



Is Horse-Drawn Farming for You?

Introduction

The decision whether or not to adopt horse-drawn farming in your operation has many components. Are you interested in farming with horses as a source of power? Do you already employ horses in your operation in some way? Do you want to be involved in agricultural production, logging, or agritourism in a way that uses horses as a means of power? Are you interested in or confined to agricultural production on a small scale and/or in a diversified manner?

The Purdue Horse-Drawn Farming Readiness Assessment Tool (PHDFRA) (<https://ag.purdue.edu/agecon/Pages/Horse-Powered-Farming.aspx>) can assist you in making decisions surrounding the use of horse-drawn power in your agricultural operation. The PHDFRA Tool is an interactive tool designed to assist you in evaluating some of the qualitative aspects of this decision.

There are many ways to use horse-drawn power in your operation. With the appropriate equipment, horses can be used for tillage and cultivation (Leslie, 2013). Likewise, horses can be used on traditional field crops for plowing, mowing hay, drilling grain and discing fields (Miller, 1981). Horses can be used in logging operations and agritourism operations for activities like hayrides, wagon rides, or sleigh rides (Leslie, 2013). Horses can also be used to complete tasks around the farm such as hauling maple syrup or firewood, spreading compost/manure, or plowing snow (Leslie, 2013).

Advantages of Horse-Drawn Farming

There are several advantages and disadvantages of horse-drawn farming. An important advantage exists if you (or others on your operation) enjoy working with horses. First of all, horse-drawn farming can be appealing to farm visitors and the broader community (Leslie, 2013). Thus, horses and the use of horse-drawn power can be an important part of agritourism and agricultural ambassador operations. Unlike tractors, horses produce the energy they use to complete work using inputs like feed, grain, and pasture (Miller, 1981). Farmers have the opportunity to grow these inputs on the farm rather than relying on purchased inputs such as fuel for tractors (Leslie, 2013). Thus, horse-drawn farming is often perceived as a part of a self-sufficient lifestyle that employs renewable resources. Furthermore, horses can be maintained on pasture for much of the year, and pasture is often on marginal acres that aren't suitable for other uses (Miller, 1981).

Using horses can help minimize impacts on farmland in terms of making ruts and reducing soil compaction (Leslie, 2013). Beyond farmland impacts and looking more generally at impacts on natural environments, when used in a logging operation, horses do much less damage to the woods than machinery (Miller, 2004).

Unlike tractors, horses have the potential to increase in value, to a point, as they gain more experience (Leslie, 2013). While tractors rapidly depreciate in value when they are new, horses increase in value up to maturity and remain stable until the horse is too old or unsuitable for work (Miller, 2004). In addition, horses generate manure that can be used as fertilizer (Leslie, 2013; Miller, 1981). Likewise, broodmares can produce foals to replace themselves, grow the herd on

Elizabeth Byrd, Nicole Olynk Widmar,
and Joan Fulton

Department of Agricultural Economics
Purdue University

Audience: Individuals using or seeking to begin using horse-drawn power in farming, agricultural and/or agritourism operations.

Content: Provides interested stakeholders and decision makers with a set of qualitative points to consider before adopting horse-drawn power in their operations. Assists users in evaluating the degree to which horse-drawn farming fits their knowledge, skills, lifestyle, personal or farm motivations, and available resources.

Outcome: Readers will have a baseline understanding of the skills and knowledge needed for beginning horse drawn farming. Users will understand the *Purdue Horse-Drawn Farming Readiness Assessment Tool* (<https://ag.purdue.edu/agecon/Pages/Horse-Powered-Farming.aspx>) and have realistic expectations of the knowledge and/or skills needed to adopt horse-drawn farming. The Excel spreadsheet will aid the user in evaluation of his or her knowledge, skills, resources, and values to make a decision about adopting horse-drawn power on their operation.

farm, or sell to provide a source of revenue (Leslie, 2013). Thus, in addition to producing their own replacements, that represents a cash savings to farmers, working broodmares produce foals that can be sold as a source of revenue for the farm (Miller, 2004). Using horse-drawn power can make the farm less dependent on outside (purchased) inputs such as fuel, fertilizer, and new stock. Thus, horses can contribute to a self-sufficient farm (Leslie, 2013).

