

NCERA-103 Meeting: 11/20/2014
Held in Conjunction with the Northcentral Extension Industry Conference
Holiday Inn Airport, Des Moines, IA 12:00 pm

Attendance:

Carl Rosen, University of Minnesota (administrative advisor) crosen@umn.edu
Daniel Kaiser, University of Minnesota (Current Chair) dekaizer@umn.edu
Matt Ruark, University of Wisconsin (Current Secretary) mdruark@wisc.edu
John Sawyer, Iowa State University jsawyer@istate.edu
Jim Cambarato, Purdue University jcambera@purdue.edu
Dave Franzen, North Dakota State University David.Franzen@ndsu.edu
Ed Lentz, Ohio State University lentz.38@osu.edu
Dorivar Diaz, Kansas State University ruizdiaz@ksu.edu
Peter Scharf, University of Missouri ScharfP@missouri.edu
Richard Ferguson, University of Nebraska rferguson1@unl.edu
Edwin Ritchey, University of Kentucky Edwin.Ritchey@uky.edu

Absent:

Kurt Steinke, Michigan State University ksteinke@msu.edu
South Dakota State University: no current member
University of Illinois: no current member

Opened the meeting: 12:00 pm

Kaiser – Discussion on current chair and rotation. Ron Gelderman was next in line but retired and there is no current representative from South Dakota. Daniel Kaiser took on the chair from 2014-2015. Current proposed rotation

1. 2014-2015 – MN (chair), WS (secretary)
2. 2016-2017 – WS (chair), KS (secretary)
3. 2018-2019 – KS (chair), TBD (secretary)

**The rotation will need to be set based on new hires and current membership. There is no word on a representative from Illinois or South Dakota at this time. The group discussed the possibility of inviting Emerson Nafziger from Illinois which was going to be followed up on before the next meeting.

Carl Rosen – Administrator report

Report on: accomplishments since committee was last approved and compare to objectives, were objectives met – and if not why not. Linkages and coordination – interaction among participants. How well does committee work together – integrated activity, collaborative output. The key is to document technology exchange.

State Reports

Iowa State

New products heard about:

Plant Power Products, Stoller USA
Novoenzymes, Monsanto

Take Off® crop nitrogen assimilator, Verdesian Life Science
IgniteS2, AgriGro
MegaZone, Teva Corp.
Celleron, Follyfertil
DS300, Doosan (South Korea)
Enersol (humic acid), Amcol Bio-Ag
Generate®, Agnition – a Ralco brand

2014 Projects:

- (1) Research on Instinct with UAN and liquid swine manure. Briefly – generally no to negative effect on corn yield with spring applied UAN; some benefit with fall applied liquid swine manure (soil inorganic N and corn yield), however, still less yield than compared to anhydrous ammonia.
- (2) A two-year study comparing various N additives and N products; ESN, Instinct, Factor, and SuperU. No two-year results summarized yet. We had a report for the first year, but need to get the two year completed.

Publications:

Sassman, Aaron. 2014. Corn production with Instinct nitrification inhibitor with urea-ammonium nitrate solution and liquid swine manure. M.S. Thesis, Iowa State University.

Kansas

- What products are people asking about (current or new products) and if there specific questions asked about a product.

Nutrisphere, N-Zone, Avail, 40 Rock, P-Max, Micros foliar – bio-forge, Humics + micros

- What products did you testing in 2014?

Factor (NBPT)

Instinct II (Dow)

P-Max and Versa Max

Information for annual reports:

Accomplishments:

- 1) 2014 product trials – (with short description of experimental design): Factor (NBPT), Instinct II (Dow), P-Max and Versa Max. Randomized complete block design.
- 2) Report submitted to the compendium: none during 2014
- 3) Presentations given: three presentations during 2014 on non-traditional products.
- 4) Reports (proceeding papers, industry reports, etc.): Two industry reports during 2014.
- 5) Peer-reviewed publications: none
- 6) Grants (non-gifts):none

Impact Statements:

Results from our research on non-conventional products are used regularly for extension educational programs providing local information to producers to improve efficiency and reduce cost. This information also helps to adapt new technologies and products that are useful for local conditions.

