The Journal of Extension

Volume 45 | Number 1 Article 14

2-1-2007

Horse and Human Labor Estimates for Amish Farms

Randall E. James
Ohio State University Extension, james.7@osu.edu

February 2007 // Volume 45 // Number 1 // Research in Brief // 1RIB5

Horse and Human Labor Estimates for Amish Farms

Abstract
Amish farms are one of the fastest-growing segments of the U.S. farm community. A 2003 study estimated horse and human labor requirements for Amish farms. A typical Amish crop rotation of 15 acres small grains, 20 acres alfalfa hay, and 15 acres corn was found to have a total labor requirement of only 920 hours/year. Using information from this study and earlier research, a series of crop enterprise budgets for Amish farms was developed. These budgets provide a tool that Extension educators can use with the rapidly growing number of Amish farms across the country.

Randall E. James
Professor
Ohio State University Extension
Burton, Ohio
james.7@osu.edu

Extension workers are increasingly being called on to assist Amish farm families. The Amish population more than doubles every 20 years, and farming has always been one of the foremost occupations. There are over 1,400 congregations, or church districts, in at least 33 states and one Canadian province. These church districts are clustered together into more than 250 settlements (Kraybill & Hostetter, 2001; Kraybill, 1989). New settlements are constantly being established in areas where Amish have never lived before, which means an ever-increasing number of Extension educators need relevant materials to assist these new communities.

The economic efficiencies of large farms and the cost-size relationships of farms have long been important areas of research for agricultural economists (Castle, 1989). Extension educators have sometimes advocated that farms need to both get bigger and specialize in order to survive. Against this backdrop, it is easy to view Amish farms as an anachronism--a part of our rural past. However, Extension educators need to view Amish farms as important, valid clientele. Small, diversified Amish farms, using traditional farming methods and draft horses, or mules, as a major power source, are surprisingly successful, sustainable, and profitable (James, 2005; Bender, 2001; Stinner, Moore, & Stinner, 1999; Stinner, Paoletti & Stinner, 1989).

The proceedings of recent national conferences focused on Amish communities suggest that Extension workers are now routinely asked to help Amish farmers with a wide variety of agricultural problems. Finding relevant, accurate, up-to-date information to assist horse-powered Amish farms represents a particular challenge to Extension workers serving these communities (Conferences for Extension Educators 1998, 2001, 2004). The methods and equipment used on Amish farms are largely dictated by the *ordnung* (spoken rules of the church district) of each church district (Kraybill & Olshan, 1994; Drake & James, 1993). While rules vary somewhat between church districts within a settlement and more widely between different settlements, almost all old-order Amish farms use horses and horse-drawn equipment.

Farm management information designed to help Extension educators and farmers estimate the costs and returns for crop production on Amish farms was identified as an important educational need. A recent study found the mean purchase price for all of the crop production equipment on a typical Amish farm to be approximately $24,000. The total annual cost of the equipment was found to be slightly over $2,000. The purchase price of a draft horse was reported to be approximately $1,100, and the total cost of owning and maintaining a draft horse was $2.30/day.

This information on machinery and horse costs was useful in beginning to calculate the cost of Amish crop production. However, a major limitation preventing the development of realistic

Extension crop enterprise budgets and other educational tools was the lack of information on the amount of horse and human hours needed to produce crops on Amish farms (James, 2004).

Methodology

In 2003, two county Extension workers facilitated discussions with three small groups of Amish farmers in the Geauga Amish settlement. The settlement is centered in Geauga County, Ohio, and is the fourth-largest Amish settlement in the world, with approximately 1,800 families and over 80 church districts (Kraybill & Hostetter, 2001; Miller, 2001). The interviews took place on three separate days in three different Amish homes. Approximately six to 10 Amish farmers participated in each group interview.

Utilizing a modified focus group interview process and a set interview guide, each group was asked to discuss and agree upon the amount of acres/day a typical horse hitch would be able to work for various field operations. Based on discussions with Amish farmers, a normal horse working day was set at 6 hours, consisting of 3 hours in the morning, a noon break, and 3 hours in the afternoon. The number of horses in a typical horse hitch for each field operation was established in the first group interview and held constant for the next two group interviews.

The participants, in each of the group interviews, were encouraged to discuss each field operation individually and reach a group consensus on the various values. In two cases, field operations were not estimated in acres/day. Manure spreading was estimated in hours/day, and cutting firewood was estimated in hours/cord.

Results and Discussion

Mean values of the information gleaned from all three interviews are presented in Table 1. The final column in Table 1 is a calculated estimate of the amount of human labor involved in each operation. Because each team, regardless of the number of horses in the team, is driven by one farmer, it is possible to divide the 6-hour horse and driver day by the mean acres/day to determine the amount of farmer labor required for each operation. In a few cases, such as corn silage hauling, small grain hauling, and hay hauling, two people are required for each horse team, and the human labor values are adjusted accordingly.

