

Vineyard Equipment and Supplies

This is an area of vineyard management that is all over the map. A small vineyard can be supported with the basic tools you might find in the garage but a large, sophisticated vineyard will have specialized equipment all the way up to the multi-purpose over the row tractor. For most practical purposes in Nebraska, a typical set tools, supplies and equipment will get the jobs done.

You need quality tools and equipment if your goal is to grow high quality grapes. That means getting the right tool for the job and, while you don't have to buy the Cadillac model it is usually worthwhile to buy a reputable name brand. Remember that you usually get what you pay for. The tools help you to put your knowledge into action. If you study the best vineyards you will usually find that they have excellent quality tools and equipment and know how to use and care for them.

Before you embark on spending a lot of money it is useful to evaluate exactly what kind of vineyard you are developing and what kind of tools and equipment will be needed to service it. If it's a hobby vineyard to be farmed in your spare time it won't need the same equipment and materials as a commercial vineyard.

No class or grape grower guide will fully introduce you to the wide range of needs and options that you will face. The best way to know what tools, equipment and supplies you will need is to visit or work in a fully-equipped commercial wine vineyard. Always keep in mind that there is a right tool for every job and a right way to use it. It is important that you learn the safe and proper application for any tool or piece of equipment.

Ideally, equipment is selected to suit the vineyard, not the other way around. For example, row width should determine the dimensions of important pieces like tractors, mowers and other implements. Designing a vineyard around existing implements will almost always result in a compromise of quality and productivity. Topography will also affect equipment choice, such as the steepness of grades or degree of side slope. You will need a tractor powerful enough to pull a sprayer up that slope or wide enough not to slip on a side slope.

For example, do you know what a power-take-off is on a tractor? It is simply one of the most dangerous devices on a farm, next to the tractor it is a part of. A pto shaft must be used correctly and carefully at all times. Lots of equipment have moving parts, sharp edges, dangerous fluids, pressurized parts and such and they must be treated with great respect, if not a bit of fear. The vineyard has some specialized tools that you might not find in the garage. There should be no compromise on safety. Every possible safety precaution must be used so no one will get hurt. This means using the right tool for the job, operating it properly and reading and understanding the directions completely before commencing use. If there is any doubt, an experienced user or vendor should be consulted.

Who you purchase your equipment and supplies from makes a big difference. They should be have a good reputation in the local farming community or within the wine-grape growing industry. The tractor, next to your land, may be your biggest expenditure. It will quickly

become the bread and butter piece of equipment that so many vineyard operations depends on from spraying and mowing to hedging and harvesting. Murphy's Law says your tractor will go down just when you need it most, like during the critical bloom spray application. You need to know how fast that tractor can be operational again. Does your dealer have parts and service, will they pick it up? You should buy a tractor from a local dealer with parts and service and a brand that has a good reliability rating.

Your choice will often be limited by the selection carried by a local vendor. Even within those choices you should consult other growers about their experiences with various brands. As with everything we buy, price and quality must be balanced. Other large implements like fungicide and herbicide sprayers, mowers, cultivators, grape hoes, hedgers, post pounders can be purchased, borrowed or rented.

A vineyard tractor will likely be your most expensive purchase after the land. Lots of people feel that once they are on a tractor they become a farmer. Tractors should be selected based on a variety of safety and usage criteria. Since a lot of spraying is necessary in Nebraska's climate, it is recommended that an air conditioned, positive pressure cab be considered an integral part of the tractor. It needs to have a horsepower rating to handle the steepest hills and a power takeoff rating to accommodate the largest implement. Those implements are often powered by the hydraulic system so there must be enough fluid rating and connectors to operate attachments. It should be four-wheel drive if the vineyard is on slopes. And every tractor must have a ROPS roll over protection system. Crawler type tractors are becoming more popular and offer the advantages of greater traction, reduced soil compaction and many now come with steering wheels instead of levers for turning. A tractor should come from a reliable dealer who can service it in and out of the field and always has replacement parts on hand. Talk with other vineyard owners about their experience with tractors.

A short list of smaller implements your vineyard may require include a mower (rotary or drum type), fungicide sprayer (airblast or tunnel type), herbicide sprayer, cultivators (in row and row middle), vine trimmer (one side or over the row type), and leaf remover. Other indispensable pieces of equipment include a farm pick up truck, all-terrain vehicle such as a gator or 4-wheeler.

Tools, equipment and supplies require infrastructure to protect and maintain them. It is an awful sight to see equipment lying around outside through the winter and subject to the elements and rust. A shop-office-storage building is almost a necessity. It can be fancy or simple but it needs to have a leak-proof roof. Everything should be stored inside when not in use for long periods of time such as winter. A shop with open floor space for maintenance work is very useful. All tools and supplies should be organized and stored properly to make finding what you need fast and easy and keeping everything in proper working order. You will soon discover the basic items you will need to maintain your tools and equipment. Infrastructure should also include a spray material containment area where pesticide sprayers can be safely rinsed and cleaned and runoff contained. It can also be a place where pesticides are securely stored and sprayers can be loaded and mixed. All of the proper PPE gear should be close at hand, as well as safety manuals and required records.

Certain supplies and tools are critical to every vineyard no matter how large or small. Small basic tools like hammers, wrenches, pliers, screwdrivers, etc are always needed. More specialized tools, especially for trellis installation and maintenance, such as wire splicers, come-alongs, fence hammers, post pounders, etc. are necessary to get the job done properly.

Pruning and harvest also require special tools, from shears, loppers and saws to picking shears, buckets. It may also include grape bins of various sizes and materials, bin trailers and delivery vehicles such as flatbed trucks or fifth-wheel trailers.

Safety needs to be a part of every job in the vineyard. Proper clothing including footwear, eye and ear protection, gloves, respirators, etc., need to be used in the proper context. Most importantly, correct training and use of all tools and equipment is vital to avoid injury. Safety meetings should be a regular weekly or monthly routine with employees with educational tips and suggestions to improve workplace safety. Adequate first aid and fire suppression equipment should always be nearby.

Cost, of course, affects just about everything in the vineyard. Most growers will be tempted to skimp but when it comes to equipment, tools and supplies the phrase Caveat Emptor is well applied. So is “you get what you pay for.” You might save a little bit of money on the cheaper choice but it probably won’t last as long and will likely break just when you need it most. When you do your business plan and budget, include the best you can afford and if the budget runs over, cut down the size of the vineyard to accommodate better quality tools to grow high quality wine grapes.

Mark L. Chien
Viticulture Educator
Penn State Cooperative Extension