

A-163

Improving soybean production system for highest grain yielding at Northeastern Mexico
*Jose E. Cervantes Martinez**, Universidad Autonoma de Tamaulipas, Tamaulipas, Mexico

Fred Below, Crop Physiology, Crop Science-University of Illinois, Illinois, USA

Juliann Seebauer, Crop Physiology, Crop Science-University of Illinois, Illinois, USA

Since 2010, soybean production area has nearly tripled in Northeastern Mexico, stimulated by higher grain prices and funding provided by the government for oilseed crops production. The average soybean grain yield in that region is about 1.8 tons per hectare, which is insufficient for good profits and return on investments, even with such stimulus. Achieving greater grain yields seems to be impossible, because the production system has not concurrently improved. However, research studies using farmer's fields under rainfall conditions at Altamira México (22°49'98"N, 97°98'64"W) over the past three years (2014-2016) have found that soybean can produce 3.5 ton/ha if some important agronomic practices are made or changed. Such practices include: growing soybean as one crop a year, use of new varieties, using fertilized then incorporated corn as a cover crop in winter season, higher soybean plant population, fertilization with MAP incorporated and foliar NPK application, good insect and weed control, and fungicide application. These results suggest the opportunity to explore new technologies to potentially reach five tons per hectare, especially early planting dates, seed treatment, irrigation, early maturity group varieties, narrow rows, and increased fertilization with NPK.