

# WORLD CONGRESS 6

on CONSERVATION AGRICULTURE

## Summary of the World Congress on Conservation Agriculture

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Throughout the 6<sup>th</sup> World Congress on Conservation Agriculture (WCCA) there were 12 concurrent sessions oriented toward the themes of the WCCA plus four panel discussions to highlight specific areas of interest within the Congress. The richness of the 6<sup>th</sup> WCCA can be attributed to the diversity of the audience and their backgrounds in terms of sharing information and experiences. It is not possible to mention every specific conclusion presented through the Congress, and these comments reflect my personal observations gleaned from the summaries of the moderators of each concurrent session. These comments can be divided into two general categories: 1. Challenges for science; and 2. Challenges to transfer technology to producers.

### Challenges to science:

- What is sustainable in our current practices and can this be identified and quantified?
- What is lacking is a consistent set of definitions of soil and crop response to management practices.
- What are the improved indicators needed to quantify soil health?
- What can be done to improve our understanding of soil biology and its response to management and the environment?
- Soils are enriched with soil carbon under no-till but what is the synergy with other management practices?
- What can be implemented in soil management to decrease greenhouse gas emission from agricultural systems as part of the mitigation strategies?
- Why and how is the variation present in conservation agriculture systems?
- What can be implemented to improve climate resilience through conservation agriculture?
- How do we quantify the effect of crop rotation on the soil resource and environment quality?
- How do we effectively manage cover crops as part of an agricultural system?
- What are the effective methods of incorporating economics into plot and field scale studies?
- How do we increase water availability to the crop in order to increase yield stability among years?

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Challenges to science (continued):

- How do we blend livestock and forage production under conservation agriculture?
- How do we quantify the ability of conservation agriculture to close the yield gap?
- What are the barriers to improving nutrient management under conservation agriculture?
- How can variation in agricultural systems be quantified and what can be done to reduce the variation?

Challenges to technology transfer to producers:

- How do we improve small scale mechanization to help small landowners/operators achieve the goal of conservation agriculture?
- What is the mechanism to get farmers to realize that the status quo is not good enough and further improvements are needed to feed tomorrow's population?
- What is the best avenue for nutrient management incorporating the 4R concept into conservation agriculture?
- How do we build a stepwise progression of information transfer to help facilitate the ability or likelihood of producers taking the second step in adopting conservation agriculture?
- What are the necessary tools required to help producers evaluate conservation agriculture?
- How do we develop in producers the skills needed to effectively manage conservation agriculture using knowledge intensive and collaborations tools?
- How can farmers be incorporated into demonstration research to help foster an increased reach of the principles of conservation agriculture?
- What can be done to help producers carry the message that they are a critical part of the food production process?

The overall challenges of the 6<sup>th</sup> WCCA can be summarized as:

- We need to increase our ability to provide clear definitions of all of the components in agricultural systems so that everyone (producer and consumer) understand what we are talking about in agriculture.
- We need to increase our knowledge base by building on the fundamental knowledge of the principles underlying conservation agriculture.
- We need to develop strategies which document the value of soil and the importance of improving the soil to meet future food needs.
- We need to increase our ability of have a meaningful dialog with producers to they understand the value of conservation agriculture and can evaluate these principles in their production system regardless of the size of their operations.

See WCCA abstracts and presentations at <http://www.ctic.org/WCCA/Proceedings/>