

W-3128 Microirrigation for Sustainable Water Use - Regional Coordination Committee

Annual Meeting – Holiday Inn Opryland Airport – Nashville, TN

October 22-24, 2014

Participants:

- Loring, Steve (Administrative Advisor) (sloring@nmsu.edu) - NMSU
- Nandwani, Dilip (Chair) (dnandwa@tnstate.edu) – Tennessee State University
- Prestwich, Clarence (Clarence.prestwich@por.usda.gov) - NRCS, WNSTC
- Shukla, Manoj (shuklamk@nmsu.edu) - NMSU
- Fares, Ali (alfares@pvamu.edu) - Prairie View A&M University
- Porter, Dana (dporter@tamu.edu) - Texas AgriLife Research
- Shock, Clinton (Clinton.shock@oregonstate.edu) - Oregon State University
- Lamm, Freddie (flamm@ksu.edu) - KSU
- Neibling, Howard (hneiblin@uidaho.edu) - University of Idaho
- Diaz-Perez, Jaun Carlos (jcdiaz@uga.edu) – University of Georgia
- Dumeric, Gvlden (gdumeric@krs.hr) University of Georgia
- Bartolo, Michael (michael.bartolo@colostate.edu) – Colorado State University
- Roman-Paoli, Elvin (elvin.roman@upr.edu) – University of Puerto Rico
- Bordovski, James (j.bordovsky@tamu.edu) Texas A&M University
- Lighari, Latif (llighari@tnstate.edu) – Tennessee State University
- Jacoby, Pete (jacoby@wsu.edu) – Washington State University
- Shackel, Ken (Vice Chair) (kashackel@ucdavis.edu) – UC Davis
- Rein, Bradley (brein@nifa.usda.gov) – NIFA
- Morgan, Kelly (Secretary)(conserve@ufl.edu) University of Florida

Brief Summary of Minutes of Annual Meeting:

October 22, 2014

Meeting started by Dr. Dilip Nandwani at 8:40 am

Opening remarks by TSU Dean of Extension, Dr. Latif Lighari – Welcomed the group to Nashville and talked about his background as an Ag Engineer in South Dakota with small and large farms with range of irrigation use.

Announcements by Dr. Dilip Nandwani and review of agenda – IA symposium in Nov. 2015 in Long Beach, CA and use of project funds to develop products were new items added.

Discussion of industry participation – Dr. Freddie Lamm – Dr Lamm led a discussion that the group develop a proposal for industry participation in W-3128 meetings. A subcommittee of the W-3128 group was proposed to discuss possible participation by industry. Naming of the subcommittee was tabled to the W-3128 business meeting.

NIFA report by Dr. Steve Loring – Dr. Loring announced to the group that the project has been renewed and the October 2014 meeting constitutes the last meeting of 2128 and first meeting of 3128. He congratulated the group on the Western States Research Directors Award of Excellence, in Reno, NV and national Award for Excellence in Washington in November. He indicated that while W-3128 is a western regional multistate project, it has become a national program because of national scope of irrigation problems. Dr. Loring further indicated that the W-3128 project has great national impact. Dr. Loring suggested that the project must consider a plan to utilize the \$15,000 to support for travel to receive awards and products. Recommendations for using the funds were tabled to the business meeting.

Dr. Brad Rein (NIFA rep) He led a discussion on the USDA budget problems and discussed some funding opportunities specifically CARE (Critical Agriculture Research and Extension). Dr. Rein went on to indicate the emphasis of NIFA RFP will be water quality and quantity. It was suggested by Dr. Ken Shackel that a subcommittee be established to work with industry to develop proposals to include a critical need and producer involvement.

Dr. Dana Porter led a discussion on microirrigation design problems with industry reps including lack of proper designs for small projects was conducted. Standards for minimum specifications including uniformity and management were suggested. It was recommended by the group that the Maintenance of Microirrigation Systems web site (winner of ASABE Blue Ribbon award) should be used as a model for products by the group.

State Reports-

Dana Porter & Jim Bordovsky – Texas A&M –The Texas A&M group developed a website on irrigation scheduling using ET/soil moisture balance for multiple fields at multiple farms and the Bushland Reference ET calculator for grass and alfalfa, available as phone app. Research project for furrow, low pressure and center pivot systems to develop technology transfer products for stakeholders to promote adoption of microirrigation, including grower meetings was discussed.

Clarence Prestwich - NRCS – Dr. Prestwich discussed irrigation system criteria and indicated that EU (emission uniformity) increased to 90% as a minimum for new systems and may be increased further. The importance of water quality testing for irrigation design was discussed. It was observed there exists a wide range of tests and costs and that specific tests to base irrigation system design and management should be established. These comments stimulated a good discussion on uniformity and water savings by proper design and water quality testing

Freddie Lamm – Kansas State University – Dr Lamm discussed development of a system to evaluate water quality testing results in Kansas. He suggested a similar system should be developed to evaluate irrigation clogging potential nationally. Discussion by the group indicated that sensors for water quality components should also be evaluated. Conclusion was that standards for agricultural irrigation water samples need to be different than drinking water. The group discussed development of a standard list of tests for agricultural irrigation water that would reduce testing costs to growers.

