

B-28

Contribution of genetics to the integrated management of Asian soybean rust in Brazil
Carlos Alberto Arrabal Arias, Brazilian Agricultural Research Corporation, Embrapa Soja, Paraná, Brazil

In Brazil, Asian Soybean Rust (ASR - *Phakopsora pachyrhizi*) is a threat to soybean production because it's economic impact considering the cost of chemical control and the direct yield losses. New cultivars resistant to ASR have been indicated but they are not adapted for all Brazilian regions and cropping systems. The free-soybean period of 60 to 90 days during winter, applied in several Brazilian states is a strategic tool for ASR management. Most of soybeans sown in late September or October should receive less ASR inoculum pressure in relation to soybeans sown after mid-November. Field trials were carried out in Londrina, PR, Brazil, during the 2014/15 and 2015/16 growing seasons with the objective of evaluating the performance of resistant genotypes. Susceptible soybean genotypes sown in late November of 2014/15 without chemical control showed high disease severity (more than 60%) already at R4 soybean stage. One or two fungicide sprays caused a delay in disease progression, which reached high levels at R5 stage. Under this scenario of high severity at R4 or R5, both chemical control and early maturity cultivars were not suitable tools to prevent yield losses. Resistant genotypes showed no response for different chemical treatments considering grain yield. For 2015/16, genotypes were sown 30 days earlier (October, 25) and the treatments were one (T1), two (T2) and three (T3) fungicide sprays. For this season, the disease pressure was smaller and high disease severity level was observed only for susceptible late maturing genotypes at R6. Earlier and/or resistant genotypes were efficient to maintain the grain yield. Breeding programs can contribute for ASR management developing soybean varieties with the following traits: good adaptation for early sowing just after free-soybean period; early maturity; genetic resistance considering major or minor genes; and compact canopy structure.