Kentucky

Product evaluation and funding arrangement for John Grove

Kentucky Corn Promotion Council (KCPC) and Small Grain Growers Association (KYSGGA) funded a “Product Evaluation of Non-Conventional Products”

Funding and Protocol for: KYSGGA – 1 location at \$10,000; 6 reps of 10 treatments (60 plots per location); Corn Growers - 5 locations for \$35,000; fewer treatments but still six reps.

Another selling point with the boards was to use this as an undergraduate internship (paid from grant) to learn about the crop and collect the data. One student on wheat and two students committed to corn in spring.

Research results will be posted on the internet next to UK variety trial results.

The project is in conjunction with the variety evaluation programs. Plots are planted, maintained, and harvested by variety trial coordinator. Various products are applied by researcher. Student intern collects field data throughout the season.

10 treatments (including check), commodity groups choose six of nine products.

Base management all the same, proper weed, insect, disease control.

Small factorial using specific treatments (Avail in wheat)

Corn Growers, additional foliar fertilizer above UK recommendation

List of new products this year that you've come across, with short description of what they are and any potential concerns you may have.

ACT-Agricultural Compaction Treatment (<http://compactiontreatment.com/welcome-to-bear-hollow-farms>). Was being promoted in Ohio, McLean, Daviess, and surrounding counties in KY. The product is essentially shampoo and has not shown yield increases in the “farmer trials” I am aware that were conducted. John Grove worked with the product. A 2.5 gallon container of ACT was applied to two, 25 acre strips that is alternated with two 25 acre strips that were not treated. Yield data will be provided when processed by producer. No penetrometer resistance differences were detected between treatments.

Other Products and practices being promoted in Kentucky include (no research findings to report at this time):

Soil treatments (liquid carbon, humic acids, hydra-hume)

Foliar Nutrition Products (e.g. CORON, extra P or K, mostly micronutrients)

Biologicals (Novazymes Jumpstart, Bioforge - biggest category, applied to seed or foliar)
At one point SS had all urea treated with Nutrisphere (green urea) in Central and Eastern KY
All company owned SS stores were all treated; some “franchised” stores did not treat it all.

Limited research findings-yield data not processed yet (one year)
Biowish evaluation for tobacco seedling growth in the greenhouse (GH) and in field.

The product, Ag 1000 biological is produced by Teraganix, a company out of Louisville. Molasses is a component in product to feed the microbes. In the field it was sprayed 8 times, plus a treatment applied at transplant in the setter water. No difference in plant growth ratings, yield not processed at this time.

Pulled off float bed prior to setting set in solution overnight, did show visual differences at setting (1/10 ratio of product to water). But it went away over time. Foliar was 8 application of product at 3 gallons/acre rate. A 10 gallon/A rate was used in setter the water treatments.

Anything Montey’s (e.g. Joy Juice, Liquid Carbon, etc.)

Gypsum is being pushed some for sulfur need and some to improve soil structure. Most commercial labs will make a sulfur recommendation based on a four inch soil sample. This is not hurting anything, but there is a very limited need for sulfur at this time in Kentucky based on current knowledge. The producer could spend money on other needed inputs. Gypsum is also being promoted for soil structure improvement, but other benefits are being more highly promoted.

Alltech’s Crop-Set: not tested, but requests have been made for University Testing
NRCS Cover crop initiative is still pushing multi-species (>6 way) mixtures without any research results to substantiate claims. Cover crops can be very expensive with more species in the mixture without proven advantages of the promoted claims. Cover crops are good, but claims are suspect.

Ohio

Products being promoted in Ohio

Gypsoil: gypsum by-product from coal power plant
Starter fertilizers with micronutrients and sulfur
Micronutrients based on tissue analysis

Presentations given in 2014

Accomplish as a Nutrient and Growth Enhancer for Corn Production, NACAA Annual Meeting and Professional Improvement Conference, Mobile, AL July 20 – 24

Winter Canola Response to Sulfur Fertilization, ASA Meetings, Long Beach, CA, November 2-5

Wisconsin

What new products are on the market/which products are you getting questions about?
I gave received a lot of questions regarding mycorrhizal inoculants. The goal is to improve P uptake

efficiency.

