

## Minutes and notes on 2014 Multi-State Project Meeting S-1053

Nov 4, 2014, 9 AM to 3 PM CST

Held online via GoToMeeting

Attendees:

- Kurt Lamour, University of Tennessee
- Craig Canaday, University of Tennessee
- Harald Scherm, University of Georgia (Administrative Advisor)
- Kirk Broders, University of New Hampshire
- Carla Garzon, Oklahoma State University
- Terry Spurlock, University of Arkansas
- Jim Kurle, University of Minnesota
- Shien Lu, Mississippi State University
- Din-Pow Ma, Mississippi State University

**Kurt Lamour** (Chair) provided a brief overview of genetic work on downy mildew of spinach, *Phytophthora infestans* on potato in Ecuador and Columbia, and *Phytophthora capsici* on vegetables. Discussed current work to streamline a standard pipeline going from *de novo* sequencing to polymorphism discovery and SNP assay development. Talked briefly how his area of interest, population genetics, may be useful to members of group if they have questions where this approach is appropriate.

**Further discussions:** Kirk Broders indicates the group has a large resource with the genus *Rhizoctonia*. This continues discussions the group has had previously and he was curious how we might work as group to take advantage of this resource.

Harald Scherm suggested it may be helpful to schedule opportunities at meetings such as APS to give us more opportunities for interaction. This could be arranged by any member of the group. It's important that the group thinks of the Multi-state group as resource in the case RFPs show up that are appropriate. Short discussion of participation rates and how to get it increased. Craig Canaday suggested that meetings on weekend may be better to avoid conflicts.

**Harald Scherm:** How do we enhance collaboration in the group? One idea is to keep group members in mind for departmental seminar series. Discussed the online format we are using this year and thinks it may be good periodically but next year the meeting should be face to face to further encourage discussion and potential projects. Indicates the annual report is due 60 days following meeting and we should be fine with deadline at end of November. Talked about challenges with funding and how there are fewer opportunities due to focused RFAs and hopefully this will change in near future due to critical reviews by National Research Council on AFRI. Applied realm, talked about the CARE program. Good opportunities for applied work that is near ready for useful applications. Crop protection and Pest Management grant program had fewer applicants and higher funding rate as the program was new.

This may change when more people apply to the program. There was a brief discussion on the real costs of training grad students. Administration at most universities want more grad students, but often not willing to help with things like tuition (e.g. \$15K per year/UNH). Terry Spurlock indicates jobs are available in applied sector for graduate students.

**Craig Canaday:** Work falls under Objective 2. Canaday's presentation included an extended explanation of his work from last year. He submitted a provisional patent application in 2013 and couldn't reveal all the details, but he provided an overview of his 2013 snap bean and 2014 soybean disease work. On snap bean in 2013, supplementing a standard seed treatment with an experimental supplement significantly reduced the incidence of snap bean seedling diseases, improved seedling vigor, increased snap bean stand and plant height, and increased snap bean yield by over 65%. On soybean in 2014, he supplemented a standard soybean seed treatment with 12 experimental supplements. The 2014 tests were conducted in two adjacent fields with different cropping histories. Both were split-plot designs with potash treatment as the whole plots and seed treatment as the subplots. The effects of the seed treatment supplements varied depending on the field. There was a weak, though significant, inverse correlation between the overall (both fields) stand loss in a plot and soybean yield. The best 2014 seed treatment supplement on soybean led to an overall yield increase of more than 3.7 bushel/A over the standard soybean seed treatment without a supplement. Increasing application of muriate of potash (potassium chloride) from 0 or 50 lb. K<sub>2</sub>O/A to 100 or 150 lb. K<sub>2</sub>O/A reduced overall soybean yield by over 4.7 bushel/A (>320 kg/ha).

**Cara Garzon:** Provided an overview of work over past years with *Pythium* and hormesis.

**Terry Spurlock:** Overview of work in Arkansas. Like many areas, more soybeans and rice will be planted next year. Current research deals with interactions of soilborne pathogens such as *Meloidogyne incognita* and *Rotylenchulus reniformis* on soybean as well as interactions with fungal pathogens such as *Fusarium virguliforme*, *Rhizoctonia solani*, and *Thielaviopsis basicola*. *Rhizoctonia* surveys in Arkansas and throughout the SE have indicated diversity of AG among both binucleate and multinucleate *Rhizoctonias* on different crops. Some, such as *R. solani* AG4 are known to be important pathogens. Others, such as *R. solani* AG11, are colonizers of soybean and rice but the impact on crop performance is largely unknown. Recent evidence suggests *R. solani* AG11 could be a seedling pathogen to rice and reduced stand has occurred in tests over years and locations within the state. Because of the extension responsibilities of his laboratory, applied research involving fungicide seed treatment efficacy is ongoing as new chemistries come to market. The experimental design employed in some of this testing involves spatial sampling which more appropriately deals with in field variability of product performance but also often yields populations of fungal pathogens that may be of some collaborative value to other members of the group.

**Kirk Broders:** Provided an update on research occurring in New Hampshire.

**Luisa Santamaria** was elected Chair of the group for 2015.