

NCCC46 Jan 25, 2012
Lexington, KY

Participants:

Crebio Avila, EMBRAPA
Larry Bledsoe, Purdue
Mark Boetel, North Dakota State Univ.
Brad Coates, USDA-ARS, Ames
Chris DiFonzo, Michigan State Univ.
Ron Estes, Univ. of Illinois
Billy Fuller, South Dakota State Univ.
Aaron Gassmann, Iowa State Univ.
Michael Gray, Univ. of Illinois
Ron Hammond, The Ohio State Univ.
Richard Hellmich, USDA-ARS
Bruce Hibbard, USDA-ARS, Columbia
Sarah Hughson, Univ. of Illinois
Jung-Koo Kang, Univ. of Illinois
Christian Krupke, Purdue
Bradley McManus, South Dakota State Univ.
Lance Meinke, Univ. of Nebraska
Ken Ostlie, Univ. of Minnesota
Patrick Porter, Texas A&M Univ.
Steve Pueppke, Michigan State Univ.
Tom Sappington, USDA-ARS, Ames
Art Schaafsma, Univ. of Guelph
Elson Shields, Cornell Univ.
Blair Siegfried, Univ. of Nebraska
Jocelyn Smith, Univ. of Guelph
Joe Spencer, Univ. of Illinois
Nick Tinsley, Univ. of Illinois
John Tooker, Penn State Univ.
Jen White, Univ. of Kentucky
Bob Wright, Univ. of Nebraska
Xuguo ("Joe") Zhou, Univ. Kentucky

EPA Guests, morning Jan 25:

Jeannette Martinez, EPA
Alan Reynolds, EPA

[Local arrangements, J. White]

[Minutes taken by T. Sappington, Secretary]

Meeting called to order, 8:00am, Pat Porter, Chair

Discussion with EPA guests, Alan Reynolds and Jeannette Martinez: EPA recognizes there is room to improve a number of regulatory aspects related to insect resistance management for current and future transgenic events. Always welcome advice and comments from groups like

ours but cannot directly solicit it. Committee participants had a long discussion about bioassays, diets, use of soil insecticides on Bt fields, use of Bt as an insurance policy, and what should constitute appropriate triggers for action plans.

2011 minutes approved.

Time and Place for 2013. NC205 suggested New Orleans, 9-10 days before Super Bowl.

Sappington explained the desire of the IWGO (International Working Group on *Ostrinia* and other Maize Pests) to hold its next meeting in Chicago in April 2014 in conjunction with the annual NC205/NCCC46 meetings – consensus in favor, no objections.

A possible letter to EPA from the committee about rootworm resistance concerns was discussed. An earlier letter on this topic by the North Central Extension Entomologists was sent in October. Bob Wright read the reply from Steve Bradbury at EPA. Mike Gray had worked with others on a preliminary draft already and listed the main points that could be included: soil insecticides with Bt, threat of Cry3Bb1 resistance to Cry34/35 durability, communication between sectors, downplaying results of resistance research, paucity of nonBt alternatives for growers, rising input costs. Assigned a subcommittee to report back next day on letter contents (Ostlie, Meinke, Krupke, Shields, Gray).

Summarized breakfast meeting of the ABSTC subcommittee and its perceived goals. Still vague, but basically to improve IRM for rootworms, and improve communication.

Discussion about whether we need to identify knowledge gaps, and to what extent our expert opinions should be voiced.

Committee voted to write a letter to EPA regarding concerns related to rootworm resistance. Approved: all voting were in favor, no votes against.

Discussion about whether the letter should go only to Steve Bradbury at EPA, or whether it should be posted to the current open docket on the EPA website.

Committee voted to send the letter to the open docket. Approved: all voting were in favor, no votes against.

Discussion about how it should be signed – i.e., from the committee or from individuals. Consensus was to have individuals sign, but to indicate NCCC46 involvement in drafting the letter to lend the weight of the group.

Question of how to deal with a high-profile reporter wanting information from the group. After discussion, Porter indicated he would wait and send them to the letter after it was posted.

Steve Pueppke gave the Administrative Report. Asked whether the committee would like to be nominated for an Experiment Station Section Award for Excellence in Multi-state Research. This committee should have an excellent chance. Need to decide now because deadline is Feb 28.

Committee voted to apply for the award. Approved: all voting were in favor, no votes against. Volunteers for writing committee: Hammond and DiFonzo. Will prepare draft then circulate.

Discussion of budget and potential cuts. Concerns voiced about loss of positions in the extension ranks, and consequent loss of applied and extension capacity. Will mean defaulting to industry as the only source of information to the public. Can diagnose the problem, but no obvious solutions given current conditions and political climate.

Afternoon:

State Reports:

Missouri: Study showing late emergence of WCR adults in Bt corn is not tied to dose. Have resistant colonies to all toxins; will try to get a resistant colony to all four products. Interested in testing cross-resistance. Continuing to work on native resistance and have a couple of QTL trying to characterize.