What products did you testing in 2014?

Products tested: ESN, NZone

2014 Product Trials

1. ESN on potato
 - a. Objectives: (1) determine optimal N rate for potato when using ESN fertilizer and (2) assess the need to supplemental N fertilizer when using ESN.
 - b. Experimental design: Randomized complete block, split plot design. Whole plot treatments are N rate and source (200, 250, or 300 lb-N/ac of ESN or urea) and split plot treatments are late-season N applications of 0, 30, 60, or 90 lb-N/ac.
2. NZone on potato
 - a. Objective: (1) compare use of NZone at different timings to conventional fertilizer applications on potato
 - b. Experimental design: Randomized complete block design with ten treatments. NZone treatments include: (1) 100 lb-N/ac of NZone at emergence and 150 lb-N/ac of NZone at tuberization and (2) 250 lb-N/ac of NZone applied at emergence.
3. ESN on seed corn
 - a. Objective: (1) compare a one-time application of ESN to split applications of conventional fertilizer on seed corn yield.
 - b. Experimental design: Randomized complete block design with two fertilizer sources (ESN vs. UAN) at six N rates (50, 100, 150, 200, and 250 lb-N/ac).

*These reports will be submitted to the compendium in 2015.

Presentations given (4):

- (1) Naber, M., M.D. Ruark, and A.J. Bussan. 2014. Field-scale trials with ESN and manure. In Proc. Wisconsin Potato and Vegetable Growers Association Conference, 4-6 Feb., Stevens Point, WI. (150 attendees)
- (2) Ruark, M.D., J.R. West and M. Naber. 2014. Assessing the value of rescue N applications to potato. In Proc. Wisconsin Potato and Vegetable Growers Association Conference, 4-6 Feb., Stevens Point, WI. (150 attendees)
- (3) Tools for nitrogen management. Nitrogen Summit, 28 March 2014, Madison, WI. (75 attendees)
- (4) Nitrogen management for corn: Controlled-release N and cover crops. Corn-Soy Expo, 6-7 February 2014, Wisconsin Dells, WI (100 attendees)

Industry Reports (2):

- (1) Polymer-coated urea: Assing quality and release of nitrogen. The Badger Common Tater, February 2014.
- (2) Release rates of ESN in 2014. The Badger Common Tater, December 2014.

Impact statement:

- Research was disseminated that educated farmers and crop consultants on which alternative N fertilizers were worthwhile to use on their farm.

North Dakota

There is continued activity in non-science-based nitrification/urease inhibitors, although use in acreage is low. High crop prices in 2014 resulted in high use of heavily marketed humate-infused products and nebulous 'biologicals'.

Now that crop prices are lower, feedback from growers and suppliers is that unquestioned use of these largely untested products is much less.

A concern is mis-representation of University research. Several NDSU studies resulted in non-significant yield differences due to treatment. However, company marketing one of the treatment products ignored non-significance and displays data as if numerical differences were real. My current product-reporting strategy is to report average yields for all treatments when no differences are experienced. Therefore, there is no opportunity for mis-representation and implied product effectiveness.

Minnesota

Notes for the minutes: I have not had many questions on new products in 2014. I still am receiving questions related to Ascend marketed by Winfield. More of our growers are interested in N stabilizers. There is more interest in Instinct sold by Dow. More questions are being fielded on N-zone which has shown no efficacy as a nitrogen stabilizer in Minnesota.

List of new products this year that you've come across, with short description of what they are and any potential concerns you may have: None

What products are people asking about (current or new products) and if there specific questions asked about a product: With the low commodity prices, Ascend is still being questioned as well as Generate which is a micronutrient mix with cobalt that is marketed by Ralco. Generate was heavily promoted to growers at Farm Fest in August.

What products did you testing in 2014?

- Ascend – 3 studies
- Generate – 1 Study
- WC101 – in-furrow application for corn and soybean, 4 studies; Foliar for corn, 2 studies (West Central INC)

**A majority of my testing has involved different starter fertilizer sources (different product analysis) and testing of EDDHA-Fe products for use in soybean for iron deficiency chlorosis. I also tested some experimental products from Loveland which were numbered and not commercially available.