Disadvantages of Horse-Drawn Farming

On the other hand, farming with horses has many potential drawbacks to be considered. First, it may be difficult to find suitably trained horses and horse-drawn machinery and equipment (Leslie, 2013; Miller, 1981). Further, farming with horses requires teamster skills—skills at driving and working horses (Leslie, 2013). These skills must be learned before one can safely and efficiently farm with horses, and current farm employees may not possess such skills. Keeping horses and farming with them can become very expensive depending on the cost of production, or cost to buy inputs such as feed, veterinary care, and equipment.

At a more fundamental level, horses are simply slower than tractors (Miller, 1981). Thus, horses are not optimal for operations where many acres must be worked in a short period of time, such as in monoculture operations (Damerow and Rice, 2008). Horses are best used on mixed cropping that is divided by spring and fall (Miller, 1981). Using a combination of tractor and horse-drawn power is also an option. You can also use horses for additional tasks as you and the team are more experienced and/or acquire additional implements (Leslie, 2013). It is also important to consider that horses perform best when worked on a regular basis (Leslie, 2013). Finally, unlike a tractor, horses require daily care such as feed, watering, and turnout even when not in use (Leslie, 2013; Miller, 1981). Thus, it is likely no surprise that horse-powered farming is not a fit for all farms, due to farm size in terms of sheer numbers of acres, the nature of the crops being grown (i.e., timing of planting and harvest), and specialized knowledge required.

The Purdue Horse-Drawn Farming Readiness Assessment Tool

The PHDFRA Tool is an interactive tool that incorporates your individual parameters to return individualized recommendations about the expected degree of difficulty you may encounter in pursuing horse-drawn farming. This tool incorporates levels of your current horse knowledge, knowledge about the revenue-generating portion of your business, alignment with lifestyle/values, and available resources. These elements are combined to make a personalized recommendation about whether horse-drawn farming is a good choice for your operation and help to identify areas where you may benefit from additional learning, information, or consideration. The specific financial aspects of keeping horses can be found in an equine enterprise budget.

Horse Knowledge

In order to effectively and safely use horse-drawn power in your operation, you will need to have knowledge about owning, caring for, and driving working horses. It is important to consider your level of basic horse knowledge, such as experience riding or driving horses, and your comfort level working around horses,

particularly draft horses (Damerow and Rice, 2008). In fact, experience riding horses can help new teamsters transition to driving horses (Leslie, 2013). Some skills and/or experience that will prove helpful are handling feet and legs, knowledge of basic horse nutrition and veterinary care, and basic skills for fixing barns, stalls, and tack. (Damerow and Rice, 2008). Other factors to consider include your experience breaking training horses to ride and/or drive or access to trainers who can do so if you cannot or decide not to purchase a fully trained team of horses.

You should be able to monitor a horse’s exertion while working and properly condition horses to work (Leslie, 2013). Some important considerations specific to using horses for farm work are experience harnessing draft horses and skills at being a teamster (Damerow and Rice, 2008). Thus, you will need to be familiar with harnessing, hitching, and driving a team of horses. One way in which you might increase your level of horse knowledge is to have access to an experienced mentor (Leslie, 2013). The following scales will help you determine your current level of skills and knowledge necessary for the safe and successful use of horse drawn power in your operation. At this point we encourage you to use the PHDFRA tool where you can enter your score for each of the areas on the “Horse-Drawn Farming Scorecard” tab.

Table 1, Horse Care Knowledge, will help you assess your ability to care for horses on your own. Table 2, Horse Driving/Riding, will help you assess your current level of experience working with horses, including riding and/or driving horses. Give yourself a score of one through five based on which description best fits you/your operation.

