

Making Your Own Hay

Learn about making your own hay. If you have access to a patch of hay land, the equipment and you'd like to produce the best possible forage for you pets and livestock, do-it-yourself haymaking can still spell dollars and sense.

By Sue Weaver

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Here are some reasons for making your own hay.

According to the University of Missouri, most forages lose 20 percent of their total digestible nutrients and 40 percent protein just 10 days after their optimal harvest stages.

In this article:

Equipment Tractor Rating System Evaluating Used Tractors Haymaking Alternatives Vintage Tractor and Machinery Books Small-Scale Haymaking Online Used & Antique Equipment Evaluating Used Implements Types of Hay to Make

More Articles on Hay Hay Feeding Tips Hay Shortage Coping Tips One reason stock keepers make they own hay is because later cuttings spell higher yields, many commercial haymakers choose volume over quality.

Others get involve in making their own hay because the land is waiting—instead of mowing or bush hogging fallow land to push back encroaching woodland, they fertilize and seed it to hay.

And some folks make their own hay just savor the satisfaction of working the land with equipment. Anyone can put up enough hay by hand for a hutch of bunnies or a pet lamb.

A mechanically minded hobby farmer can easily bale plenty for a beef steer or a pair of horses using inexpensive, vintage haying machinery.

Even investing in secondhand modern equipment makes sense if you want control of how and when your own hay is made.

How To

These pictures show a few of the numerous things to consider in the equipment you use or purchase to make your own hay.

An old-style haybine should be checked for bent, worn or missing crimper rollers. Hydraulic hoses should be inspected and tested to make certain they stay up. Carefully check pickup bearings and tires--front and rear--for signs of excessive wear. Check that the PTO drive shaft is completely encased in guards. If not, you'll need to install them immediately. A more modern balers should have its belts, bearings and chains checked for workability.

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Think you might like to try? Keeping in mind that anything beyond a bare-bones introduction to machinery selection and haymaking is beyond the scope of a magazine article, here are some things to consider.

Equipment

Unless you put up your own hay strictly by hand, you'll need a fairly hefty tractor, a mower, rake and baler. In some parts of the country, folks using old-style mowers add a tedder or crimper to the mix.

Your best source of advice is a friendly neighbor who knows farm equipment and can help you get started the right way. Most farmers are happy to show new folks the ropes.

Unless you already have one of today's breed of brawny small farm tractors in your stable, you'll want to consider buying one.

Yesterday's compact tractors weren't designed for heavy-duty applications, so if new isn't an option, your older tractor will need to be a big powerhouse for baling. But "old" is relative.

We've put up hay with a 1947 John Deere B and a 1970 Case IH diesel—both doing a fine job. Since restoring vintage tractors is a popular country hobby and mechanical assistance is readily available, age isn't necessarily a liability when you buy.

While Webster's defines "antique" as something made at least 100 years ago, many farmers generally define antique tractors as those manufactured before 1975.

These older models are readily available, relatively inexpensive, and ideal for small haying operations.

Drawbacks: some can be quirky and require a modicum of mechanical savvy to keep running well. And unless you or a previous owner adds them, they aren't equipped with today's important safety features.

Next you'll need a mower. The simplest and the best suited to extremely antique horsepower is your basic sickle mower.

Its drop-down cutting bar shears hay off and drops it as is, unlike a more modern haybine, which cuts but also crimps and windrows in a single pass, a better bet if your tractor is big enough to power one. You'll also need a rake to turn the hay so its underside dries and finally, a baler.

Assess your needs. Do you want to put up small square bales or big round ones?

Small square bales require more handling than big but hog less space under cover. Picky eaters like sheep and goats, that sometimes trample hay and then ignore it, are best fed square bales because you can dole it out a few flakes at a time.

Big bales must be lugged from the hay meadow to storage and later hauled to your livestock to be fed, and only the brawniest older tractors with the best hydraulics can handle a hay-moving spike.

However, even mammoth bales can be dragged singly behind a tractor--but you'll lose hay and quality if you do it.

Haymaking Alternatives Make Sense Too

Not every small farmer wants to make hay, yet we all want control over the quality and price of the forage our livestock consume. "Even if a hobby farmer had the time and could find inexpensive equipment, he might be lucky to just break even," says Highland Cattle breeders Nick and Anneke Self of Bent Creek Farm in Greeneville, Tenn.

