

Horse Footing Materials

Sacrifice/exercise area is a small paddock where horses are confined during the rainy season or when pastures are not growing actively to prevent overgrazing and trampling. It is called a sacrifice area because you are giving up the use of that small portion of land for the benefit of the rest of your pastures. It is also useful for separating or confining animals, and for controlling the amount of grass your horse consumes on a daily basis. The sacrifice area should be located on higher ground and away from wetlands or any surface water flows. It is best if the area is surrounded by grasses or other vegetation to filter any potential runoff contaminated with pathogens, sediments and nutrients. It is probably best to have one sacrifice area per horse. An exercise area should be a minimum of 200 square feet per adult horse. Sacrifice paddocks must be cleaned frequently. Footing is an important consideration for sacrifice areas. We have tested several possible options at Hadley Horse Farm University of Massachusetts Amherst. Each footing option has its own pros and cons.

Wood Chips

Materials: Paper grade white pine wood chips

Area: 2,400 Ft²

Depth: 1 foot

Cost of materials: \$1,860 (\$12-\$15 per yard)

Cost of Labor: \$750 (~10 man hours with a bucket loader)

Total cost= \$2,160

- Unsuitable material for horses with tendon issues as they do not provide a solid enough footing
- Horses tend to dig into the material so the paddock needs to be leveled frequently.
- Absorptive qualities of woodchips work as an advantage as they absorb urine and manure which allows for initial nitrogen absorption that is released over time as materials decompose.
- This is a low cost method; however, woodchips will need to be replaced periodically as they mix with the underlying soil.

Wood Chips with Geotextile Fabric

Materials: Paper grade white pine wood chips and geotextile fabric

Area: 2,400 Ft²

Depth: 1 foot

Cost of woodchips: \$1,860 (\$12-\$15 per yard)

Cost of geotextile: \$445 (one 12.5'x432' roll)

Cost of Labor: \$750 (~10 man hours with a bucket loader)

Total cost= \$3,055

- Movement of woodchips into the underlying soil can be minimized by adding a layer of geotextile fabric that separates the woodchips from the soil.
 - Geotextile fabric reduces the frequency at which you need to add new source material
 - The absorptive properties of the wood chips prevents the pooling of water so the paddock will not freeze over in the winter
 - Woodchips tend to stick to manure as you remove it; however, the woodchips can be added to a compost pile without causing any problems
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Crushed Gravel

Materials: ¾" crushed gravel

Area: 2,400 Ft²

Depth: 1 foot

Cost of gravel: \$1,950 (\$13 per yard)

Cost of Labor: \$1,125 (~15 man hours with a bucket loader)

Total cost= \$3,075

- Crushed gravel provides a firm footing for highly trafficked areas and lasts longer than woodchips
 - It is important to choose an appropriate sized gravel to avoid hoof injury.
 - Care must be taken in removing manure as you do not want to add gravel to your compost pile.
 - Gravel will need to be added to the system over time
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Crushed Gravel with Geotextile Fabric

Materials: ¾" crushed gravel

Area: 2,400 Ft²

Depth: 1 foot

Cost of gravel: \$1,950 (\$13 per yard)

Cost of geotextile: \$445 (one 12.5'x432' roll)

Cost of Labor: \$1,125 (~15 man hours with a bucket loader)

Total cost= \$3,520

- Geotextile fabric will prevent gravel from migrating into the underlying soil which reduces the frequency at which you will need to replace gravel.
 - It is important to ensure that the geotextile fabric is fully covered at all times to prevent tearing which compromises its functionality
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Crushed Gravel and Stone Dust

Materials: bank run gravel and stone dust

Area: 2,400 Ft²

Depth: 8" bank run gravel and 4" of stone dust

Cost of gravel: \$1,440 (\$12 per yard)

Cost of stone dust: \$600 (\$15 per yard)

Cost of Labor: \$1,125 (~15 man hours with a bucket loader)

Total cost= \$3,165

- Combining sand and crushed gravel provides a very solid footing
- Puddles can form on the surface which will result in ice in the winter
- The ingestion of sand can cause digestive issues (sand colic) for horses so feeding in these areas should be well managed or avoided.
- Care should be taken when removing manure to reduce the amount of gravel and stone dust in compost piles

Crushed Gravel and Stone Dust with Geotextile Fabric

Materials: bank run gravel and stone dust

Area: 2,400Ft²

Depth: 8" bank run gravel and 4" of stone dust

Cost of gravel: \$1,440 (\$12 per yard)

Cost of stone dust: \$600 (\$15 per yard)

Cost of geotextile: \$445 (one 12.5'x432' roll)

Cost of Labor: \$1,125 (~15 man hours with a bucket loader)

Total cost= \$3,610

- The addition of the geotextile barrier in this system prevents the gravel from migrating into the soil below.
- Although the initial startup costs are greater, maintenance costs decrease as you do not need to add as much new material.
- This material is the easiest to remove manure from and maintain
- This material holds odors the most

This publication has been funded by Massachusetts Department of Environmental Protection, s319 program.

