

NE-1544 Meeting Notes  
November 9 - 10, 2017  
State College, PA  
Meeting hosted by Al Roz – USDA ARS

**Official Agenda**  
**Thursday, November 9, 2017**

8:00-8:15 am	Welcome and Introductions
8:15-8:45 am	Administrative Update (Steven Smith)
8:45 - 12:00 am	State Reports
Noon	Group Lunch
1:00-2:30 pm	Penn State dairy cropping systems project (Heather Karsten) Long Term Agroecosystem Research (Pete Kleinman)
2:30-4:30 pm	Tour of the cropping systems/LTAR field experiment
5:00 pm	Dinner

**Friday, November 10, 2017**

8:00- 11:00	State Reports
11:00 – 12:00	Business Meeting
Noon	Adjourn / Lunch

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Minutes

Nov 9 AM

Steve Smith updated committee with discussion of Hatch funds and general outlook of research funding from DC

Al Rotz Provided update on IFSM Update - (Version 4.4)

A recent addition is an option for slatted floor barns (heifer barns, beef more than dairy)

An overview was provided for of the LongTerm Agroecosystem Research Network (LTAR). Locations include Great Basin location (western Idaho), Platte River/High Plains Aquifer (Near Omaha/Lincoln), and Central Plains Experimental Range (NC Colorado)

An overview was presented of DAWG Dairy Agroecosystems Work Group – subsystem of LTAR

Started as network of four ARS groups, ID, MN, WI, PA, then TX, now Ireland

Focused on dairy systems, overall nutrient mgt, reactive N trying to track and balance reactive N.

Goal is to define, setup and simulate various dairy farms that represent every type of dairy farm in the state (PA) including Amish. Over 100 farms in PA surveyed to help obtain data.

Hoping for ~20 different farm systems – then get a weighted value for impact on the state – based on amount of milk produced by each system.

Sustainable Dairy (Dairy CAP) Project - NIFA funded, multistate CAP project

Quantifying GHG emissions from dairy farms and exploring BMPs for mitigation.

Two case study farms - 500 farm NY and 150 cow farm WI.

P losses drastically reduced with cover crops – due to a decrease in sediment in water erosion (other losses dissolved P runoff, leaching)

Adaptation strategies to climate change

Effects of future climate on corn growth and development

Indication is that corn will decrease tremendously due to high temps (could get to 122 degrees)

Sustainable Beef Project - Completed surveys and visits of beef operations in all regions

HI beef was completed as a lot of calves in HI being shipped to TX and WA for finishing animals.

Looked at finishing on the islands. Processing of livestock is driving factor.

Great Plains Cattle Production - Erin Cortus – emission model for slatted floors with under-floor pit.

Emissions from bedded pack manure.

Mindy Spiehs part of this group.

Ongoing barn measurements (concentrations) being made.

Paper on Modeling GHG emissions from dairy farms

- Summary of models for each emission source on dairy farms
- Whole farm GHG emissions
- Models come in a wide range of detail level

Joe Harrison provided update on mobile struvite production system

World phosphate rock reserves are primarily in Morocco and Western Sahara, 85% of easily minable P reserves. About 27% of P in captured in milk.

Project has overall goal of reconnecting the regional broken nutrient cycle between forage growers and dairy industry. There is an interest by alfalfa hay growers to use P derived from dairy manure.

Mobile system is being demonstrated on 30 dairies in western and eastern Washington.  
pH of soil – P more available in more acidic soil - -higher pH can be problematic (not as available).

Agronomic studies are looking at application of ratio – 80:20 struvite:monoammoniumP, and soil incorporated, vs topdressed.

Al Rotz and Heather Karsten (for Peter Kleinman) described Tour - Long-Term Agroecosystem Research (LTAR) Network

LTAR – long term ecological network

- 60 colleges
- 15 federal agencies
- 12 state agencies
- 25 ngo,
- 19 industry orgs
- 29 international orgs
- 11 other research org

Patterned after other long term studies. Each site has **business as usual** – common for their region, and **Aspirational** – what are they going to evaluate.

Collecting a lot of data

Modeling/extrapolation

Vision for sustainability of intensified US agriculture

USDA's grand challenge for 2025

20% Increase in productivity and quality

20% decrease in impact

This group – upper Chesapeake bay region – have watersheds that have been monitored for years (Montago, and Spring Creek)

12 scientists, 25 support staff, 5 post doc (primarily in modeling end)  
PA dairy is the only dairy operation, several beef, and cropping operations being evaluated.

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Friday AM tour

- Cropping system experiment that ties in with Heather Karsten is funded by SARE.
- Harston dairy – 3000 cows, most of valley beyond penn state is theirs
- Set aside 100 acres to set up a business as usual vs aspirational, eddy covariance flux towers, leaching, runoff, etc.
- Working closely with producers on this – setting up and trying things that they would like to try
- Heather Carston presentation
- 65 milk cows and young stock, different 6-year rotations – with manure application and cover crops, two crop rotations, and two manure application types

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Business meeting

For 2019: Rhonda – chair, Joe – secretary

Need to send out poll for time of meeting. Potential option is Dairy meeting in 2019, summer late June/early July in Cincinnati.