



Soybeans in Brazil

Atento, a new solution for managing Asian rust

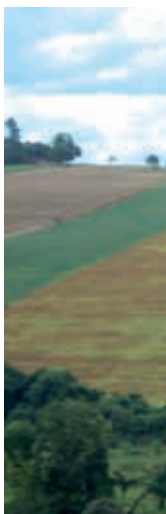
The benefits of soybean production for the Brazilian economy are undeniable. It is currently the country's most important crop, representing a dynamic element in industry, trade and services.



Soybean leaf with rust



Soybean plants destroyed by the disease



Soybean growing accounts for 12 percent of the Gross Domestic Product of Brazilian agribusiness. Soybeans are becoming a fundamental generator of wealth; this crop is seen as an opportunity to develop several regions of the country, for example the West Central region.

According to the national supply company CONAB, the area under soybean cultivation in the 2007/2008 season was more than 21 million hectares, 2.3 percent (471.7 thousand ha) more than in the previous season. The good climatic conditions have generally favored agriculture; the country's mean production of soybean has risen from 2,823 kg/ha to 2,835 kg/ha, and total production from ca. 58.4 million tonnes to nearly 60 million tonnes, making Brazil the second largest producer of this grain in the world.

However, the economic viability of the soybean crop has been put to the test during recent harvests. The devaluation of the Brazilian Real and significant increases in production costs have increasingly put farmers under pressure.

Asian rust

Among the main factors reducing productivity are certain diseases that have been occurring with increasing frequency and severity. The most important of these is Asian rust (*Phakopsora pachyrhizi*), which has been worrying farmers and technicians since 2001.

Considered the worst disease of soybeans worldwide, Asian rust originates from the East (Japan), and has traditionally been present in most Asian countries and Australia. However, Asian rust was detected for the first time outside that region in 1994, in Hawaii. It was recorded for the first time on the African continent in 1996,

causing severe damage in experimental plots in Uganda; it reached plantations in Zimbabwe and Zambia in 1998 and in South Africa in 2001. That was also the year of its first detection on the American continent, in Paraguay and in the south of Brazil. Since then, it has spread to all soybean-producing countries on the American continent. In Brazil, the disease is present in every area of soybean cultivation.

The importance of Asian rust in Brazil can be understood by considering its rapid spread, its virulence, and the significant amount of damage it causes. The estimated total financial penalty resulting from rust outbreaks in the period from 2001 to 2005, including grain losses, the cost of control measures, and losses of incidental taxes collected on the grain, was more than US\$ 7.7 billion. In 2006/07, the cost of grain losses plus the cost of control measures amounted to US\$ 2.2 billion.

Since it was first identified in 2001, rust has shown its ability to spread and destroy all too clearly: it punishes farmers who fail to control it. Each year, its severity increases in the regions in which the conditions are favourable for outbreaks. Despite the reduction in the price of most fungicides, the overall cost of control has risen, because of the increasing number of applications that are needed.

Control problems

Since the first outbreaks in Brazil, there have been growing numbers of complaints concerning reduced efficacy of control and the lower residual duration of some fungicides with sequential applications now being made at very short intervals of between seven and 12 days, whereas the norm would be something around 21 days. There are a number of causes contributing to de-

ficiency of control: continuous production of inoculum in irrigated areas by intercropping soybeans for seed production during the winter ("green bridge"); failure to identify rust correctly at the early stages of infection; inappropriate timing of application; inadequate equipment; under-dosing and/or low spraying volume; inadequate leaf coverage; excessive rain, making spraying difficult or even impossible; and large cultivation areas which make it difficult to apply products at a suitable time.

Atento

Recognizing this situation, Bayer CropScience developed a new solution for the control of Asian rust specifically for Brazil and the country's soybean-growing industry. Atento® is the first-ever seed treatment product available for combating this devastating disease, and it represents an important element in integrated crop protection. Fluquinconazole, the active substance in Atento, has systemic and residual activity, so it is able to protect the crop's lower leaves, thus delaying the development of the rust epidemic.

The seed-treatment supports the first spray applications, providing greater flexibility and security in situations where the producer does not always manage to apply foliar sprays at the right stage, often due to adverse weather conditions, lack of available machinery, size of the area to be treated, etc. Therefore, Atento is becoming an increasingly important tool in the fight against Asian rust. It is used at a dose rate of 300 ml/100 kg seed, always in combination with a follow-up spray program, together with appropriate cultivation methods. Atento is recommended by the country's most important official advisory body, Embrapa Soybean. ■

Luiz Weber



Lack of control can lead to dramatic harvest losses.

