

HAYMAKING TOOLS for the Small Farm

These implements and tips make haymaking practical and economical, no matter your acreage.

By Joel Dufour

You've finally got that acreage in the country, and, whether for profit or pleasure, you want to get some hoofstock out in the field. During the warm season, those grazers will feed themselves. But what about harvesting some of that grass for the other half of the year? Some folks find it easier to buy hay locally, while others prefer the independence and sense of accomplishment of making their own.

For small-scale endeavors, making your own hay can be challenging, as most of the haying equipment on the market is designed for larger tractors and expensive implements. You could buy used equipment, but you won't want to spend your time working on worn-out, half-rusted junk—you've got hay to make! You could also ask a neighboring farmer to harvest your hay, either for pay or for a portion of the crop. However, farmers cut their own hay when it's at peak ripeness, and getting farmers to do this for small acreages is increasingly rare. Besides that, you'll most likely be left with 500-pound round bales, which you can't move without a compact tractor or bale spear on your pickup.

Fortunately, several good options can make small-scale forage harvest practical and economically feasible. Choosing the best method for your operation depends on the acreage you're harvesting, the terrain type, and how much time you have at your disposal.





A walk-behind hay rake implement (left) gathers hay in 30 minutes per acre. A hay-baler implement (right) can make a bale per minute.

1 to 2 Acres

Scythes. Yes, I mean swinging a good old-fashioned scythe, like your great-grandparents used to do. For very small operations and limited acreage, this time-honored cutting method still works great, and you'll only need to invest about \$250 to \$400. Plus, you'll have peace and quiet, no petroleum exhaust or noise, the meditative rhythm of the scythe, and a good workout, too.

Crucial to effectiveness and comfort is to choose a scythe that fits your body size and the material you're cutting. European-style scythe blades offer a variety of blade weights, lengths, and angles, which a good scythe dealer can help match correctly to your application. The scythe handle, or snath, is important to fit correctly. A few American producers make handles for the European-style blades—whether basic, non-adjustable models or deluxe models, adjustable for your height and build.

You will also need to learn scythe maintenance because a dull scythe will make you want to pitch it when the only thing you should be pitchin' is hay! For regular maintenance, sharpen with a whetstone, which will take less than a minute each time, and it'll keep your blade sharp for minimum cutting effort. Occasionally, you'll need to peen the blade edge, which is more challenging and not necessary, but it will extend the life of the blade. You'll use a special scythe-peening hammer and anvil for this, or a machined peening jig that you strike with a small ball-peen or utility hammer.

Learning proper scythe mowing technique is critical as well, or you'll wear yourself out quickly and become frustrated. The basic principle of proper scything is that the blade slices the grass, rather than chops it. Swing the scythe with a full-body motion in a large arc, pointing the blade almost directly into the swing. The differ-

ence between the leading edge and the heel of the blade is usually no more than a few inches, so that's how much you're cutting with each stroke and how far you'll step forward with each backswing. This kind of stroke distributes the cut over a much of the blade surface, which greatly minimizes cutting effort.

Most folks don't want to tackle 10 acres with a scythe, but an acre, or possibly two, is reasonable—for a competent scythe user, that'll be between a day and three days of work.

You'll probably want to use manual gathering and loose-storage methods. A good **hand-held hay rake** will go a long way in gathering it, and you can either loose-stack the hay in a barn loft or stack it right in the field. (This requires learning some technique.) Carting hay into the barn means more labor, but you lose virtually no hay to the weather or rot. Stacking it in the field costs you less labor, but you'll have some loss due to oxidation. Some folks rig up hand-powered baling machines. (You can find plans to build them online.)



Occasionally peening your scythe with a special peening hammer will extend the life of your blade.

3 to 15 Acres

Walk-behind tractors. A walk-behind tractor is an agricultural-quality, two-wheeled motive power unit with a power take-off (PTO), and it's capable of operating many different implements for use on a small farm. Depending on your dealer, a range of 20 to 45 imple-

ments is available. As one would hope, the price is a fraction of that of a four-wheel tractor.

