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Analysis of soybean commercial varieties behavior in Northwestern Argentina
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In order to achieve soybean maximum reachable yield levels in northwestern Argentina (NWA), it is crucial to use the most advanced technology. Genetic materials play a fundamental role, so it is very important to study the behavior of different soybean varieties in the region. Data from 14 locations of the Commercial Soybean Cultivars Evaluation Network in NWA were used during the 2014/2015 and 2015/2016 seasons to determine the impact of different environments on yield levels. Sixteen commercial materials of short (V-VI) maturity group (MG) and long MG (VII-VIII), with RR1 (glyphosate resistant) and RR2Bt technology (resistant to glyphosate and *lepidoptera*) were used.

Varieties were firstly evaluated considering their average yields in favourable and unfavourable environments (previously determined). Two large groups were observed: one in which varieties showed greater yields values than the average of the unfavourable environments, but lower yields than favourable environments. This group included only short MG materials. In the other group there were varieties whose average yields were better to average only in favourable environments. It included all long MG cultivars and a few of short MG. Considering technology, there was no tendency to gather the varieties with the RR1 or RR2Bt gene, but it showed that majority of RR1 cultivars presented less average yields than the mean of both environments. Varieties were also classified according to their adaptability (higher yields in favourable environments) and stability (little variation in their yields) to different environments. It was observed that long MG varieties exhibit a tendency to adaptability in different environments, while short MG varieties were both stable and adaptable. It also determined that varieties with RR2Bt technology reached higher yields than those with RR1 technology.

Both studies agreed that long MG varieties showed adaptability in yields for NWA environments, as well as better yields of cultivars with the RR2Bt gene.