

BY DESIGN

Winter feeding areas

by Katy Lippolis and Shawn Shouse, Iowa State University

Feeding hay over the colder months can be a messy job that often results in trampled pasture ground, muddy conditions and wasted hay. Getting cattle out of the mud and keeping them dry is a necessary component of managing winter nutrient requirements, and it may help you stretch your hay resources. Cost-effective options exist for producers, whether just securing high-traffic areas or constructing facilities dedicated to winter feeding.

For a durable, all-weather ground surface, it is hard to beat concrete. For lower-cost or easier installation in high-traffic areas, consider a rock surface with geotextile reinforcement. Geotextile fabric is a construction-grade liner material available through many earthwork contractors and suppliers. The fabric can be either woven (like window screen or cloth) or non-woven (like heavy felt).

Geotextile fabric serves to hold the overlying rock at the surface while allowing water to pass through. Tension in the fabric and friction with the rock and soil act to

spread wheel or animal loads over a larger soil area, similar to the action of a snowshoe under a foot.

Geotextile fabric is placed on the graded soil surface and covered with two layers of rock: 4 to 6 inches (in.) of No. 2, 3 or 4 grade coarse rock (1- to 2-in. maximum aggregate size); topped by 2 to 3 in. of finer cover, such as road-grade mix ($\frac{3}{4}$ -in. maximum aggregate size).

Roll the geotextile fabric out flat over a smooth soil surface and overlap edges of the fabric at least 18 inches. Place rock by hand over the edges and seams in the fabric to hold it in place. To avoid damage to the fabric, place remaining rock beginning at the near edge of the fabric and drive vehicles only on the rock that is already in place.

When designing a geotextile pad for use as a feeding area, make sure

to place it in a well-drained, open area to prevent further high-traffic areas and muddy conditions. Design in a way that allows cattle movement around feeders.

Feedbunks and round-bale feeders can be used; however, make sure adequate space is allowed surrounding the feeders to prevent

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Fig. 1: Dimensions for ground surface around feedbunk

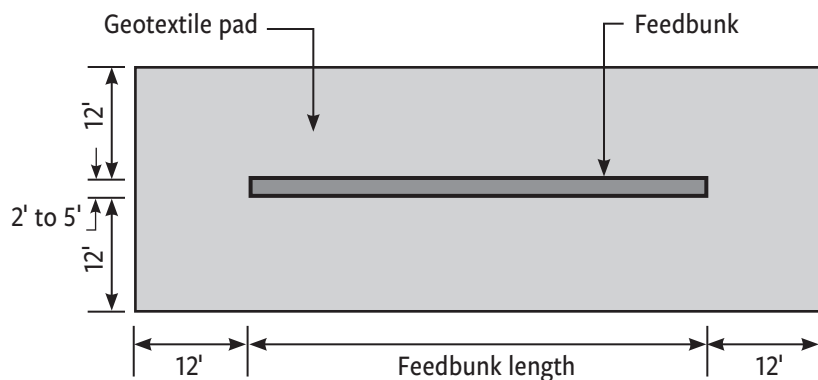
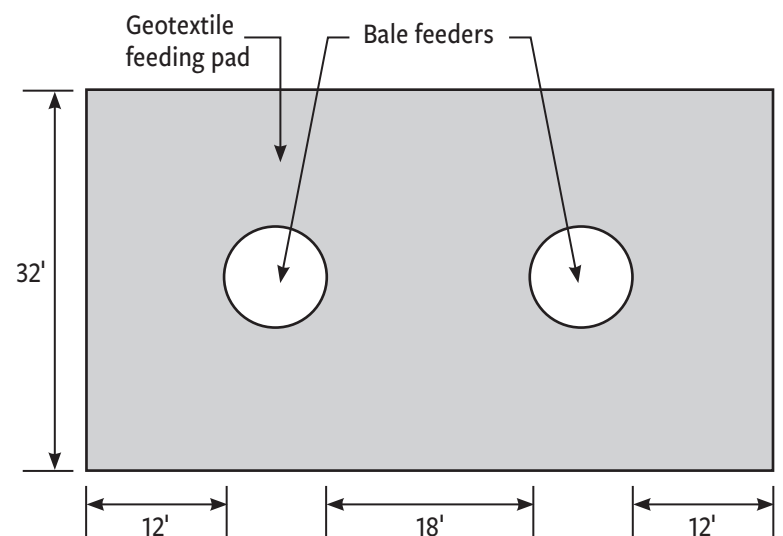


Fig. 2: Dimensions for ground surface around bale feeders





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cattle tearing up the gravel. Sloping the geotextile pad away from the feeders can also help maintain the pad's integrity.

For more information and guidance, please visit:

<https://www-mwps.sws.iastate.edu/catalog/construction-farm/using-all-weather-geotextile-lanes-and-pads>

<http://www2.ca.uky.edu/agcomm/pubs/aen/aen79/aen79.pdf>

<http://www2.ca.uky.edu/agcomm/pubs/aen/aen115/aen115.pdf> |

Editor's note: "By Design" is a regular column of the *Angus Beef Bulletin* featuring facility and homestead design for cattlemen. Katy Lippolis is an Extension beef cow-calf specialist and Shawn Shouse is an Extension agricultural engineer at Iowa State University.

Fig. 3: Pressure redistribution

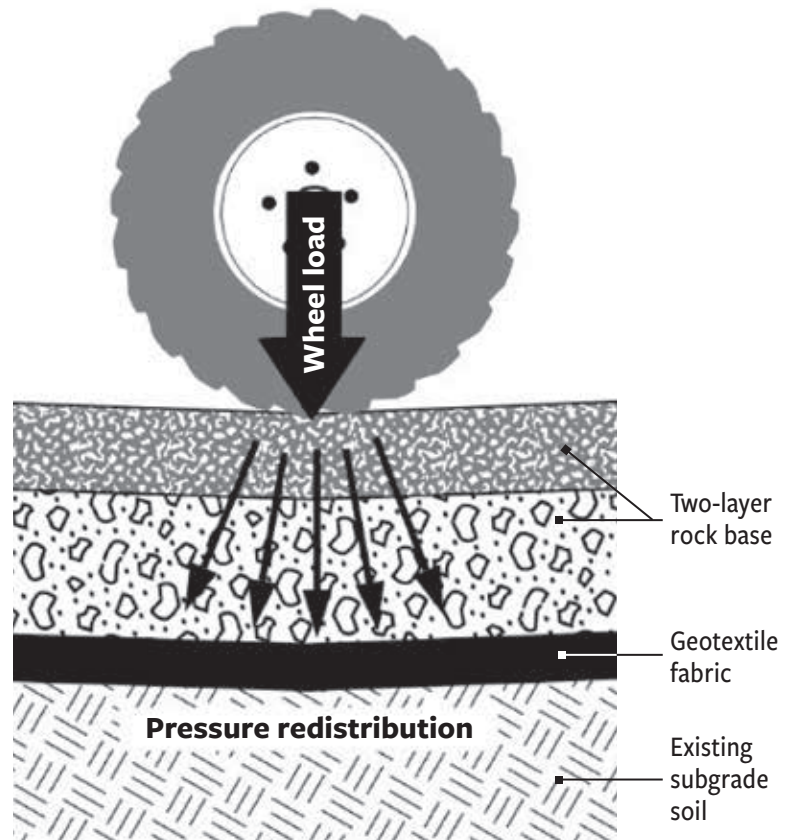


Fig. 4: Geotextile fabric on graded soil surface under two layers of rock

