Fenceline

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There´s nothing colder than a south wind in the winter time! I guess that´s because windbreaks are normally planted on the north and west of our farmsteads. When you travel in Nebraska, you can always spot the farmsteads, because they are the only things surrounded by trees.

Windbreaks are barriers used to reduce and redirect wind. Often there are rows of trees and shrubs but also may by perennial or annual crops and grasses, fences or other materials. Windbreaks reduce winter stress on livestock. All livestock have critical minimum temperatures that must be maintained. When animals are subjected to air temperatures below that critical temperature, they must consume more food to survive. The amount of feed required to maintain body temperature in cattle is reduced when they are protected by windbreaks. For example: an 880 pound calf with its winter coat, has a critical temperature of 32 degrees, this calf requires 1.1 percent more feed per degree of cold. If the temperature is 10 degrees and the wind speed is 10 miles per hour, the wind-chill temperature is 4 degrees below zero. This animal would require 40% more feed (critical temp minus wind-chill temp multiplied by increased feed requirement). If this same calf was protected by a windbreak, providing a 70% reduction in wind speed, the wind-chill factor would change from minus 4 degrees to 5 degrees above zero. This translates into 30% more feed, or a 10% savings.

There are a number of factors that determine the effectiveness of the windbreak. The major factors are height, length, density and continuity. Windbreak height is the most important factor determining the distance downwind protected by a windbreak. The uninterrupted length of the windbreak should be at least 10 times the height. The density of a windbreak also affects the reduction of wind speed. Density is the ratio of the solid portion of a windbreak to the total area of the barrier. The continuity of a windbreak also influences its efficiency. Gaps in a windbreak become funnels that accelerate wind flow.

Windbreaks also cause the snow to drop out of the wind stream. Although the windbreak provides wind protection for a distance of 10 times the height of the windbreak, the snow will normally fall out in the first fourth of the windbreak. A recommendation for windbreak space for beef cows and bulls is to provide 50 to 100 square feet per head.