

Conference Summary

Agronomy and Physiology

Guy Roth
Cotton Research and Development Corporation, Narrabri NSW AUSTRALIA

There were a lot of diverse papers on crop agronomy and physiology and I intend to cover only a few of the generic issues in my summary of the World Cotton Conference (WCC-3).

Soils are central to crop production systems and most soils papers at this conference were related to sodicity or salinity. Soil sodicity is usually an inherent soil problem of a region, however, salinity problems are usually a consequence of management. Whilst it is stating the obvious, prevention of salinity is paramount and some of the papers highlighted difficulties facing some regions in the world where salinity is a problem. Breeding tolerant varieties may help reduce impacts of salinity, but it is more important to address causes of salinity. Benchmark monitoring is essential for those regions where no data is held. Sodic soil problems are common and the interaction of sodium on phosphorus and potassium nutrition of cotton plants was raised in presentations and will be an important area of future nutritional research. The significance of agronomic practices on soil biology and the interactions for crop nutrition should not be forgotten and this could be an area where intensive production systems could learn from the less intensive systems. Cotton appears to dominate crop rotations and the lack of rotation crops appears to be a factor limiting crop performance in many countries.

Water is commonly cited as the most limiting factor of cotton growing regions. Too little water, too much water or poor water quality are all common problems. There were papers on water relationships with yield and fiber quality. There were other papers on plant breed-

ing and selection for water use efficiency and research will continue on these important topics. However, the world cotton industry will be held more accountable for its water use into the future and all countries should start measuring and quantifying their water use. Environmental flows, town water needs and other industries will place greater competing demands on limited water supplies and cotton farmers will need to produce "more crop per drop". There are many water use efficiency definitions and perhaps the ICAC could ensure the world cotton industry reports water use figures in the same format.

An issue that will confront all countries in the long term is global warming. Increased temperatures, increased carbon dioxide levels and changes to rainfall patterns will affect all nations and this will have implications in terms of cotton's physiological responses. Nations should examine some the predicted changes in order prepare for any long term implications (positive and negative) that may arise. It is a, "think global and act local issue".

Finally, there are clearly many different views around the world on transgenic cotton crops. Transgenic varieties will change farming systems and agronomy. Due to differences in growth, development and fruiting patterns physiological and agronomic research will need to re visit what is relatively well known in conventional crops for the transgenic varieties.

Mr Chairman, congratulations to all those involved with the organization of the WCRC-3.