Table 1. Horse Care Knowledge

Description	Score
Little to no experience caring for horses on a daily basis, managing nutrition, or monitoring condition. No experience performing routine veterinary care (vaccinations, deworming, basic equine first aid).	1
Limited experience caring for horses on a daily basis. Example: boarded a horse at a barn, but someone else took care of day-to-day feeding, adjustments in feeding, etc.	2
Familiar with basic horse care (basic nutrition, basic veterinary care, hoof care, and first aid). Some experience caring for horses on a daily basis.	3
Able to perform some care by self (give own vaccinations or injections if needed, deworm, recognize the signs of colic, able to perform preliminary first aid to horse in event of injury, pull a shoe). Monitor horse condition, exertion while working.	4
Has cared extensively for horses on a daily basis, with experience in caring for draft horses. Familiar with horse breeding and/or foaling and possible complications if you plan on breeding horses. Experience with basic veterinary care for horses including giving vaccinations, basic first aid, and experience caring for pregnant mares and foals.	5

Table 2. Horse Riding/Driving Experience

Description	Score
Little to no experience with horses of any kind. May have ridden a horse occasionally in the past or taken a few riding lessons with an instructor/supervision in a controlled environment.	1
Limited riding/driving/handling experience such as lessons, trail riding, or showing. Some experience riding unsupervised in a variety of situations. But most experience was with well-broke horses.	2
Experience handling/riding horses and/or some experience harnessing, hitching, and driving either light or draft horses. May have ridden/handled horses unsupervised in a variety of situations and may have some experience training/working with green riding horses.	3
Extensive experience driving either light or draft horses in a variety of situations and ability to harness and hitch horses easily. (i.e., for show, pleasure, wagon rides, parades)	4
Experience farming with horses using a variety of horse drawn equipment suitable for your operation.	5

Table 3. Lifestyle/Values

Description	Score
I like being able to just "turn off " a tractor and call it a night rather than caring for horses after their work is done. Having horses is not necessary to our operation (e.g., marketing, reputation, public appeal). I would not enjoy having to care for horses daily or drive the horses unless they had a specific task to do.	1
I somewhat enjoy having horses and caring for them on a daily basis whether or not they are working. I would somewhat enjoy driving the horses even if they were not working.	2
I enjoy having and caring for horses even when they are not working. I enjoy driving/training the horses even if they are not working. I place some value on the other benefits they may offer (manure for fertilizer, etc.).	3
I value horses and their benefits other than as a source of power. I enjoy caring for them on a daily basis year round whether they are working or not. I enjoy driving the horses for pleasure in addition to their time working.	4
I (or my operation) value horses for more than just a source of power; we value their role as a part of a self-sufficient farm. We enjoy caring for the horses even when they are not working. Horses are an important part of our operation in that they attract visitors and/or build rapport with the community. Even if horses don't have a job to do, I enjoy driving them to keep their skills fresh.	5

Table 4. Operational Style

Description	Score
I would only need horses for short periods of time during the year (e.g., only grow one or two crops over a large number of acres). The work must be done quickly, and horses may not be able to complete the work quick enough, so I would need to also use tractors. Horses would be idle most of the year.	1
There are times of the year I need more than just a team of horses, so I may supplement with a tractor. Horses will spend more than half of the year idle without work to do (e.g., use horses for cultivation and hay production during summer)	2
I would be using the horses more than half the year to complete tasks around my operation. (e.g., using horses for tasks in the spring in addition to farming with them in the summer)	3
The horses would be employed most of the year doing various tasks. (e.g., horses would be worked in the spring, summer, and fall)	4
Our operation is small and diversified, thus horses would be used year-round in our operation to do various tasks. (e.g., spring, summer, fall, and winter)	5

Alignment with Lifestyle/Values

It is important to consider whether horse-drawn farming aligns with personal values and the values of your business. Farming with horses is not just a means of farm power, it is a lifestyle choice. One important consideration is whether or not you enjoy working with horses (Leslie, 2013). Do you find it acceptable that horses may be slower than tractors at completing work? For example, draft horses working all day average a speed 2-4 miles per hour, which is slower than tractors (Miller, 2004). Thus, horses are best suited to small-scaled and diversified agricultural production that includes both crops and livestock (Miller, 2004). Will you enjoy caring for horses even when they are not working? For example, after a day's work, horses must still be unharnessed, fed, watered, and more before the farmer is done (Miller, 2004). In comparison, caring for and maintaining tractors and equipment is less time sensitive and may be able to wait until tomorrow, whereas a horse requires feed and care. Likewise, horses must be cared for even on days when they are not working.

