozen workers were busy doing a visual inspection of soybean seed samples and recording their observations. In peak season, the seed samples come in by the pallet load and all of the visual inspection stations are filled. In a room which we could not enter they were conducting germination tests on the seeds.

The disease testing lab was across the courtyard from the seed inspection area. In recent years they have seen an upswing in Asian Soybean Rust, but more traditional soybean diseases are also diagnosed there. One of the interesting pieces of data they collect is the age of leaf and plant samples sent in and the disease diagnosis. That way they can identify the plant stages that are critical for the development of various soybean diseases.

As we reflect on what we saw on Monday morning, February 13, we were reminded of the Rogers and Hammerstein song from "Oklahoma," "Everything's up to date in Kansas City." Except that this time its "Everything is up to date in Mato Grosso, they've gone about as fer as they can go" - well, at least fer now.

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