"You have to consider the cost of the equipment, maintaining it, your time and the weather," says Anneke. "Nick works full-time off the farm and isn't always able to take off work during peak haying season, so we've found it's more economical to buy the hay and use our pastures for grazing. Another possibility is to form a hay co-op; a small group of hobby farmers in our county are discussing forming one. This would increase our buying power because of the volume of hay we could buy together, and as a group we may have more control over the quality of hay being produced by our supplier."

For an hourly or per-bale fee, or for a percentage of the harvest, hobby farmers can usually find a custom baler to handle all or part of the process. "This works well for us but only since finding a responsible baler," says Ann Helmuth of Rochester, Minn. "The first man we hired did his own hay first. Ours went well past prime and our fussy goats wasted a lot of it. The next year he cut all of his clients' hay at once and before he got to baling ours it was rained on—twice! It works, but be careful who you hire."

TOPSmaller round bales can sometimes be manhandled into a pickup bed by a pair of strapping humans, but it's definitely

a job. Small square bales are generally a hobby farmer's better choice.

Less savvy buyers should purchase used haying equipment from a machinery dealer, or a friend or family member who knows the piece's history and will likely stand behind it.

If you're the adventurous type, you can also answer ads and shop at farm auctions.

TOP

Tractor Rating System

In 1919 the University of Nebraska developed a comprehensive rating system they used to evaluate practically every make and model of tractor built between 1920 and 1984.

The Nebraska Tractor Tests established a tractor's horsepower by measuring the usable power at its drawbar and power take off (PTO).

Today's compact tractor horsepower is determined by measuring crankshaft power, so vintage and modern horsepower ratings aren't the same.

An antique tractor in the 25-horsepower range can power a small, PTO-driven square baler but a bigger oldie is a better investment in muscle and versatility.

Choose a make popular in your locale. You'll find a better selection of tractors to choose from and more secondhand parts at machinery salvage lots.

Vintage Tractor and Machinery Books 2003 Used Tractor Price Guide: 1939-2000

Includes "approximate retail prices when new, a high and low range of estimated average used values, engine size, transmission speeds, shipping weight and PTO horsepower, plus a special serial number section that lets you determine the precise year a tractor was built."

I&T Shop Manuals, Primedia Books, 2002 A Field Guide to Vintage Tractors by Robert N. Pripps and Andrew Morland; Voyageur Press, 1999. How to Restore Your Farm Tractor by Robert N. Pripps; Motorbooks International, 1992. Antique Tractor Bible by Spencer William Yost; Motorbooks International, 1998. How to Rebuild and Restore Farm Tractor Engines by Spencer William Yost; Motorbooks International, 2000. Old Tractors Never Die: Roger's Guide to the Care & Feeding of Ageless Iron by Roger L. Welsch; Voyageur Press, 2001. How to Restore Classic Farm Tractors: The Ultimate Do-it-Yourself Guide to Rebuilding and Restoring Tractors by Tharran E. Gaines; Voyageur Press, 2002.

TOP

If you're mechanical, you can pick up a manual and tools and make most repairs yourself; vintage tractors are far less complex than newer models and well within the ken of most automotive mechanics. If you aren't mechanical, speak to a mechanic before you buy.

Parts are rarely a problem. New parts can be ordered from manufacturers through automotive parts dealers or from farm suppliers.

Used parts? Tractor graveyards usually dot the rural landscape. Unless you choose a truly orphan make, you'll be readily supplied.

Gas or diesel? Diesel tractors are generally more fuel efficient but they reek of fuel and are notoriously picky about firing when temperatures plunge below freezing.

TOP

Evaluating Used Tractors

Picture this. You're tooling along a country road when you spot a likely prospect parked by the road with a "for sale" sign propped against its front tire. Before even considering plunking down money for the rig, you should have a mechanic take a look--but you can pre-evaluate it nicely by yourself.

Small-Scale Haymaking:
Our Forefathers' Way
(With a Few Modern Twists)

If your winter hay needs aren't great and you have an unused corner of an outbuilding for storage, consider putting up premium hay for rabbits, a goat or a miniature horse the old-fashioned way: by hand.

The trick is to make good hay so every mouthful packs a punch. Touch base with your county extension agent or do your homework to determine which forage works best for your critters, then prepare, fertilize and plant a small hay plot (¼ to one acre) accordingly. Just like the big hay makers, be set to harvest at optimal bloom during a window of warm, sunny days.

