

Selecting a Tractor for Your New Farm

By Rich Taber, Grazing/Ag Economic Development Specialist

You bought the farm with excitement and now are anticipating new activities in your farming ventures. There are a tremendous number of activities and work that needs to be done on a small farm, regardless of the size. For the beginning or new farmer, one inevitable hurdle to overcome is how will you power your farm activities? You can farm with a number of power sources, such as walk behind small scale 2 wheel type machines, with tractors, or you can custom hire work that needs to be done. If you decide that having a tractor fits into your operation,



read on. This article will be the first in a series of how to select, acquire, operate and maintain smaller scale farm machinery. Oftentimes people ask, “What tractor should I buy?”, and “How much does a tractor cost?” As with all things agricultural, the answer is, “It depends.” One of the first things that I ask a new agriculturalist is, “What do you want and need to do with a tractor, and how much can you afford to spend?” Each activity mentioned in this article will require certain machines in addition to a tractor and will be addressed in

later articles.

The following is a list of activities which might be occurring on a farm or homestead at any given time of the year and requiring specific tractors and machines:

- **Brush hogging** meadows and pastures for grazing management and to prevent the fields from growing back into forest. This is one of the most critical jobs on a small farm, as nature can be relentless in working to restore forests. If fields are let to grow for more than about three years, small trees and brush will begin to take over making it extremely difficult and expensive to correct.
- **Haymaking** small square bales, large round bales of dry hay, or baleage. The process can require mowing, tedding, raking, baling, wrapping high moisture bales, and hauling and unloading hay.
- **Tillage activities** such as plowing, disking, harrowing, planting, and of course, picking stones.
- **Planting crops** such as forages, row crops such as corn and cereal grains, fruits and vegetables, and possibly food plots for wildlife.
- **Pulling** a variety of 2 and 4 wheel wagons around on the farm for diverse activities, such as hauling crops and hay, firewood, and giving hayrides to people.
- **Harvesting** crops other than dry hay, such as chopping high moisture hay for haylage or greenchop, and vegetables.
- **Front end loader work** for snow removal, manure handling, feeding animals, moving materials around the farm, and loading and hauling hay and other crops.
- **Working in the woods** skidding logs, hauling firewood, and hauling maple sap to the sugar house.

I am going to make some assumptions before I begin to suggest which tractor might be a good choice for you. **Assumption one:** right now, you are going to try to do as many operations as possible on your farm with one tractor, while you’re getting started.



A four wheel drive 75 horsepower tractor with four wheel drive; a very useful machine for the smaller farmer

As you build equity and experience, you may someday need another tractor or two, because as you will find out, not all tractors are suited to all purposes, but for now, we will focus on getting you this first tractor to do as many things as possible. **Assumption two:** you only have a given amount of money to spend, and that you might be looking for a good used tractor. New tractors can be prohibitively expensive; if you can afford one, good for you. **Assumption three:** you may be looking for a smaller to medium size tractor to get everything done; leaving the big tractors for those who truly need them.

So just what should we be looking for in a good used tractor? There are a myriad of features that we need to consider. To accomplish what we need to do, will our tractor have the following?

- Three point hitch
- Live three point hitch
- Hydraulics
- Single or dual sets of hydraulic hose attachments
- Live hydraulics
- Power take off*
- Live power take off*
- 2 wheel or 4 wheel drive
- Front end loader
- Will it be an open tractor, or have a roll over protective structure (ROPS), or a ROPS and canopy, a four post canopy, or a full cab
- Gasoline or diesel engine
- Front end and rear wheel weights
- A flat platform in front of the seat, (referred to as “flat decks”) or will the transmission be sitting between your legs? (this becomes important when you spend several hours on your tractor).
- Approved OSHA safety features
- Available dealers, mechanics, and parts and repair services

**Live hydraulics and pto (power take off) are important; older tractors made in the forties and fifties frequently did not have “live” features, which meant if you pushed in the tractor’s clutch, the pto or hydraulics stopped working. This can be quite bothersome when you are in thick crops and have to use the clutch, and have to start up again from a dead stop.*

Now that we have all of these features to think about, I will describe my version of a tractor that if I could only have one tractor, this is the type that I would look for, for my first tractor on a smaller farm.

