GREAT WAYS TO CONQUER Mount Manure

An expert on environmentally friendly horsekeeping shows how to turn a potential liability into an asset with a customized waste-watching program.

Maybe you’ve ridden and owned horses all your life, but you’ve just brought the first one home to keep on your own place. Or perhaps you’ve had horses on your property for years and even take in a boarder or two. Or maybe you keep your horse at that nice “place in the country” — the one where a subdivision is going up right behind the barn. All of these horsekeeping arrangements have a common problem: Mount Manure. No matter where it is, a big heap of horse waste and soiled bedding is like the national debt: Unless you take steps to stop its growth, it will go nowhere but up as your quality of life goes nowhere but down.

But wait a minute: Isn’t there a positive side to all that stuff? After all, hasn’t animal manure been an agricultural boon since man first scratched out crop rows with sticks? Isn’t recycling the nutrients in herbivores’ manure nature’s way of enriching the soil? True, yet the relatively recent practice of confining animals in small spaces and on limited acreage produces a greater concentration of wastes than nature by itself quite knows what to do with. That’s where a good manure-management program comes in, benefiting you, your horse, your farm, the neighborhood and the surrounding environment.

First, let’s take a look at why it’s not such a great idea to let nature take its course with waste disposal in most horsekeeping situations. Then we’ll detail five options for conquering the Mount Manure that’s threatening to erupt at your horse place.

Why manage manure?

Whether you have a one-horse setup or a large boarding facility, you’ll pay a price — more than one price, in fact — for failing to manage the wastes that inevitably accompany horsekeeping. The payers include you, your horses and everyone around you. Here are eight good reasons for cleaning up your act.

Parasites. Any self-respecting wild horse would avoid the manure-contaminated environment that surrounds many domesticated horses. Under appropriate weather conditions, parasite eggs in manure hatch approximately every three days. Consequently, unless you use a daily preventive dewormer or a long-acting deworming compound, your horse will be continually reinfested by the newly hatched microscopic parasite larvae that remain in his dirty stall, paddock or pasture.

Mud. Manure means more mud. After all, both are nothing more than fine organic material with water added. When combined, mud and
Manure runoff (right) is more than an eyesore: It raises serious environmental issues. Proximity to nonhorse-owning neighbors (below), who may object to the sight and smell of a manure pile, increases the need for manure management.

A composting system (right) allows you to put horse manure and other stall waste to good use. With a little effort, a compost bin will produce a virtually endless supply of natural fertilizer. Spread over garden plots (below), compost can greatly improve soil quality and yield.

Because parasites are generally species-specific, try “trading” manure with a different type of livestock operation to eliminate pasture reinfestation. A neighbor with beef cattle or llamas, for instance, may want to use your horse manure on his fields while you use his ruminant manure on your acreage.

Manure multiply each other’s hazards. For example, having such muck underfoot leads to slipping and injuries for horses and humans alike.

Insects. Fouled mud and fresh manure both create a breeding ground for insects, especially filth flies. At best, insects are an annoyance; at worst, they inflict painful bites, spread disease and trigger allergic reactions. They also make your nonhorse-owning neighbors irritable.

Skin and hoof disease. Organic muck harbors the bacteria and fungal organisms responsible for diseases like scratches’, rainrot’ (rain scald), hoof abscesses and thrush’.

Wasted space. One horse produces between 40 and 50 pounds of fresh manure per day, which adds up to eight tons per year. The per-horse volume, with bedding included, totals one to two cubic yards monthly. At that rate, an unmanaged heap quickly covers ground that could be put to more productive and attractive use.

Unsightliness. Who wants to look at a ragtag, rotting manure pile that seeps foul juice and provides a source of windblown refuse?

Odors. Even if you don’t mind the smell of your decaying horse manure, your downwind neighbors may consider this an unpleasant intrusion into their semirural existence.