For this, you'll need a mower. You could choose an old-time scythe or sickle if you can find someone to teach you how to use it, but the 21st century counterparts—heavy-duty string trimmers and brush cutters (see "Tools of the Trade," Summer 2002)—will save your back and do the work in a fraction of the time.

Your hay should be turned at least twice. Our forefathers used wooden peg-toothed haying rakes; if you're handy with tools you could make one, but a wide-toothed garden rake will do. Check frequently and when mown and turned hay is fully dry, but still green and sweet smelling, hook a cart to your lawn tractor, grab your pitchfork and bring in the harvest.

Store your hay in a well-ventilated area, out of direct sunlight. Don't fork it directly on the floor, place it atop wooden pallets to prevent ground contact spoilage. Pack it down and pile it high. It's best to leave new hay uncovered for a few weeks until it finishes curing, but then top it with tarps to preserve cleanliness and quality.

TOPAsk for particulars. Is the owner's manual available? If it is, check to see where the tractor's serial number is located, find it and jot it down.

To the uninitiated eye, various tractor models look much alike; you'll want to reference the serial number later to be certain you're buying what's represented.

No manual? Search for numbers punched or pressed on a smooth, readily accessible surface, sometimes on a mounted plate but never molded into cast-iron parts.

Why is the tractor for sale? Will the seller detail its history and possible foibles?

If it sells with a front-end loader, a plus for manure-scooping livestock keepers, know that these devices are notoriously hard on a transmission, clutch, front axle and tires. Examine them extra carefully.

If it lacks fenders, consider shopping elsewhere. Fenders keep the operator from being thrown on a wheel if tossed out of the seat. They aren't optional equipment.

About that seat ... A comfy back feels mighty nice after half a dozen hours in the saddle. And if you hit a rock or woodchuck hole, it's easier to be flung from a hard, metal pan than a padded one with a back and arm rests.

Brandnew paint? Was it carefully applied to make the tractor look nicer or splashed on to cover something?

Online Used & Antique Tractors & Haying EquipmentAntique Tractor FAQ

www.atis.net/trctrfaq.html

Read this first! Farmall Cub site

<http://www.farmallcub.com>

Useful links and information; another must-read. Antique Tractors

www.antiquetractors.com

Information, forums, photos, ads, auctions and parts. Yesterday's Tractors Online Magazine

www.ytmag.com/

Pre-1975 manuals, parts, photos, ads and auctions. Antique Tractor Internet Service

www.atis.net/

Mailing lists, ads, parts, manuals and links. On-line Used Tractor Price Guide and much more

www.machinerylink.com

Haying On-line

Haying FAQ and field measurements

[www.sheepscreek.com/
rural/haying.html](http://www.sheepscreek.com/rural/haying.html)

"Making Hay" by Cherry Hill

[www.horsekeeping.com/
horse_care/making_hay.htm](http://www.horsekeeping.com/horse_care/making_hay.htm)

"Making and Storing Quality Hay"

[muextension.missouri.edu/xplor/
agguides/crops/g04575.htm](http://muextension.missouri.edu/xplor/agguides/crops/g04575.htm)

University of Missouri-Columbia

"Small Acreage Hay Production"

[www.colostate.edu/Depts/CoopExt/
Adams/sa/hay.htm](http://www.colostate.edu/Depts/CoopExt/Adams/sa/hay.htm)

Colorado State University

Hay and Forage Grower Online Magazine

hayandforage.com

TOPHave new safety warning decals been applied? If not and novice operators will be piloting the unit, factor in the cost of replacing them--they're essential.

Carefully check tires, front and rear. Weather checking is acceptable, cracks aren't. Rear tires should show at least an inch of usable tread. Keep in mind that replacement tires are costly, running \$400 each and up.

Is it equipped with a three-point hitch? Since most implements require one, older tractors may need to be retrofitted with a fairly pricey three-point hitch adapter.

There are several types of three-point hitches, so if you already own implements, be certain they're compatible. If the tractor sells with a complement of implements to fit it (and many vintage tractors do), compatibility is less of an issue.

The tractor's dangerous, clothes-grabbing, limb-ripping PTO shafts must be completely encased in guards--always. If they aren't, plan to install them immediately if you buy.

Search the engine block, manifold, transmission casing and other cast-iron parts for cracks, repaired or otherwise, as well as smooth spots indicating epoxy fixes. Repair welds should be neat and strong, not hastily splashed on.

Pools or splotches of oil under the tractor bespeak leaky seals or gaskets; don't buy until your mechanic takes a look. Excess grease or oil anywhere on the tractor should be suspect.