Table 3, Lifestyle/Values, will help you assess how horse-drawn farming fits with your personal or business values and preferred lifestyle. Table 4, Operational Style, will help you assess how horse-drawn farming fits with the style of farm you have or anticipate having. Give yourself a score of one through five based on which description best fits you/your operation.

I (or my operation) value horses for more than just a source of power; we value their role as a part of a self-sufficient farm. We enjoy caring for the horses even when they are not working. Horses are an important part of our operation in that they attract visitors and/or build rapport with the community. Even if horses

don't have a job to do, I enjoy driving them to keep their skills fresh.

Production/Revenue-Generating Enterprise

While horses are an important part of your farming operation, they may not be the primary source of revenue. It is important to identify where farm revenue comes from, including crop sales, hay production, sales of vegetables, and fees for wagon rides or agritourism operations. Thus, it is important to understand the non-equine side of your business. This can include experience growing crops, hay, and gardens and experience in a logging operation or agritourism operation. It is important you know any rules and regulations associated with the enterprise (e.g., rules for selling products at a farmers market), have knowledge of requirements of the enterprise (liability insurance, licenses), or have an established market (place to sell your products).

Table 5, Knowledge of Business Operations, will help you assess your current level of knowledge regarding the portion of your business that generates revenues. In other words, what is your level of knowledge of the non-horse part of your business? Give yourself a score of one through six based on which description best fits you/your operation.

Table 5. Knowledge of Business Operations

Description	Score
Little to no experience with the enterprise. Has not grown a garden, harvested hay, grown crops, etc. (e.g., no experience logging, identifying marketable trees, felling trees, or have an established outlet to sell logs)	1
Limited knowledge and experience with the enterprise. May have worked with another person. (e.g., have harvested corn, but did not make decisions on when to plant, when to make fertilizer and/or pesticide application, or when to harvest)	2
Some experience in own business or working with others. Limited management and/or decision-making experience in enterprise. (e.g., worked in an agritourism farm where visitors paid a fee to visit; responsible for tours and greeting guests, but did not make decisions such as obtaining liability insurance and setting ticket prices)	3
Experience in enterprise including some management and decision-making. (e.g., previously worked on a farm where hay was a primary crop; responsible for most aspects of hay production, including decisions regarding amount of fertilizer to apply and when to cut hay. Had some input into the price charged per bale for surplus hay.)	4
Extensive knowledge of enterprise, including decision-making (e.g., experience growing a large market garden, made all decisions regarding what to plant, cared for garden daily, has established reputation selling at local farmers market)	5
Extensive knowledge of enterprise, including the use of horses as a source of power.	6

Table 6. Available Resources

Description	Score
I don't have time to care for horses on a daily basis. I don't have available land for pasture or hay production. I don't have the financial ability to purchase horses, feed/hay, harness, and equipment. I do not currently have barns or other suitable shelters for draft animals.	1
I have some available land for pasture or hay production. I have limited time to care for animals daily. I have limited financial ability to purchase a suitably trained team of horses and the necessary feed and equipment.	2
I have some time available to care for horses daily. I have limited pasture land and shelter available for draft horses. I have some ability to purchase horses and equipment needed for my operation.	3
I have pasture land and buildings available, but need to make modifications for keeping draft horses. I have time to take care of horses. I can produce enough feed/hay for my draft horses or have the ability to purchase what is needed. I have the ability to purchase a suitably trained team of horses.	4
I have ample time to care for horses on a daily basis. I have adequate pasture/shelter available for draft horses and either the ability to produce feed/hay or financial ability to purchase it. I have the ability to purchase suitable horses or can purchase horses and either train them myself (or have access to an experienced trainer).	5
I have ample time to care for horses on a daily basis. I currently have adequate pasture that is properly fenced and barns suitable for draft horses. I already have draft horses suitable for use in my enterprise or will be suitable with a small amount of training.	6

Available Resources (Non-Human Capital Considerations)

It is important to consider the resources you have available to dedicate to the enterprise, including time, money, land, and other inputs. Draft horses require a time commitment to feed and care for them daily and a financial commitment to purchase the horses and feed and to provide veterinary care. You must also have sufficient space in terms of pasture and barns (Damerow and Rice, 2008).

