

PROGRESS REPORT 2009
North Central Region
Sustainable Agriculture Research and Education (SARE) Program

Project Title: Developing Harvest Task Checklists to Assist Farmers in Managing Harvest Crews

Project Number: FNC08-712

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1. Describe in detail your work activities and how you used your grant funds this year.
(Use another sheet if necessary.)

- Determined priority crops that harvest crews would likely harvest multiple times throughout the season, and chose 10 crops to develop into checklists.
- Created draft checklists for each crop, including tools needed, field harvest procedures, and wash shed cleaning and packing procedures.
- Printed, trialed, and revised Harvest Checklists for each crop, making changes based on farmer and harvest crew feedback.
- Explored quantitative measures that would be useful to collect to evaluate the effectiveness of the harvest checklists and trialed several questionnaires with harvest crews.
- Printed and laminated all final checklists, so they could be easily used in the field and trained the harvest crew to use harvest checklist. Final checklists are attached.
- Shared harvest checklists with Tricia Bross to review for her farm.
- Collected data on amount of time taken to complete task, on confidence level of harvest crew, and farmer satisfaction of final product for harvest crews that had the harvest checklist as a reference (Wednesday harvest crews) and harvest crews that *did not* have harvest checklist as a reference (Friday harvest crews).

- Tricia is currently altering checklist to match her farm needs.
- Tricia shared this project and its purpose with other farmers to gain feedback.

Funds Used:

- Gini Knight worked 260 hours on this project at Troy Community Farm: developing checklists, creating data collection worksheets, training and working with harvest crews, and collating and analyzing data. \$2600
- Claire Strader worked 20 hours on this project at Troy Community Farm finalizing checklists, training harvest crews, and guiding/supervising Gini. \$340
- Printing and laminating of harvest checklists. \$8

2. List the results of your project and what you have learned so far.

Because the harvest checklists were not finalized until late summer, data collection for 2009 was minimal. Data collection in 2010 will begin with the first harvests and before the crews are already familiar with the tasks through prior training and work on the farm.

Table 1. Summary of Harvest Results by Crop

Crop	Average minutes per bunch	(N) 9 trials	Average minutes per bunch	(N) 3 trials
	Wednesday		Friday	
Cucumbers		0		0
Summer Squash		0		0
Lettuce		0		0
Kale	4.9	1		0
Chard	7.5	1		0
Basil	3.5	2		0
Scallions	5.3	1	12.8	1
Beets	3.6	1		0
Leeks	7.9	3		0
Radish		0	8.4	2

Confidence Levels

When trialing this experiment, we found that we could fairly easily record the amount of time that it takes to complete the tasks, but recording qualitative measures proved to be more challenging. One reason for this difficulty was that the qualitative measures were not recorded immediately following the task. The number of workers in a harvest crew often fluctuates from start to finish. The largest number of workers is needed in the field for actual harvest, but often fewer workers are needed during washing and packing, with the exception of crops that are bunched in the wash shed. Therefore, when workers are no longer needed for a certain task, they are directed to a different task, thus not following a crop to its completion. This change in workers meant that qualitative questions were answered at the end of the workday, and not immediately after the task, which could cause some inaccuracies with answers. Next year, we have planned a better system for capturing this data immediately after harvest workers complete their assigned tasks.

After completing the harvest tasks, workers were asked to select one of the three options: 1) Very Confident in completing the task, 2) Somewhat Confident in completing the task – had to ask a question, 3) Not confident – unclear with how to complete some of the tasks, and had to ask farmer several questions.

Our current results show that 87% of harvest crews (n=23 workers) *with* checklists were very confident and 13% were somewhat confident, having to ask at least one question to complete the task. One hundred percent of harvest crews (n=7 workers) *without* the checklist were very confident in completing the task. No one on either crew was not confident in completing the harvest tasks. Unfortunately, we did not collect this data for each of the farm workers. We collected confidence level data from 30 of the 59 workers that were timed during the harvest.

Harvest Crew Confidence Levels

Harvest Day	% Very Confident	% Somewhat Confident	% Not Confident
W (n=23)	87%	13%	-
F (n=7)	100%	-	-

with checklists (Wednesday)

without checklists (Friday)

Farmer Satisfaction

Workers get more familiar with harvest techniques as the season progresses. Since harvest checklists were created later in the season results may be confounded with experience of crew.

After the final product was completed, the farmer was asked to select one of the following options: 1) Very satisfied with final product, 2) Satisfied, or 3) Not very satisfied. The farmer was very satisfied with the final product 83% of the time for harvest crews *with* checklists (n=6), and was just satisfied with the final product 17% of the time. The farmer was very satisfied with the final product 100% of the time for the harvest crews *without* the checklists (n=1). We need more data to complete a strong analysis if the harvest checklists were assisting in creating a satisfactory product.

Farmer Satisfaction Levels with Final Product

Harvest Day	Very Satisfied with final product	Satisfied	Not Satisfied with final product
W (n=7)	86%	14%	-
F (n=1)	100%	-	-

with checklists (Wednesday)

without checklists (Friday)

Overall, the amount of time that each crop takes to be harvested, washed and packed was insightful and useful to the farmers. With more detailed harvest information on these crops, farmers may get a better sense of what are the most valuable or efficient crops to plant, and when would you want to consider mechanizing a task.

3. Describe your work plan for next year.

- Reevaluate data collection, and finalize collection methods by April 1.
- Finalize harvest checklists for Tricia's farm.
- Coordinate dates for data collection at Troy and Luna Circle. Because of the time it took to develop the checklist in 2009, data collection did not begin until late summer. Data collection for 2010 will begin with the first harvests and before crews have much experience in the field.
- Train appropriate interns/staff to collect data.
- Both farms will use and collect data with harvest crew using checklist two to four times for each crop, and with harvest crew not using checklist at least two to four times for each crop.
 - o 4 tests w/checklist compared to 4 tests w/o checklist (2 at Troy and 2 at Luna Circle)
 - o 8 tests x 10 crops – 80 tests total
 - o 40 tests w/checklist compared to 40 checklists w/o for confidence levels and farmer satisfaction
- Tests should be staggered throughout the growing season.
- Record data throughout season.
- Analyze data in November/December.
- Share project results and harvest checklist templates through the channels listed below.

4. How did you share information from your project with others? (Include the number of people who attended field days or demonstrations.) What plans do you have for sharing information next year?

Information sharing about this project in 2009 was limited to:

- Discussions with farm interns at Troy (11), most of whom participated in the project as part of the field crews, and some of whom (5) intend to work on or start their own farms in the future.
- Informal conversations with farmer peers at meetings and gatherings.

When data collection is complete and results are finalized, results will be shared in the following ways:

- Create workshop on Harvest Checklists for Madison Area CSA Coalition (MACSAC) grower gathering (42 growers) in January 2011.
- Post workshop materials on MACSAC website (www.macsac.org) including harvest checklist templates which can be modified for use at other farms.
- Submit workshop proposal to the 2011 MOSES Organic Farming Conference (<http://www.moscsorganic.org/workshops.html>)

Send completed report by mail or e-mail:

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