Check the oil. If it's milky it has water in it. If sludgy, suspect combustion problems.

Start the tractor. Some antique tractors have magneto ignitions, meaning you can fire up without a battery if you're willing to pull or crank to start it. This sounds good in theory but it's difficult in practice. You'll wisely opt for a tractor that starts easily. Unless you're mechanically savvy and don't mind rebuilding an engine from scratch, don't buy a tractor that the owner can't start.

You'll likely spot a hefty puff of blue smoke as it fires, especially if the tractor hasn't been started for a while, but if blue smoking continues, the engine is burning oil. White smoke can indicate water in the cylinders, a bad head gasket or a cracked block.

Beware! Black smoke marks bad timing or a poorly adjusted carburetor. No smoke is best of all.

Run the engine until it's warm. It should run smoothly while idling and at full throttle. Check the oil pressure and hydraulics to make certain they stay up, then go for a ride. Listen for engine pings and knocks. Gears should shift smoothly. Second gear is generally used for plowing so it's the gear most likely to be troublesome if things are wrong; consider transmission whine (in second gear) a red alert.

A vintage tractors' steering will likely be loose but more than one-sixth turn requires fixing.

If everything looks good, arrange for your mechanic to take a look. Ask if the seller guarantees the tractor's engine, transmission and hydraulics and if you buy, expect to get it in writing.

Shopping at a machinery dealership is much the same, but in addition, ask for the previous owner's name and phone number so you can discuss the unit with him.

Farm auctions are trickier. Unless you run your tests on a pre-sale preview day, you won't be able to drive the tractor. If a preview isn't an option, arrive early on auction day and be there when the machinery is demonstrated.

TOP

Evaluating Used Implements

Check used implements' chains and sprockets, belts and bearings for excessive wear. Make sure that there are no missing belts or chains.

Is the implement's frame square and its tires in fair condition? Sickle mower blades and guards and haybine crimper rollers are sometimes bent, worn or missing. Factor in the cost of replacements.

Hay rake and square baler pickup springs should be present and in decent condition. The bars that run a hay rake's spring fingers shouldn't be terribly worn. Frayed or broken adjustment cables need replacement.

Check the auger that feeds hay into a square baler to determine it isn't bent or broken and the baler's packing plunger slides freely. Check for missing, bent or worn cutter and twine knives.

Round baler roller belts and bearings take a lot of abuse. So do hydraulic hoses and cylinders on these larger machines. Basically, if an implement's parts are unduly worn or missing, suspect hard use and abuse and buy elsewhere.

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Types of Hay to Make

You've got your equipment and you're champing at the bit to make hay. What now? Because each type of hay is mown when a certain percentage of its flowers have opened--called its "stage of bloom"--you'll need to know exactly when to cut.

Alfalfa is best mown in bud (just before its blossoms open) to one-tenth bloom. Alfalfa yields two or three crops in the northern states and as many as six cuttings farther south, making it a favorite hay crop wherever it grows.

Clover is another popular legume hay, but it's harder to dry in the field, making it harder for a novice to put up well. If you grow it, cut clover when one-fifth to one-half of its flowers are in bloom. Alfalfa and clover are often planted with grasses to alter the finished hay's nutrient balance but also because legume hays play out with the passage of time. Stands of straight alfalfa or clover generally demand reseeding every four to six years. In a legume-grass mixture, as the legumes are depleted, grasses take over and continue producing bumper hay crops for many more years. Mow alfalfa-grass mixtures when the alfalfa component is ready for the sickle, but mow clover grasses when the primary grasses are ready to cut.

Primary grass hays include tall fescue, brome, timothy and orchard grass. Straight grass hays dry easier, so they rarely mold and are better bets for novice haymakers. Tall fescue and timothy are best mown in "boot" stage, when their undeveloped seed heads are fit to burst from the top of their stems. Cut brome and orchard grasses when their heads are emerging.

Even native grasses make "filler" hay to feed with more nutritious feedstuffs, for adding fiber to certain livestock diets.

Weather enters the equation too. You'll need several consecutive days of fine, fair weather to put up hay dry. Coordinating weather and bloom time is art and science that takes practice to perfect.

Still want to make your own hay? Buy vintage machinery to do it with? Print and online resources can get you started, but for the genuine, first-hand skinny, always touch base with a friendly veteran farmer and court his advice. A close second best is your county agricultural extension agent.

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