Environmental contamination. Sediment deposits and nutrient runoff contaminate surface water, to the detriment of fish and aquatic wildlife. You don’t have to live near a creek or wetland to be an environmental polluter: All water runs downhill, carrying potential problems for neighbors or waterways at the bottom of the hill. Nutrients leached from an unmanaged manure pile also contaminate groundwater, a particular concern if you rely on a well.
Five assaults on Mount Manure

Manure-management techniques not only eliminate those eight wasteful toils, they also make your job as horse and farm manager a whole lot easier and more pleasant. The waste-control measures described below all start with the same important first step—cleaning stalls and picking up the manure in paddocks, pens and turnout areas on a regular basis (at least every three days). Frequent removal breaks the parasite-reinfestation cycle and gets the manure out of the horse’s environment and into your management system. Starting with that basic management strategy, here are five options for staying on top of the heap, so to speak.

OPTION

1. Stockpile manure and stall waste, and apply it to pastures or crop fields at least twice annually during the growing season.

▶ Advantages: (1) Applying manure on pastures contributes to the natural nutrient cycle for improved soil fertility and grass growth. (2) You save money, as well. One horse produces about $150 worth of fertilizer each year. (3) This method is simple and labor-efficient to carry out.

▶ Disadvantages: (1) If you won’t be composting the waste, some parasite eggs will be able to survive in the manure that has not rotted. Unless you maintain an effective deworming program, each application of manure to pastureland will introduce additional larvae to be ingested by your grazing horses. (2) If your stall waste contains a lot of shavings or other bedding but very little manure, the ratio of carbon to nitrogen may be too high. When this is the case, the decomposing shavings rob nitrogen from the soil, adversely affecting pasture plants and causing them to turn yellow. (3) You will need access to a manure spreader and tractor.

▶ To implement this option: (1) You’ll need a storage area or bunker appropriately sized for the number of horses you have and the amount of stall and paddock waste they produce. A concrete pad with three walls is best at containing the manure and protecting the surroundings, but if that’s out of the question, select a dry, firm area that’s accessible for delivery, as periodically, moving material from the edges toward the center, where the microorganisms are most active.

With two separate compost bins (bottom left), you can reserve one for finished compost, while the other holds manure that’s still “working.” The tarp keeps the pile from getting too wet or too dry.

For the best composting results:

■ Monitor the temperature of the composting material with the aid of a compost thermometer. To destroy parasite eggs, the temperature of your piles should remain between 120 and 150 degrees.

■ Begin removing compost when the pile is about half its original size. It should be crumbly, like soil, and have an earthy smell.

■ If you have a manageable quantity of compost, spread it manually with a manure fork or shovel from a small cart drawn by a riding lawnmower.

■ Apply about one-quarter inch of compost at a time, with no more than three quarters of an inch applied to each area annually.

continued on next page
If twice-yearly manure spreading is your only real use for tractor and spreader, hiring a nearby farmer and his equipment is certainly more cost-effective than investing in your own.

well as for the equipment you’ll use to spread the manure. (2) Cover the storage area with either a roof or a tarp to prevent the nutrients in the manure from leaching out, thereby reducing fertilizer value and causing environmental problems. (3) Buy, borrow or hire a manure spreader and a tractor with a bucket for loading and pulling it. (4) Apply manure only during the growing season to prevent unused nutrients from being washed away and contaminating the environment. (5) If bedding materials predominate in the heap, mix an extra source of nitrogen (blood meal, bonemeal or straight nitrogen fertilizer) into the stall waste as you spread it. Check with one of the resource professionals listed in the resources sidebar (see “At Your Service,” page 84) for more information or for help in determining the correct proportions needed.

Compost all your manure and stall waste, and apply the compost to pastures, gardens, flower beds and lawns.

Advantages: (1) The heat generated by composting manure and stall waste kills parasite eggs, pathogens and weed seeds, reducing your horses’ exposure to disease agents and your soil’s burden of noxious plants. (2) Fly populations decline with lost breeding grounds and egg/larvae death. (3) The warm, earthy smell of composting organic materials replaces manure’s off odors and the flies attracted by rot. (4) Composting reduces by approximately 50 percent the volume of wastes you have to deal with. (5) Compost improves the condition and productivity of soil by returning microorganisms to it, improving its moisture-holding capacity and supplying readily available nitrogen to plants in a form that’s less likely to get washed away and cause environmental problems. What better soil amendment to apply on your pastures, garden, ornamentals and lawn, or to give away to horseless neighbors?