- A tractor made in the latter part of the twentieth century, at least from about 1970 onward. Older tractors made after World War II still abound, but lack many of the needed operational and safety features expected today. Narrow front ends from that era were very dangerous and lacked many of the safety features that we expect nowadays. These type tractors can be very dangerous!
- A diesel engine; not many farm tractors come with gasoline engines anymore. Older tractors (60’s-70’s) gasoline engines can be quite aggravating to keep running smoothly on a year round basis, especially the ones made before the era of electronic ignition.
- It is mandatory to have three point hitch. So much farm equipment exists which requires this feature making it an absolute requirement. Oftentimes you can purchase aftermarket three point hitch assemblies for older tractors but they tend to be expensive, awkward to use, and not very efficient.
- 2 sets of live hydraulic outlets, (this is required to run many farm machines today). If your tractor has only one set of hydraulic hoses, a second set can be added if and when your machinery needs dictate.
- A front end loader (often times this will tie up one set of hydrolics)
- Preferably under 5,000 hours of run time. Repairs and overhauls can be extremely expensive!
- At least a Roll Over Protective Structure (ROPS) should be mandatory, with a seat belt. A canopy is a nice addition on top of the ROPS. The ROPS is for roll over protection and can save lives, and the canopy can prevent you from baking in the sun during those hot summer days, and will keep off some of the rain.
- Four wheel drive; our long snowy winters and muddy rainy summer months, especially if the tractor has a front end loader. There are two basic types of tractor operators, those who have been stuck, and those who are going to get stuck.
- Live power take off. Some older obsolete tractors have “non-live” pto which makes controlling the actions of your equipment awkward and difficult.
- About 45 to 75 horsepower should fit most needs

How much will this tractor cost? Depending on the age, condition, and features present, you can expect to pay at least \$5,000 up to \$20,000 for a good used tractor such as I have described in this article. In general, the more features, the more costly the machine will be.

Where to Find a Tractor

I will begin my suggestions for buying a tractor with an oft quoted phrase “caveat emptor”, or “let the buyer beware”. Purchasing a used tractor can be fraught with many of the same pitfalls as buying a used car. The worst case scenario would be for you to have to borrow money for your purchase, and then end up with a tractor that is little more than scrap iron leaving you with a lot of expensive repairs.



Two tractors between 65 and 75 horsepower that are ideal for a small farm

Additionally, if you have some mechanical skills, and like to “tinker” on machines, you might be in a better position to buy an older machine. The old saying “you get what you pay for” generally applies to used tractors. However, there are some notable differences in the sources of tractors that are for sale.

Another factor to consider is the brand of the tractor. I prefer to own tractors that have locally available parts and services available, as compared to obsolete lines that are periodically imported into the United States and then vanish after a number of years. Which brand do I prefer? I prefer a name brand that runs and operates, and that local

mechanics have a base of experience of working with. If you don’t have much tractor or mechanical experience, it might be worth paying a mechanic or person with experience for their time by having them evaluate a machine for you prior to you purchasing it.

Regardless of the place that you purchase your tractor, one compelling question to ask yourself is how much recourse do you have in resolving disputes with the seller after you’ve taken your tractor home?

Several places to locate used tractors:

1. Tractor and farm machinery dealerships
2. Farm dispersal auctions
3. Consignment auctions
4. Classified ads
5. Word of mouth
6. Internet sites

Each of these methods has certain advantages and disadvantages. We will begin with a tractor or farm machinery dealership.

- **Dealerships** can sometimes be the most expensive place to purchase a used tractor. Typically the dealership has taken a used tractor in on trade for a new machine. Did they improve this tractor in any way? Did they overhaul the engine, or transmission, or put new tires on it? Or did they just take the machine in and slap a big markup on it? With a dealership, sometimes you can get a short warranty for a used tractor. If you don’t have good machinery repair skills, a good dealership is worth their weight in gold; they may be more expensive initially, but if they offer good service, and come out to your farm late on a Saturday afternoon to help you get up and running again, it may well be worth it. This is the best kind of dealer to deal with. Another type of dealer is referred to as “tractor jockeys”, who simply buy used tractors in from all over, typically from one type of auction or another, for resale, and typically with few or no warranties. Oftentimes little or no information is available on the history of the machine in this scenario. Again, beware!