Information for annual reports:

Specific Product Trials

Ascend with chelated zinc replicated factorial (corn)

- 0 or 5 oz/ac of Ascend
- 0, 1, 2, or 3 qt per acre of 9% chelated Zn

Ascend with starter fertilizer and broadcast fertilizer factorial

- Factor 1: no P or K, residual P or K, and broadcast P and K
- Factor 2: no starter or 5 GPA 3-18-18
- Factor 2: 0 or 5 oz per acre of Ascend

WC101 for corn factorial

- Factor 1: 0 or 5 GPA 9-18-9
- Factor 2: 0 or 2 qt per acre of Aventine (micronutrient package)
- Factor 2: 0 or 24 oz per acre WC101 (chelate)

WC101 for Soybean Factorial

- Factor 1: 0 or 2 qt per acre EBmix (micronutrient package)
- Factor 2: 0, 8, 16, 24, or 32 oz WC101 per acre

WC101 Foliar applied for corn factorial

- Factor 1: no foliar, 2 qt per acre EBmix, 1 GPA Redline, or 2 GPA Copper-Field
- Factor 2: 0 or 24 oz WC101 per acre

Generate factorial study for in-furrow starter fertilizer

- Factor 1: no starter, 3.4 GPA 10-34-0, 5 GPA 7-23-5, 5 GPA 7-23-5 + micros (MNP)
- Factor 2: 0 or 1 qt Generate per acre.

Results from 2014 trials: Early corn plant mass responses indicated small responses to WC101 and Generate at V5. These increases did not result in greater grain yield at harvest. There was no yield increase or increase in tissue nutrient concentration from Ascend. Foliar trials showed no evidence of a yield response to foliar at 1 location and 1 treatment, the Copper-Field foliar applied increased corn yield. The increase was likely due to Fe as plants were visibly Fe deficient. The WC101 did not increase yield when applied as a foliar.

I have not given any talk with specific data. Most extension presentations have been given focus on starter fertilizer sources and not additives. I have made summaries of my data available for those whom request the data. I have had 10 request last year for data from my trials.

Publication status

*P extenders review paper: send links to Daniel Kaiser on relevant products. Reports on data for Avail have been sent in to Daniel from Kentucky and North Dakota.

*N stabilizers and controlled release (except inhibitors) review paper
-Cancelled / on-hold as Richard Ferguson has been unable to work on the paper.

Update on Website hosting for the compendium - John Sawyer

3,568 page views (Nov 16, 2013 to Nov 16, 2014)

Discussion on future of website. John Sawyer will explore outside companies others will explore other internal. Iowa State has been transitioning to new server systems which have made it difficult to maintain the site. For the time being Iowa State will continue to host the site.

John Sawyer- States can send any relevant reports to add to the compendium. John was not sure on

the total number of recent additions to the website. If states have anything to send John also noted that he needs a letter stating that he can use the report in the compendium. Several states mentioned that they were promoting the website to their clientele when they have questions on products

Timeline for committee renewal- Carl mentioned that the department heads were meeting in January and he would like to have the report finished by then. We are due soon for a mid-term review. Dan will have to check on the specifics for the review when the final meeting minutes are put together.

Opportunities for funding within states for research on amendments

This was brought up by Ed Ritchey as they have been asked by commodity groups in Kentucky for product testing. The group discussed what was going on in other states. A testing program was also proposed for funding by fertilizer check off funds in Minnesota. No action items were developed at this time.

The meeting was adjourned at 5:00 pm

NCERA-103 meeting agenda
11/20/2014 Holiday Inn Airport Des Moines, IA

Start at 12:00 pm

Agenda Items

- 1) State/Administrative reports
- 2) Chair rotation for the committee
- 3) Publication status
 - *P extenders
 - *Slow release N products
- 4) Update on Website hosting for the compendium - John Sawyer
- 5) Do we have any new data that can be added to the compendium
- 6) timeline for committee renewal
- 7) Opportunities for funding within states for research on amendments
- 8) Any other business