Disadvantages: (1) Composting demands some regular labor and diligent oversight. (2) Manual application of the finished product on gardens, flower beds or small pastures requires a certain amount of love for the labor of gardening projects. (3) A manure spreader and tractor are necessary for spreading larger quantities on pastures.

To implement this option: Composting is a relatively uncomplicated process that can be accomplished in a backyard setup with either simple bins (see “To Get the Most Out of Compost,” page 78) or piles arranged in a convenient, dry area. For larger operations or greater convenience, a concrete pad with three walls or two large concrete bins is optimal.

The compost should be covered with either a roof or a tarp to prevent the pile from getting too wet or too dry. Water the pile to keep its moisture level equivalent to that of a wrung-out sponge.

Because composting is an aerobic process, you will need to aerate the piles either actively (by turning materials regularly by hand or with a tractor) or passively (by inserting PVC pipes in the centers of the piles or laying them across the bottom of the bins). Passive aeration is simple and effective for smaller operations. Compost benefits pastures most when applied during the growing season.
3. Give away all the manure and stall waste produced on your place to commercial gardening operations or home gardeners.

**Advantage:** Useful for pastureless horse places or those lacking sufficient land to use all the stall waste and manure produced, the giveaway system works well in urban or suburban areas populated by avid gardeners and landscapers.

**Disadvantages:** (1) You will have to be prepared to have people coming onto your premises. (2) Initially, you may have to work to “market” your product and make connections with interested parties. If you are in a rural or agricultural area, you may not be able to cultivate an interest among small gardeners; but crop farmers or commercial vegetable growers might take it off your hands. (3) You may have to compost the wastes first to make them more marketable. (4) Because of the unpredictability of demand and seasonal fluctuations, this is not usually a feasible option for larger boarding facilities that generate volumes of material.

**To implement this option:** Consider accessibility and convenience when siting your storage or composting area for public access. Placing the take-away pile along a driveway or on a secondary roadway works well, and you will have more takers if people can reach the area at their convenience, even when you’re not at home.

If your operation generates larger quantities of manure, you may need a tractor with a front-end loader to make your product “more attractive” for the small gardener who wants a pickup load. Get the word out with a sign at your driveway or road that advertises “free horse manure.” If you live in a well-traveled area, this may be all the marketing you need. Place an ad in local papers or gardening publications. Talk with community gardening programs, park authorities, local garden clubs, nurseries or other organizations.

Join forces with your horsey neighbors to establish a joint giveaway program and set it up for an announced time, such as a community garage sale. Work with a reporter at a local newspaper for some free publicity. Specify what people need to bring to the giveaway (gloves, shovel, garbage cans), and collect old feed sacks to use as “packaging.”

---

4. Haul your manure and stall waste off your premises yourself, or hire a professional disposal company to do it for you.

**Advantage:** This option may require less energy and time on your part.

**Disadvantages:** (1) If you have to hire a loader, it can be expensive. (2) You’ll have to put in some research time to make the right contacts.

**To implement this option:** Storage space required depends on how much waste you accumulate and how often you remove it. Twice-yearly removal—spring and fall—is the minimum. If you are going to be responsible for the hauling, you will need equipment, probably a larger tractor with a bucket and a dump truck.

Disposal companies usually haul anything for a price. In many parts of the country, you can rent receptacles specifically for manure storage. When they’re full, the disposal company hauls them away—usually at a pricey option.

You can haul manure to most landfills, but research the cost first: Landfills generally charge a tipping fee and may also collect a special handling fee for livestock.

If you elect to haul away your barn waste yourself, seek out a topsoil or composting facility in your area. Many will accept livestock waste for free, or for a small tipping (waste-disposal) fee.

---

5. Reduce the amount of stall waste generated on your place by carefully selecting your bedding materials and controlling the quantity used.