Table 6, Available Resources, will help you assess the level of resources available to devote to horse-drawn farming. Give yourself a score of one through six based on which description best fits you/your operation.

How to Use the Purdue Horse-Drawn Farming Readiness Assessment Tool

The PHDFRA tool is an Excel spreadsheet available at (<https://ag.purdue.edu/agecon/Pages/Horse-Powered-Farming.aspx>) . The "Introduction" tab contains some basic information about the tool. Enter your scores in the sheet labeled "Horse Drawn Farming

Scorecard." The "Your Results" tab displays graphs representing the scores you inputted and gives written recommendations. The "Recommendations for You" tab combines all of your scores into one figure and gives additional recommendations. If your scores place you in a green area, horse-drawn farming may be a good fit for your operation. If you are in a yellow area, horse-drawn farming may be a good fit, but you should pay close attention to those areas that may benefit from further evaluation or learning. If your scores place you in an orange area, horse-drawn farming is probably not a good fit for your operation, and you should seek additional help in the areas identified. If your scores place you in a red area, horse-drawn farming may not be a good fit for you, and you should seek more information in the areas identified. Written recommendations and suggestions are provided to assist you in identifying areas where you may benefit from additional consideration or learning. Two examples help you see how the PHDFRA Tool can be used.

Example 1: Beginning Farmers with Light Horse Experience Motivated by Lifestyle Who Want to Produce Hay

A couple is interested in beginning farming with draft horses because they value a rural lifestyle and want to begin a farming operation that they will participate in full time once they retire. The couple has 20 acres of land, established pastures, a barn, and a small riding arena, which they used for riding and showing horses when their children were younger. About half of the land is hay meadow, which a neighbor cuts for them in exchange for half of the hay crop. The couple has experience feeding and caring for riding horses and has learned to do some basic horse care tasks such as giving vaccinations, deworming, and basic first aid. Both individuals in the household have an off-farm income source that will continue until they retire. Because they both currently work, they have limited time each day for caring for or working with the horses. Neither of the members of the couple has experience working with, caring for, or driving draft horses.

Decision: After going through the Purdue Horse Drawn Farming Readiness Assessment Tool, this couple decided not to purchase a team of draft horses and begin farming with them.

Why: The couple assigned themselves the following scores.

- Horse Care Knowledge-5: The couple has extensive knowledge of caring for horses on a daily basis.
- Experience Working with Horses-3: Although they have extensive experience working with and riding horses, they have never harnessed, hitched, or driven a team of horses.
- Alignment with Lifestyle and Values-2: The couple enjoys having horses around and occasionally going for a trail ride.
- Alignment with Operational Style-1: Because the couple only currently plans to cut hay, the horses would only be needed to work for a short period of the year and would be idle the rest of the year.
- Knowledge of Business Operations-2: The couple has helped the neighbor cut and bale hay before, but has not made decisions such as fertilizer application or when to cut the hay.

- Available Resources-4: The couple already has fenced pastureland and barn space that could be suitable for draft horses with some modifications. They have financial ability to purchase and care for the horses, but not a great deal of time to do so on a daily basis.
- The PHDFRA tool recommends that horse drawn farming may not be a good fit for the couple. The couple have little knowledge of hay production, and horse-drawn farming does not seem to fit with their planned farming operation or preferred lifestyle.

Example 2: Transitioning a Segment of an Existing Market Garden Operation to Horse Power

