

MANAGEMENT CHALLENGES OF RUNNING PARALLEL ORGANIC AND CONVENTIONAL SYSTEMS

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Introduction

The Arlington Agricultural Research Station (AARS) is the largest of 12 UW-Madison Research Stations. It supports a wide cross section of research and programs for 10 different departments in the College of Agricultural and Life Sciences (CALs).

The station consists of approximately 2100 acres of cropland and 14 different crop and livestock units. Approximately 1000 acres is devoted to crop research and the remaining 1100 acres is used as feed for the research livestock units. AARS annually grows approximately 600 acres of corn, 400 acres of forages, 200 acres of soybeans and 100 acres of small grains. This includes the ~80 acres of Certified Organic land.

The AARS staff provides services to CALs researchers which include growing feed for animals, preparing feed rations, performing field operations for crop researchers, removing animal wastes, mowing lawns and research alleyways, trucking, and maintenance and repair of facilities and equipment. The AARS staff also helps facilitate approximately 100 events at our 500-seat Public Events Building and Headquarters meeting room each year.

History of Certified Organic Land at UW Arlington

I certainly want to thank Josh Posner (Professor, Agronomy, UW-Madison) and Janet Hedtcke (Sr Research Specialist, Agronomy, UW-Madison) for their work on getting this organic area, now called the “organic corner” established. Josh has over the years been very supportive of AARS and without Janet guiding us through the certification process we would not have this valuable research area.

The WICST (Wisconsin Integrated Cropping Systems Trial) started in the early 90s by Josh Posner, had an organic rotation for one of the systems. Since each plot was only seven tenths of an acre it would be hard to certify because of the inadequate buffer but all other organic rules are followed. In 2003, to meet the expanded research needs of Josh and other researchers, it was decided that an area across the road from headquarters, the organic corner, would be a good site. A hybrid of the WICST 3-yr organic dairy system was used to integrate crop diversity and manure which is vital to the success of most organic systems. These 45 acres were certified organic in 2007; 3 years after the last non-organic inputs were used. This area has been used by over a dozen researchers over its short existence.

In 2006, Eileen Cullen (Associate Professor, UW-Madison Entomology) started another organic area in what we call the 500 fields. This added another 35 acres that became certified in 2009. With this addition we now have a total of 80 acres of certified organic land.

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Our organic land is certified with MOSA (Midwest Organic Service Association), which also provides forms to facilitate record keeping (available for free download). We pay an annual fee, an inspection fee and .75% of sales to MOSA. The MOSA website is www.mosaorganic.org.

Corn, soybeans, and wheat are marketed to local growers or vendors when possible. The forages are used on the station at livestock units. We receive a good organic premium for the grains that offset the extra labor and tillage required.

Different Way of Thinking – Timing and Timeliness

I think one of the hardest challenges for me was to think of doing things a different way from the way we handled conventional crops. As I will talk about later, this is where the good field plan comes into play. By having this plan in place you will know what and when things are expected to be done.

Planting Date

We start planting conventional corn by the third week of April. With organic crops we wait until the third week of May. We need to wait for a couple reasons:

- (1) We needed warmer temperatures to get a couple flushes of weed growth and a couple tillage passes, usually staggered a week apart, before planting.
- (2) We also needed warmer temperatures to get the crop out of the ground fast. You need to create that differential between crop growth and weed growth so you can use mechanical tools.

Dedicate Manpower and Time to Manage

Understand that if you don't control weeds you will get significant yield loss. You have a small window to do things correctly the first time.

- With a conventional tillage system 4 passes across the field including fall tillage, digger, plant and harvest. With organic system we can make as many as 8 passes across the field. These include fall tillage, digger, digger, planter, tine weeder or rotary hoe, cultivator, cultivator, and harvest.
- Be prepared to do some hand weeding. Hot spots will pop up and they will need to be taken care of.

Get control of the Weeds

Crop rotation and a healthy vigorous stand will help with weed control. In addition, having the diversity of equipment available, starting early and staying aggressive are the keys to success. In data from WICST yields are 95 to 100% of conventional crops with good weed control but let weeds get the upper hand and yields can fall to 60 to 70% of conventional.

