

# Manure Irrigation Workgroup Meeting – July 30, 2013

## DRAFT NOTES

### **Original Agenda**

July 30, 2013, 9:00am - 3:00pm  
Dane County Cooperative Extension  
First Floor Meeting Room  
5201 Fen Oak Ct, Madison, WI 53718

#### Meeting Overview:

This first meeting will focus on workgroup logistical and operational issues (how the group will interact, make decisions, etc), along with discussions of workgroup scope, issues for the group to address, and expectations. We will also develop a general timeline for workgroup meetings and activities going forward. Please review the May 17th presentations on the website before the meeting ([fyi.uwex.edu/manureirrigation](http://fyi.uwex.edu/manureirrigation)).

#### Agenda

8:30am	Room available – coffee and refreshments
9:00	Welcome, introductions, agenda review/revision
9:15	Workgroup purpose and operational details
9:45	Review and discussion of comments received to date
10:45	Break
11:00	Summary of 2012 technical group discussion
11:15	Scope and issues for workgroup to address – creating an initial outline and identifying key questions
12:00	Break for lunch (on your own)
12:45	Scope/issues for workgroup to address - continued
1:30	Process, timeline, and sources of information for workgroup deliberations (including available resources, access to completed and ongoing research and studies, potential for speakers/presenters).
2:30	General workgroup discussion: additional comments, questions, expectations, suggestions
3:00	Close

Note (from original agenda): The July 30 meeting will not include general informational presentations and, while open to public attendance, there will be limited opportunity for public comment/discussion. Comments can continue to be submitted through the [website](#).

## **Notes from July 30, 2013 Discussion:**

### **1. Attending:**

Workgroup members: Ken Genskow, Becky Larson, Carrie Laboski, Andrew Craig, Pat Murphy, Todd Boehne, Rob Thiboldeaux, Suzanne Gibbons Burgener, Gloria Smedema, Sarah Grosshuesch, Kenn Buelow, Shelly Mayer, Jeff Polenske, Dana Cook, Lynn Utesch.

Members not Attending: Jeff Sommers, Jim VandenBrook, Mark Borchardt

Others Attending: Christe Greening (public), John Exo (UWEX)

### **2. Discussion of Workgroup purpose and operational details**

The workgroup reviewed and confirmed the purpose and general focus as described on the workgroup website ([fyi.uwex.edu/manureirrigation/workgroup](http://fyi.uwex.edu/manureirrigation/workgroup)). Participants noted similarities between the workgroup and a structured study group. Discussion of proposed groundrules resulted in the addition of several items including guidance for non-workgroup members attending meetings. Revised groundrules are attached to these notes and also posted with other shared workgroup documents. The group suggested including someone with expertise related to transport of particles related to air quality/air emissions, potentially a climate scientist or modeler.

The workgroup confirmed their desire that efforts lead to a document with recommendations resulting from workgroup deliberation, as well as a distribution/outreach plan to share a final document with others. The group also underscored a lack of any formal authority and an expectation that any public action by local or state governments related to workgroup recommendations would involve requisite public participation and input by the appropriate governmental entity (e.g., town, county, state agency).

### **3. Review and discussion of public comments received**

Workgroup members reviewed hard-copy materials distributed prior to the meeting of comments submitted to the workgroup. As summarized on the website, comments, concerns, and benefits fell into the following categories.

#### Concerns:

- The full extent of health and quality of life risks are unknown and potentially severe.
- Health concerns that aerosol spray drift from manure irrigation could carry pathogens, particulates, antibiotics, endocrine disruptors, cleaning compounds, toxic gases (hydrogen sulfide and ammonia), and 'super bacteria' including LA-MRSA. Concerns that contaminants could affect the general population and especially those with compromised immune systems and elderly; concerns that those negative health effects could be magnified because aerosols penetrate lungs and carry toxins to the bloodstream more directly than if ingested.
- Quality of life concerns, reinforced by reports from people who have complained of worsening respiratory health, poor air quality, increased airborne particulates, odor, and contamination of their property as a result of nearby manure irrigation.

- The potential for contamination of surface water and wells from irrigation application, especially in areas where access to groundwater is more direct such as in sandy soil or karst. There are concerns about runoff from precipitation events after manure irrigation application.
- There are concerns that existing and future setbacks will be inadequate to protect neighbors, surface waterways, and crops in nearby fields.
- Organic farms are concerned about the risk of losing organic certification due to spray drift depositing materials on crops.
- There are concerns that monitoring implementation of manure irrigation practices would be difficult and impractical.

Benefits/Issues:

- An ability to control (with precision) the timing, amount, and location of nutrients to crops during the growing season when plants are using the nutrients
- The potential for less risk of surface runoff during storm events due to controlled timing of application
- The potential for reduced nutrient leaching below the root zone due to plant uptake of nutrients during growing season
- Lower distribution costs for producers compared to manure haulers/tankers
- Reduced risk of manure spills compared to manure haulers/tankers
- Reduced traffic volume and damage to roads from manure haulers/tankers

Discussion noted that some issues may be considered both benefits and concerns.

**4. Summary/Review of previous (2012) technical group**

DNR convened a technical workgroup in 2012 to review technology and issues related to manure irrigation. Several members of the current workgroup participated in the 2012 group. The group held two meetings (August and October); agendas and meeting notes from the meetings were distributed. Meetings were suspended due to concerns about workgroup composition. Many of the issues from the 2012 technical group carry over to this workgroup.

**5. Scope of issues for workgroup to address**

The workgroup noted that recommendations emerging from the group should acknowledge and respond (in at least some way) to each of the major concerns and benefits highlighted in the discussion of public comments; if the workgroup does not examine an issue in detail, the report could simply state that.