A family grows a garden and sells vegetables in a few local farmers markets and from a small roadside stand on weekends. They have done so for several years, at first with a small backyard garden for themselves and then expanding their garden to include about 5 acres of their 15 total owned acres. There is potential for a couple more acres of cultivated land within the existing owned acreage. However, the remainder of the land is not suitable for gardening. It is currently in pasture and the neighbor sometimes uses it to pasture his cattle. To cultivate their vegetables, they have walk-behind implements and occasionally borrow a neighbor's tractor and implements. They would like to begin transitioning part or all of their acreage from being cultivated with a tractor to being farmed with horses. They have increasingly enjoyed being more self-sufficient by growing some of their own food and the rural lifestyle. They also feel that farming with horses would add to their enjoyment as well as be a selling feature to their customers who purchase produce. Although they have never owned horses themselves, they have volunteered at a local horse rescue where they frequently helped with daily horse care such as feeding, grooming and turnout as well as helped with veterinary and farrier appointments. They have also attended numerous horse fairs and clinics including two weekend clinics specifically on draft horses where they gained hands-on experience handling, harnessing, and driving draft horses. In addition, they have visited a couple of farms that use draft horses in market gardens, so they have an idea of their kind of horses and equipment they want to purchase.

Decision: After going through the HDFRA tool, this family chose to pursue horse-drawn farming.

Why: The couple assigned themselves the following scores.

- Horse Care Knowledge - 3: The couple has learned about basic horse care from volunteering at a horse rescue and attending many clinics.
- Experience Working with Horses - 3: Although they have not ridden horses, they have handled many different horses volunteering at the horse rescue and have some experience harnessing and driving horses.
- Alignment with Lifestyle and Values -5: The couple is increasingly interested in the idea of being more self-sufficient and enjoys the idea of working with and caring for horses, especially a horse or horses of their own.

Is Horse-Drawn Farming for You? • EC-806-W

- Alignment with Operational Style-3: Given their current farming operation, the couple would not need the horses year-round.
- Knowledge of Business Operations -5: The couple's market garden business is established and successful.
- Available Resources-4: The couple already has fenced pastureland and plan on erecting a run in shed suitable for draft horses. They have enough money saved to purchase a suitably trained horse and equipment. They know that they will have to purchase some hay, and are financially able to do so.

The PHDFRA tool recommends that horse drawn farming may be a good fit for the couple. They realize that there will be a learning curve with horse-drawn farming, but they still have their old equipment and access to a tractor if needed. They plan on purchasing a well-trained horse, so they feel they can successfully begin using horses in their operation.

Conclusion

Horse-drawn farming has advantages and disadvantages, and because the decision to adopt horse drawn farming involves long run commitments, you should make it carefully. Using the PHDRFA Tool you can evaluate and weigh the advantages and disadvantages for you and your business. If you find your outcomes in the red or green area of the tool, then you will want to look for other opportunities (red outcome) or seriously consider horse-drawn agriculture (green outcome). If you fall in the yellow or orange areas it is important for you to continue to ask questions and proceed cautiously if you do decide to proceed.

References

- Damerow, G. & Rice, A. (2008). Draft Horses and Mules. North Adams, MA: Storey Publishing.
- Leslie, S. (2013). The New Horse-Powered Farm. White River Junction, Vermont: Chelsea Green Publishing.
- Miller, L.R. (1981). Work Horse Handbook. Reedsport, Oregon: Mill Press Inc.
- Miller, L.R. (2004). Work Horse Handbook. Second Edition. Sisters, Oregon: Small Farmer's Journal Inc.

About the Authors

Elizabeth Byrd is Graduate Research Assistant and Ph.D. student, Nicolle Olynk is Associate Professor, and Joan Fulton Professor and Associate Department Head in the Department of Agricultural Economics, Purdue University.



This material is based upon work that is supported by the National Institute of Food and Agriculture, U.S. Department of Agriculture, under award number 2013-38640-20901 through the North Central Region SARE program under sub award number H003679434. USDA is an equal opportunity employer and service provider. Any opinions, findings, conclusions, or recommendations expressed in this publication are those of the author(s) and do not necessarily reflect the view of the U.S. Department of Agriculture. USDA is an equal opportunity provider and employer.

Feb. 2016

It is the policy of the Purdue University Cooperative Extension Service that all persons have equal opportunity and access to its educational programs, services, activities, and facilities without regard to race, religion, color, sex, age, national origin or ancestry, marital status, parental status, sexual orientation, disability or status as a veteran.

Purdue University is an Affirmative Action institution. This material may be available in alternative formats.



1-888-EXT-INFO • www.extension.purdue.edu

Order or download materials from
Purdue Extension • The Education Store
www.edustore.purdue.edu