Lunch

Mike Bartolo – Colorado State University – Dr. Bartolo discussed challenges to adopting drip irrigation in Colorado. He indicated that cost share of equipment and education were the best tools to increase use of drip irrigation. He also indicated that growers have no incentive to conserve water with drip because if you do not use water you lose it (water rights).

Howard Neibling – University of Idaho - Research on nitrate movement with soil depth was discussed. Data indicated that corn silage grown with drip had greater yields and grower acceptance than furrow irrigated corn. Dr. Neibling described the use of cell modem soil moisture loggers and website for irrigation monitoring and scheduling with Washington State University was described.

Kelly Morgan – University of Florida – The use of crop water use models by water management districts in Florida was described. Development and use of smartphone irrigation scheduling apps and irrigation water use and irrigation scheduling research projects on citrus infected by Citrus Greening Disease was summarized.

Ali Fares – Prairie View A&M – The In-situ water monitoring sensor conference in 2014 was described. Water use and conservation research using soil moisture sensors and water quality measurements using suction lysimeters and the effect of soil organic matter on readings of soil moisture was described. It was also determined that addition of sawdust as a substitute for organic matter in sand had effect on the soil moisture measurement of several commonly used sensors.

Manoj Shukla – New Mexico State University – Dr. Shukla described the decline in water table depth from about 10 feet to 25 feet in New Mexico. Research on development of soil moisture sensor calibration, water use, and crop coefficients of greenhouse grown peppers was discussed. A project determining Kc calculated by growing degree day (GDD) was described.

Business Meeting

Dr. Loring, lead a discussion with the objective of suggesting use of projects funds (\$10,000) that must be spent by Sept. 31, 2016. A discussion of the group indicated the products funded should include 1) update of irrigation manual, 2) Development of irrigation kits, 3) Website management charges, 4) Landscape water requirement, and/or 5) Sponsor a microirrigation symposium. Dr. Loring suggested that the group should assign a subgroup of 3-4 people to develop alternatives and communicate with the larger group. The group determined that Dr. Freddie Lamm will head the group.

Next meeting location suggestions: Dr. Ken Shackel (next chair) suggested somewhere in California in association with the ASABE/ IA symposium in Long Beach, CA scheduled for Nov. 10-12, 2015 so the W3128 would be on Nov. 13, 2015.

Adjourned – 5:30

October 23, 2014 – Field Trip to McMinnville, TN

Mr. Terry Hines, owner of Hale and Hines Nursery gave us a tour of his irrigation control system. The system provides ET and soil moisture sensor based irrigation on field container grown tree production

area with fertigation and line treatment. We then toured the Tennessee State research facility and new Ag biotech building, campus farm tour. TSU facilities were toured on our return to Nashville.

October 24, 2014

Meeting opened at 8:30

Business Meeting (con't)

Submission of State Reports - Dr. Loring led a discussion on State Reports. It was agreed by the group that State Reports be due by November 15, 2014 to the secretary using the same format as last year referencing 2128 objectives with goals for coming year using 3128 objectives.

Subcommittee on project funding (Freddie Lamm, Ken Shackel, Pete Jacoby, and Clint Shock) reported that the W-3128 group should hold symposium, workshop or webinars with invited speakers may be oriented chemistry of emitter plugging.

Review 2013 meeting minutes - Minutes for 2013 meeting were approved.

Election of Secretary - Dr. Pete Jacoby was nominated by Freddie Lamm and second by Ken Shackel. The nominations of approved unanimously.

Clint Shock suggested that the group recognize Dr. Steve Loring for his work to organize the group and complete the paperwork that resulted in 2138 being recognized in the award. The group voted unanimously supported the recognition.

State Report (con't)

Juan Carlos Diaz-Perez – University of Georgia – Dr. Diaz-Perez described research he conducted on establishing ET of vegetable crops to determine crop ET. He has found that 100% crop is not needed with drip irrigation and the Kcs could be reduced.

Elvin Roman-Paoli – Puerto Rico – Dr. Roman-Paoli described work on ET estimation for fruit, vegetables and root crops using subsurface drip irrigation management and crop rotation. He further described research conducted to reduce leaching of N in citrus and avocado.

Clint Shock – Oregon State University – Dr. Shock conducted studies on E. coli movement in contaminated water in furrow or drip irrigation. Another set of studies looked at N rates in soil solution determining that if soil solution is used to schedule N applications less N is used with similar yields compared to predetermined fertilizer schedules.

Dilip Nandwani – Tennessee State University – Dr. Nandwani reported work in Virgin Islands on collection of rainwater for irrigation in reservoirs. He also conducted a study using a water collection kit for drip irrigation using manual pump from a surface rainwater reservoirs. While at TSU, he has established certified organic plots and has produced sweet potato on three types of mulches.

Meeting was adjourned at 11:20