Selection of an Organic Site

Some criteria that we used for site selection that has helped us and could save you trouble:

1. Close to our Public Events facility where most field days are held, easy access
2. Close to an area very visible on a daily basis. You need to know what's happening on a daily basis as far as weeds and crop growth, to name a few. Timing in an organic system is very important. Miss something and you will probably pay directly out of the pocket as lost revenue. Second, have it as an area everyone can see. If everyone sees it you will take care of it better.
3. Find an isolated piece of land with naturally existing borders of roads. It is required to have at least a 30-ft border and if surrounded by naturally occurring borders, less land waste.
4. Select an area that is level or at least has a good conservation plan in place. With the amount of tillage required the leveler the better. Due to the rains of 2008 we needed to add waterways and diversions to our organic corner because of heavy erosion.
5. Allow room for access roads or strips. You will need to drive in several times with tillage tools.

Dirty Sheets and Field Plan Sheets

With the experience gained from the WICST we started a new record keeping process with the organic corner. The WICST had record sheets with a yearly plan guide for each rotation and a map with crops to be grown in each rotation. The organic corner "dirty sheets" contain the same layout as the WICST, and with the addition of the 500 fields we adopted the same scheme.

We use the dirty sheets to provide instructions to employees doing each task. When the task is completed, the dirty sheet is modified if needed, signed by the employee and returned to management. Later the information is added to our field records database and the cleaning information is entered into the cleaning log.

The Critical Parts to "Dirty Sheets" include:

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| *Map with field acres | *Date & Operation |
| *Instructions | *Cleaning Procedures |
| *Operator (have operator sign) | *Notes and Measure |

The second part of the organization is the Field Operation Plan Sheets. Going into each year a plan is put together for all activities that are planned on a field or plot basis.

The Critical Parts to Plan Sheets include:

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| *Crop | *Plot or Field Numbers |
| *Tillage | *Planting (including varieties and rates) |
| *Fertilizer (manure or other) | *Post Plant Tillage and other Operations |
| *Harvest | *Fall Practices |

Forms and Records

Access Records (data base of complete farm records)
Cleaning Log
Organic Seed Search
Seed Tags and Receipts
Crop Input Inventory
Seeds, Seedlings and Planting Stock
Farm: Update Organic Plan Long Form (every 3 years)
Update Farm Plan Questionnaire – Short Form
TCA (Transaction Certificate Authorization)
Off-Site Transportation Cleaning Affidavit
User Fee Billing (quarterly)

Summary of Other Suggestions

Get Employees to Buy into the System

By having the employees doing each process, in detail, from beginning to end, they learn what to do and why it is important. They should know how to properly clean equipment, document and record all information, save a seed sample and the seed label. If this is done each time it saves a lot of scrambling later to figure out what was actually done.

Dedicated Cleaning Site

Cleaning equipment is so important not only for organic but all equipment. We used to do it in front of shop but it would run down across the parking lot next to our headquarters and make a mess. We now have built a new wash pad with a new pressure washer on the back of a building further away from headquarters.

Dedicated Room for Seed Storage

Sometimes it was difficult to tell if the seed was organic approved or not and which researcher purchased the seed. Now we know if it's in the seed room we should have all the paperwork needed. If seed was used in 2009 it should be able to use in 2010 because it was already approved.

Dedicated Equipment

If you think you have all the equipment you need for organic you are wrong. Some specialized equipment will be needed and the equipment will need to be in good shape. Things like a crimper, tine weeder, a couple cultivators, and an aggressive rotary hoe. We also purchased a dedicated corn planter. Going from a conventional planter to an organic planter takes a good 4 hours of cleanup.

Order Same Varieties and Coordinate Planting Dates

We try to order the same varieties for all three sites. This way we can share seed and don't have so many partial bags left over. Emptying seed boxes and cleaning always takes extra time. We also try to plant similar dates where possible to get done with the planter at the same time.