Table 1.
Estimates of Horse and Human Labor Requirements on Amish Farms in Geauga County, Ohio

Field Operation	Horses/Hitch	Mean Acres/Day	Mean Horse Hours/Acre	Operator Hours/Acre
Plow	5	3	10	2
Disc	5	9.5	3.1	0.6
Harrow	5	9.5	3.1	0.6
Corn Planter	2	9	1.3	0.7
Grain Drill	2	11	1.1	0.6
Fertilizing	2	30	0.40	0.2
Spraying	2	45	0.26	0.1
Cultivation	3	9	2	0.7
Corn Picking	2	0.50	24	12
Corn Silage Binding	3	2	9	3
Corn Silage Hauling	5 (2 teams)	2	15	12*
Small Grain Binding	3	7	2.6	0.9
Small Grain Hauling	6 (3 teams)	6	6	6*
Hay Mowing	2	9	1.3	0.7
Hay Tedding	2	15	0.8	0.4
Hay Raking	2	15	0.8	0.4
Hay Baling	3	14	1.3	0.4
Hay Hauling	2	12	1	1*
Manure Hauling	2	1	2 hr/day	1 hr/day

Fire Wood	2	3	2 hr/cord	2 hr/cord
* 2 people/team				

Information from this study and an earlier study on Amish machinery costs (James, 2004) was used to produce a series of crop enterprise budgets for horse-drawn/Amish practices. The format for each budget was made to be similar to the format used for non-Amish crop enterprise budgets available through the Ohio State University Extension. Because the format for both the Amish and the non-Amish budgets is similar, direct comparisons between these two radically different agricultural systems can be made.

Comparisons of the budgets for the two systems found that on a per acre basis, return to labor and management (net return above all costs except labor and management) was consistently higher for Amish farms. Return to labor and management for the Amish farming system was estimated to be $126/acre for small grains, $233/acre for alfalfa hay, and $65/acre for corn. The return to labor and management for the conventional farming budgets was only $28/acre for small grains, $124/acre for alfalfa, and a loss of $9/acre for corn.

Operator labor/acre was consistently higher on Amish farms compared to non-Amish farms. On Amish farms, approximately 12, 25, and 17 hours of labor/acre were required for small grains, alfalfa hay, and corn, respectively. Non-Amish farms required approximately 3.5, 6.5, and 3.6 hours of labor/acre for the same crops.

However, Amish farm far less acres. A typical Amish farm rotation of 15 acres of small grains, 20 acres of alfalfa hay, and 15 acres of corn has an estimated total labor requirement of only 920 hours/year, or 23 40-hour work weeks, and the labor requirement is spread throughout the spring, summer and fall seasons. In most cases, this labor requirement can easily be met within the Amish family. In contrast, just the 1000 acres of corn on which the non-Amish budget is based requires 3600 hours, or 90 forty-hour work weeks. In this case, most of the labor requirement is compacted into the spring and fall and often necessitates hiring labor, which reduces the return to the farm operator by the total cost of the hired labor.

Implications for Extension

Most of U.S. agriculture gave up farming with horses at least a generation ago, and most Extension information is geared toward assisting modern tractor-powered farms. Yet while farm numbers nationally are declining, the Amish continue to establish new successful farming communities. Specific data is not available, but it is likely that in terms of farm numbers, the Amish represent one of the fastest growing segments of the national agricultural industry.

Therefore, Extension educators anywhere in the country may suddenly find themselves scrambling to find valid, up-to-date information to assist a new Amish settlement in their region. The crop enterprise budgets discussed in this article, and available online at <http://aede.osu.edu/programs/farmmanagement/budgets/amish.index.htm> may be one educational tool that will help to open a dialogue and demonstrate that Extension is seriously interested in working with this fast-growing, horse-powered segment of the U.S. farm community.

References

Bender, M. H. (2001). An economic comparison of traditional and conventional agricultural systems at a county level. *American Journal of Alternative Agriculture*, 16 (1).

Castle, E. (1989). Is farming a constant cost industry? *American Journal of Agricultural Economics,* 71 (3).

Conference for Extension Educators--Extension Education in Amish and Other Anabaptist Communities (1998). Proceedings.

Conference for Extension Educators--Serving Amish and Anabaptist Communities (2001). Proceedings.

Conference for Extension Educators--Enhancing the Health and Well-Being of Plain Communities (2004). Proceedings.

Drake, B., & James, R. (1993). Extension in religious communities. *Journal of Extension* [On-line], 31(1). Available at: http://www.joe.org/joe/1993spring/a6.html

James, R. (2004). Machinery cost estimates for Amish farms. *Journal of Extension* [On-line], 42(5). Available at: http://www.joe.org/joe/2004october/rb8.shtml

James, R. (2005). *Why cows learn Dutch and other secrets of Amish farms*. Kent, OH: Kent State University Press.

Kraybill, D. (1989). *The riddle of Amish culture.* Baltimore: The John Hopkins University Press.

Kraybill, D., & Hostetter, C. (2001). *Anabaptist world*. Scottsdale, PA: Herald Press.

Kraybill, D., & Olshan, M. (1994). *The amish struggle with modernity.* Hanover, NH: University Press of New England.

Miller, A. (2001). *Ohio Amish directory, Geauga County and vicinity*. Sugarcreek, OH: Carlisle Printing.

Stinner, D., Moore, R., & Stinner, B. R. (1999). Integrating quality of life, economic and environmental issues: An agroecosystem analysis of amish farming. *Extension and education materials for sustainable agriculture*, 10. University of Nebraska-Lincoln, Center for Sustainable Agricultural Systems.

Stinner, D., Paoletti, M. G., & Stinner, B. R. (1989). In search of traditional farm wisdom for a more sustainable agriculture: A study of Amish farming and society. *Agriculture, Ecosystems and Environment*, 27:77-90. Amsterdam: Elsevier Science Publishers B.V.