Nebraska: Effects of flooded fields on rootworm eggs. Can affect both survival and emergence curve. Study of a colaspis that has increased in number in recent years in southeast Nebraska – not a big concern yet, but need to know pest potential. Looking at role of volunteer corn in soybeans as a carry-over host for WCR. Studies to understand the nature of persistence of cyclodiene resistance in WCR. Found that the farthest west population was most susceptible ever seen. W to E gradient of susceptibility (greatest resistance in east). Starting a project on RNAi nontarget effects using surrogate predators, decomposers, pollinators in the lab. Studies on midgut transcriptomics, especially cellulases.

New York: Wet spring; and very low CRW populations; adoption of Bt corn at about 50%

Ohio: Very little of CRW anywhere, including the variant. Same thing about using Bt and considering an insecticide on top of it. A lot of fungicide applications to boost yield. Making a big deal about resistance in terms of convincing growers to use a variety of tools. Probably will just be doing some simple efficacy testing this next summer.

Michigan: Low CRW. Highest populations and biggest problem is Asiatic garden beetle (a scarab), especially in potatoes – corn not too much of a problem. Cranes are a big problem – Using seed treatments to repel the birds.

Indiana: Looking at volunteer corn in corn, and actually get a yield bump. Cry3Bb1 rates of expression in volunteer plants are not different from hybrids when in the presence of high N. CRW pressure is low lately so it's hard to test hypotheses. In 2010 received reports of dead bees. Using LC-MS found neonics present in every sample. Talc used in air planters may be the point source for contaminating flowers and other surface areas where bees could land. There are no guidelines for proper disposal or cleaning of equipment. Found that corn pollen comprised 50% of the pollen carried by bees during that time, and that it is present at toxic levels. Also found that a number of fungicides are present that synergize the toxicity of neonics.

Nomination committee report: Nominated Art Schaafsma as next Secretary/Treasurer. Committee voted for nominee. Approved: all voting were in favor, no votes against.

South Dakota: Looking at mycotoxins on corn from insect damage. Another study looking at predators of corn rootworm eggs and early instars. Good pressure this year. Could tell which plants were nonBt in 95/5 seed mix fields. This year was more WCR than NCR. Some sites just hardly ever see a NCR anymore.

Pennsylvania: Had one strip trial where a Cry3Bb1 field was down. Will keep an eye on it next year (near Altoona).

Illinois: Experiments on how refuge structures affect abundance and WCR mating. Amount of mating in transgenic plots is not impressive. Always a lot of mating in refuges. Mating in the transgenic is late in the season mostly. Seed blend creates a nice, uniform abundance and mating

pattern across the field. Another study looking at rotation resistant WCR on Bt corn. How do the populations differ when exposed to Bt corn? Examining historical data on yield loss.

Texas: Farmers have started using insecticides in Bt corn in Texas, even though Monsanto doesn't have reports of performance inquiry fields. Farmers thought there were going to be inspections in Texas by ABSTC – did a PR campaign, and so expect a little better compliance.

Iowa: Much effort by Gassmann on WCR resistance. Northeast Iowa fields with high abundance, central Iowa not high densities; so pockets of abundance. Looking at fitness costs of resistance in lab selected strains. Will be looking at inheritance of field resistant strains – collect in fields then cross into the nondiapause strain. Study on extended rotation and cover crops in corn. Last year Sappington and Lundgren presented an idea for an ARS Areawide Project, involving synchronized rotation of Bt and nonBt fields. Idea was supported by administrators, but big budget cuts dried up potential internal funding by ARS. Two large multi-investigator sequencing efforts underway: WCR transcriptome sequencing by Genoscope in France, PI Thomas Guillamaud (INRA); and whole genome sequencing as an objective in a NIFA grant, PI Hugh Robertson (Univ. Ill.). Both using inbred colony of Wade French in Brookings. In cooperation with N. Miller (Univ. Neb), using new markers and samples from the WCR home range in Colorado to get estimates of gene flow, previously not possible in the Midwest because of after-effects of range expansion on genetic variation.

Adjourned for evening.

Thursday, Jan. 26:

Meeting called to order, 8:00am

Based on communication with Eileen Cullen (Chair Elect, on sabbatical in Ireland), Porter will take the lead on the letter to EPA.

Time and place: agreed that New Orleans is preferred location for meeting in 2013.

Updates on getting blanket agreements in place at universities and ARS, providing access to commercialized transgenic seed for research without case-by-case approval by companies.

Tooker (Penn State) gave update on slug research. Soybean seed treatments do not control slugs, but they have marked negative tritrophic effects on carabid natural enemies that attack slugs.

Discussion about general question of the value of seed treatments, and potential problems of using them almost universally in the landscape whether needed or not.

Report from ad hoc subcommittee on recommendations for content of letter to EPA. Gray led discussion while Porter made live edits on screen.

Suggestion was made and debated whether committee should send 2 letters to EPA, one for EPA eyes only, one for the public docket. After long discussion there was no consensus. Porter indicated he would draft 2 letters, send to Cullen and Sappington for revisions, then circulate to whole group.

Committee consensus that shortened format of NCCC46/NC205 meeting was good.

Meeting adjourned, 10:45am.