Discussion among workgroup members led to identification of several over-arching questions and issues for the workgroup to explore; they apply to manure irrigation practices for both small and large operations:

- What is the material that we are talking about?

- Liquid manure (which is highly variable in form and content)
- Process wastewater (rinse water, etc from dairy operations)
- Solid/dry-matter content threshold? (e.g., <4%? <11%)
- What are we NOT talking about? Is municipal and industrial waste included? If so, how is it dealt with? Can we address this? How would that affect any recommendations?
  - Could include cheese/food process waste, rendering waste, municipal sludges (additional limitations if metals, etc). Content addressed in NR214.
  - Septage applications??
- What is the technology, how is it used with manure, and ?
  - Tanker/truck?
  - Drag-line hoses, mobile traveling gun, center pivots
  - Anything above a certain height? (6 feet? 9 feet?)
  - mobile/traveling gun
  - pivot – fixed and mobile
  - linear move irrigation/distribution system
    - nozzle details – size, pressure, droplet size, ability to turn on/off for specific features (homes, roads, waterways, etc)
- What are the risks and how do they compare to other available manure application options?
  - We are not comparing “irrigation vs no application.”
  - How do important concerns compare for other application options (e.g., those identified previously including odor, water quality, health, misting, Quality of Life, pricing/cost, potential for spill, impact on groundwater withdrawal, potential for groundwater pollution)
  - How does risk vary with different technologies, “material” content, and conditions during application (e.g., wind speed/variability, precipitation, soil type/condition)
  - What is the potential for food safety risks for applying manure to growing crops? (e.g., stop application as soon as plant flowers, etc)
  - What potential for risk to food at neighboring properties due to overspray/misting concerns (e.g., cash crops, gardens, organic crops, direct-market crops) – could/how might recommendations address when not stop applying for different crops?
- What monitoring systems might be feasible?

Other general issues regarding Terminology:

- There is interest in ensuring that the recommendations we produce use clear and specific terminology (e.g., for manure, liquid manure derivative, other types of wastewater listed in material and technology above).
- Participants recognized the limitations of the workgroup name (“Manure Irrigation Workgroup”) to describe the breadth of issues we are addressing. A proposal to refer to the issue as “precision nutrient application” rather than “manure irrigation” prompted a discussion about the many other forms of nutrient application this group is not considering; The terms “manure irrigation” and “spray irrigation” may call to mind images of high-pressure aerial distribution through end guns and not convey the potential control involved with low-pressure, drop-nozzle systems, involving large droplet sizes. The group did not fully resolve the naming issue.

## **6. Additional information needed for workgroup deliberations, and process details.**

The Workgroup identified several areas where more information is needed, either in the form of reports, research papers, or speakers.

- How people perceived risk – preparedness and risk communication
- Quality of Life – how is it measured and affected by issues such as odor, aesthetics, etc. How does legal concept of “nuisance” fit with “quality of life” issues?
- Information about what other states are doing with these practices – risk mitigation measures, bans, best practices, etc. Specific examples mentioned included: Iowa restrictions based on area, height of spray, etc; North Carolina ban (?); as well as other countries (Holland and Denmark were noted) and the relevance/quality of those studies. Also what are contextual differences and similarities with Wisconsin.
- Specific concerns regarding organic certification and direct market-producers including CSAs (Community Supported Agriculture farms). How do these systems work, and how might they be affected?
- Need an overview of rules and industry guidelines related to manure application on food crops.
- The legal framework for public health protection in Wisconsin with respect to our issue – local, state, and federal. What are the key functions and public health protections and how are they connected to these issues?
- More information (possibly a speaker) about LA-MRSA. Perhaps the research team from Johns Hopkins University.
- More about current regulations in Wisconsin related to manure irrigation (more detail).
- In general, information from other states/researchers about concerns such as worker studies of health effects.

Discussion led to a general sequencing and timeline for Workgroup. The group expressed a desire to complete work in early 2014, although there was a recognition that results from the UW/ARS drift study would not be available until Spring/summer 2014. Separately, there was an interest in having some recommendations in time for winter association meetings.

Proposed sequencing, recognizing an iterative process of discussing and revisiting issues through time:

- Technology issues
  - “Manure”/“Material” – content and related health risks, etc
  - comparison of form and content across different application technologies – what do we think/know about relative risk for issues of concern?
  - Issues influencing air quality and transport off site – gases and particulates
- Public health organizational and regulatory issues
- Information about organic certification and direct-market concerns.
- Input to Drift Study: review underlying assumptions for QMRA (Quantitative Microbial Risk Assessment) modeling related to assigning a “risk” to measured variables; helping the research team set appropriate assumptions for interpreting risk associated with the drift study.

- Regulatory issues – including comparison of what other states/areas are doing [postpone until later/after better understanding of issues ] – about 2/3rds point
- Putting it all together – synthesis
- Recommendation development.

Comment: The Workgroup will review overall sequencing and timeline issues during each meeting.

#### Time commitment and Logistics Considerations

- Prefer longer (most of the day) meetings that are less frequent. Need to balance driving time with getting enough accomplished.
- Maybe some of the presentations can be remote for speaker and participants – through either public or private webinars
- Homework and background reading is acceptable with appropriate advance notice
- Consider creating an option for calling in for those who can't be present.
- free parking is important

#### **7. Actions before next meeting.**

- identify a system for sharing documents with the workgroup
- post documents that have been submitted to the group or requested to be posted by workgroup members
- schedule future meetings and meeting locations