Many Americans don't even know that walk-behind tractors exist, as they've been largely out of the American farming scene for a generation or two. Walk-behind tractors haven't lost popularity in Europe, where farms are smaller and steeper, particularly in the mountainous regions. Europe boasts about 30 brands of walk-

TOP AND PAGE XX TOP: JOEL DUFOR (4); BOTTOM: BOTAN ANDERSON, ONESCYTHEREVOLUTION.COM; PAGE XX AND XX BOTTOM: STEVE TOMLIN CRAFTS (2)



A walk-behind tractor hay-baler implement (left) produces 40- to 60-pound round bales, and you can stack up a trailer-load (right) in an afternoon.

behind tractors, half of them produced in Italy. The U.S. imports two Italian brands, which are allowing walk-behind tractors to make a comeback in North America as the popularity of small-scale, local, and organic farming blossoms.

The most affordable walk-behind tractor implement for forage harvesting is the **sickle bar mower** (also called a cutter bar mower). Sickle bars have been around for over a hundred years, and they're the most efficient mechanized mower on the market for power consumed versus volume of material cut. A walk-behind tractor with a sickle bar implement can cut up to an acre of hay per hour, so you can make good time mowing compared with a scythe. There are some dedicated walk-behind sickle bar mowers on the market, but they're typically not durable enough for agricultural use and don't accept other implements.

If you have limited amounts of time and enough hay to economically justify it, you can invest more in implements for the walk-behind tractor and get it to do more for you. A PTO-driven **hay-rake implement**, which quickly gathers the hay into windrows or piles, is a major labor and time-saver, even for folks who are doing manual put-up methods for hay (raking takes as little as 30 minutes per acre). Even more powerful, a **hay-baler implement** for the walking tractor produces 40- to 60-pound round bales at a rate of a bale per minute. There are no square-balers for walk-behind tractors, as round-balers are much more power-efficient per cubic foot of bale size.

If you're in a damp climate where it's difficult to properly dry hay, or if you're interested in the most nutritious feed for your livestock, you could even invest in a **bale wrapper** to fit your walk-behind tractor so you can make haylage. To make haylage, you cut the hay before it's fully mature (before seed-heads are viable).

Then, you bale it while the moisture content is still about 45 percent. (Dry hay is usually baled at about 15 percent moisture content). A bale wrapper will wrap the bale tightly in plastic film, squeeze the air out, and seal it. Haymaking typically leads to a loss of nutrition from drying, but in haylage, fermentation preserves more nutrients. Making haylage does take more time and costs more per bale to produce.

While the baler is the most expensive piece of this setup (it costs over twice what the walk-behind tractor does), the entire cost of a new walk-behind tractor and "haying" package—from \$2,700 to \$17,000—is typically less than half of the least expensive, new four-wheel tractor-based package. Plus, the bales produced by the walk-behind tractor are easy to handle by hand (of course if you have the four-wheel tractor system, you already have the tractor to move bales around). They're also about the same weight as most conventional square bales (with the added perk that they roll!), and they shed moisture when left round-side up in a field, the way full-sized round bales do. So it's fine if you don't get them picked up and in the barn right away and it rains, whereas square bales will be ruined if they get wet. Stack the small round bales in a barn like firewood (on their sides), or like soup cans (on their ends). For good airflow, stack them like firewood, if you have a sturdy barn that will take the outward pressure as the bales are stacked up. If your barn looks like mine—like it doesn't know quite which way it wants to fall—use the soup-can method.



Regularly sharpen your scythe blade with a whetstone for easier and more efficient cutting.

More Than 15 Acres

Four-wheel tractor implements sized for mini farms do exist. High-quality equipment in this genre is manufactured in Europe



If you already own a compact tractor and will need to cover more than 15 acres, you might want to explore implements sized for smaller farms.

and Japan, and some importers here in the U.S. bring them in and stock parts for them. Small hay mowers (sickle-bar, drum-type and disk-type), small hay rakes, and balers are available for tractors 20 horsepower and up with a Cat. 1 three-point hitch, 540 RPM PTO, and remote hydraulics (not always needed for hay-making). Expect to invest \$20,000 or more for new haying equipment and \$15,000 and up for the tractor. If you already own a compact tractor, or if your ground is too much to tackle with a walk-behind, this would be an avenue worth exploring.

The bottom line? You *can* effectively harvest forage from small

acres with the correct tools and techniques for your needs and terrain. So while the sun shines, get out there and make hay! 🌾

Joel Dufour started Earth Tools, North America's largest sales and service depot of walk-behind tractors and related implements, in 1993. Joel and his family live near Frankfort, Kentucky in an off-grid, 900 square-foot home they built by hand.

1/2 HORIZONTAL