Semi-arid dryland agriculture is typically in rainfed areas with 10 to 20 inches (250 to 500 mm) annual precipitation. When precipitation is limiting, compounded in warmer climates, then cropping limitations are more pronounced. The Semi-Arid Dryland Cropping Systems Community of ASA brings together scientists and educators, not just in the U.S. Great Plains, but throughout the world, who are interested in discussing the issues of relevance in dryland cropping systems for their region. This community renamed itself after 2011 to reduce emphasis of the original community on the U.S. Great Plains.

Our Focus

Water is the most limiting factor for agricultural production in dryland cropping systems. Soil erosion and degradation is a major concern. Fallow is commonly practiced in dryland cropping systems, but while it lowers production risk, it poses problems for soil quality and long-term sustainability. Common topics of interest among community members include capture, conservation, and utilization of limited natural rainfall; prevention of soil erosion and degradation; and the potential role of cover crops to stabilize semi-arid cropping systems.

The community’s recent symposium at the 2013 International Annual Meeting in Tampa, FL USA highlighted recent research on cover cropping and the potential benefits—and detriments due to water use—that cover crops may pose. The community recognizes that cover crops are popular in many cropping systems, but long-term evaluation of the impact of cropping system productivity is relatively unknown in terms of production, soil improvements, and water use at the potential expense of primary cropping.

Viable management strategies of reduced tillage, residue management from existing crops, and moisture management may be a more beneficial site-specific cropping system than one that includes a cover crop. Cover cropping in developing countries, however, may be regarded as a luxury in which subsistence agriculture will instead use the cover crop itself in lieu of allowing it to impact the cropping system. The challenge community members face in research and education efforts is to increase the information producers can use to make management decisions for their moisture-limited cropping systems.

Our Participants

The Community membership has surpassed 450, with 80% hailing from the U.S. (63% from the Great Plains and Intermountain West regions), 10% from other countries in the Americas, and the remaining 10% from Europe, Africa, Australia, and Asia.

The community has increased its contact with international semi-arid dryland workers in Australia, Africa, and Asia, as well as the staff of ICARDA.

Our Activities

Community participants, whether as part of ASA or individually, are active in a wide range of semi-arid dryland research and education. Key activities in 2014 include upgrading our community communications to highlight research papers and management guidelines for both U.S. and international work in our monthly email updates to members, increasing interaction with USDA-NRCS staff in the U.S., developing a ASA webinar on cover cropping in semi-arid dryland cropping, and planning for additional activities at the 2014 International Annual Meeting in Long Beach, CA USA.

Add the Semi-Arid Dryland Cropping Systems Community to your ASA membership; simply log in and check the box at: www.agronomy.org/account/communities/asa. We welcome input and questions to our leadership, Dr. Alan Schlegel, chair, Kansas State University (schlegel@ksu.edu), and Dr. Perry Miller, vice-chair, Montana State University (pmiller@montana.edu).

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