**Advantages:** (1) Less waste by volume means less cost and less storage area needed for bedding. (2) Alternative beddings, such as shredded newspaper, are more absorbent and contain less dust, mold and foreign material—a definite health advantage for horses and handlers. Newspaper bedding also composes better, faster and more completely than wood-derived beddings, so you’ll have a nicer finished product if you plan to compost. (3) Cutting down on bedding also lessens the environmental impact by reducing the quantity of wood (or other) products that your horse operation consumes.

**Disadvantages:** (1) The volume of waste is reduced, but the remaining material still requires disposal. (2) Refurbishing stall floors can be expensive, even though the cost is usually recouped over the long term through savings in bedding and labor expenses.

**To implement this option:** Consider outfitting all stalls with some type of rubber mats (see “Ask the Footing Doctor,” EQUUS 226, for more information). Rubber mats provide cushioning, as well as safe and even footing, and the smooth surface makes scooping out soiled bedding quick and easy.

Reduce the amount of bedding you use, or apply it only on “potty spots,” spreading just the quantity necessary to absorb urine and moisture. Try alternative beddings, such as shredded newspaper, that offer more absorbency. And clean stalls with frugality in mind, carefully separating the clean bedding for reuse and tossing away the soiled.

These five options are not mutually exclusive, and you can select strategies from one or all to institute a waste-handling plan for your property that improves the quality of life for all creatures in your immediate area. The options all assume that you’re starting from square one; however. If you currently have a moldering old mountain of manure located in an inappropriate area, consider a one-time giveaway or haul-away to give you a fresh start on planned manure management.

In the future, with the information contained here, plus the many other resources available to you as a horse caretaker, you’ll know that when manure happens, you’re prepared to transform it from burden to benefit.
The measure of your waste

Dan Caldwell, manager of farm maintenance and composting in Washington State University’s department of animal sciences, handles tons and tons of waste in the school’s state-of-the-art, campuswide composting facility. Seeing things from that perspective, he believes that livestock-management courses have their priorities reversed: “In the composting business, we think they need to be teaching the back end of the cow first.”

The same applies to the back end of the horse. And with that in mind, manure management has to be included in farm-purchase and layout decisions from the very start. Location, size, structural needs and “footing” for machinery and trucks are choices that can make or break your efforts to control Mount Manure.

The amount of space needed for solid-waste management is directly linked to the number of horses, the size of your pastures and the volume of stall waste stored between removals. Your “spreadable” acreage (in relation to your horse population) and the health of your pastures influence how much area you have to devote to manure storage or composting, since healthy pastures with good stands of grass can utilize nutrients from manure or compost more effectively than overgrazed, weedy or bare soils can.

An often-overlooked consideration in space allotment is access for equipment. The type of equipment used (not just your own but any vehicles brought in by others to move the manure) determines how large a space is needed: A large backhoe and dump truck require more area than a small tractor with a manure spreader. Equipment needs dry, level ground, preferably concrete- or gravel-based, for turning and positioning; a dirt-based area will get torn up quickly, making more mud for you to endure.

“In the composting business, we think they need to be teaching the back end of the cow first.”

The following guidelines determine the approximate space needs for four common manure-management setups:

- **manure storages**: For six month’s worth of uncomposted manure and stall waste for one horse, an area approximately 10 cubic yards (8 by 8 by 4 feet) in size is needed.

- **composting piles**: Figure on two to three piles, 8 feet square by 4 feet high in size, for smaller operations (one to four horses). When using a tractor for turning or aerating purposes, locate the operation on a concrete pad to make it easier for the bucket to scrape up the piles and to keep the tractor tires from tearing up the ground. A 30-foot-square area, 4 feet high, will hold three piles of manure from four to 10 horses, with space left over for the equipment.

- **backyard composting systems**: For a one- to four-horse operation without a tractor or heavy equipment, two to three 8-foot-square by 4-foot-high bins are sufficient.

- **larger composting systems**: Two three-sided concrete bins approximately 16 feet square by 4 feet high should suffice for larger operations (five or more horses) using heavy equipment; very large boarding facilities should consider 30-foot-square-by-4-foot-high concrete bins.