Two good four wheel drive tractors with loaders, purchased used, but took a lot of money to get up to operating condition

- The **consignment auction** is probably the worst place that you can possibly purchase a tractor. A consignment auction is when all kinds of machinery are taken to a central location and then auctioned off to the highest bidder. Typically machines with issues are “dumped” at consignment auctions, and unless you personally know the reason the tractor was consigned, or the history of the machine, you can easily end up buying a “pig in a poke”. Consignment auctions are “what you see is what you get”. If you buy it, and take the tractor home and discover issues with it there is no recourse whatsoever.
- A **farm dispersal** occurs when a given farm is going out of business, and they are selling all of their farm possessions. You know the tractors being offered are for sale simply for the reason that the farmer is going out of business. These types of auctions can be a good place to purchase a machine, but again, there are no warranties. You buy it, you own it.
- **Classified ads** in local or farm papers, or tractors with for sale signs on them on the side of the road can sometimes be a good way to find a decent tractor. If I see such a tractor for sale, I want to know if the owner has owned this machine, or has he or she simply purchased it from somewhere else with the idea of “flipping it” to generate a profit? How long have they owned it, and what have they done to it in the line of repairs? Do they know the history of the machine?
- **Word of mouth** or personally knowing the person from which you purchase a tractor, is one of the better ways of locating a tractor. The best tractors on my home farm have been purchased from friends and neighbors, and I know the sellers personally and the history of the machines.
- **Internet sites** such as Craig’s List and Ebay can be good sources in finding available tractors. Two other good sites are www.TractorHouse.com and www.Fastline.com. Both of these sites have printed editions of tractors for sale.



Larger used tractors are generally cheaper per horsepower than smaller ones

Finding or buying a good used tractor can be fraught with frustrations and pitfalls. If you do find a good one, they end up being machines that can give you years of good service and help you get your work accomplished on your farm. If you get a bad one, they can be expensive nightmares which can cut into your profits and quality of life. The next installment in this series will deal with some of the maintenance activities you need to do to keep your tractor up and running.



Four tractors all purchased from known sellers; probably the best way to buy a used tractor

Daily Maintenance for Your Tractor



This is the third installment in our series on locating, selecting, and maintaining tractors for the small farm. In the first installment, we discussed some of the features that you would be looking for on a good used tractor for your small farm; in the second installment we described places to find and purchase a tractor. In this article we will share some of the maintenance activities that are needed to keep your tractor running efficiently on a daily basis, and to avoid ending up with costly repairs.

One of the most important items that you need to first acquire for your tractor is the owner's, or operator's

manual. Oftentimes when you purchase a used tractor you do not get an owner's manual with it; you can find them easily enough from either an equipment dealer or online. It is critical that you have one for your machine so that you know how to operate your particular tractor, when to schedule routine maintenance, and to find the different capacities for all of the fluids which must be maintained in the tractor.

In addition to the owner's manual, you will need a simple set of common mechanics tools to accomplish many of the needed maintenance and simple repairs that normally occur with a tractor, along with a good quality grease gun.

The following list will highlight some of the routine items which must be frequently checked and maintained (and according to the operator's manual) on a tractor to keep it running smoothly:

- Engine oil levels, and oil filters
- Transmission oil levels, hydraulic oil levels, and filters (on some tractors the transmissions and hydraulic systems are combined, on others, they may require different types of lubricants)
- Battery fluid levels and battery terminal condition
- Fuel filters (especially critical on diesel engines)
- Correct grade of fuel for the season
- Radiator coolant strengths and levels (should be protected to minus thirty degrees F)
- Tire conditions and correct tire pressures
- All grease fittings with the correct grade of lubricant
- Power steering fluid levels
- Front wheel bearing grease levels
- Air conditioning coolant levels if equipped with cab and A/C
- Air filter condition
- Electrical and fuel gauges
- Belt conditions for generators or alternators, tightened to the correct specifications
- Slow Moving Vehicle (SMV) emblems
- Tractor brakes, and emergency and parking brakes working correctly
- Personal protective equipment (Roll Over Protective Structures) and seat belts
- Lights, flashers, and turn signals all operational
- Correct hardware for hitching implements such as draw pins and three point hitch hardware
- Correctly mounted tire chains if conditions warrant
- Any other items not mentioned here but specifically mentioned in your operator's manual

By checking all of these items at specified intervals will ensure that your tractor will operate safely, efficiently, and add measurably to its useful life.