

Info

How can windbreaks protect livestock from the cold?

Working Trees



▲ Windbreaks offer valuable protection for livestock in winter. Courtesy photo by Mike Murphy, Middle Niobrara Natural Resources District.

Windbreaks are trees and shrubs that are strategically planted to modify the wind and protect crops, livestock, communities, and other valuable resources. A living barrier often used to protect annual crops, windbreaks also offer livestock refuge from harsh conditions. Shelter is vital during cold winter months when livestock are exposed to chilling winds and freezing precipitation.

However, livestock can experience cold stress in any season. Maintenance energy requirements increase whenever temperatures fall below an animal's "lower critical temperature." At the lower limit of the livestock's comfort zone, they will experience cold stress. Temperature stressed animals require additional feed to maintain body condition, gain weight, or sustain healthy pregnancies. Many factors affect livestock lower critical temperature tolerance, such as their coat, whether the animals are wet or dry, and their age.

Benefits of slowing chilling winds to livestock operations

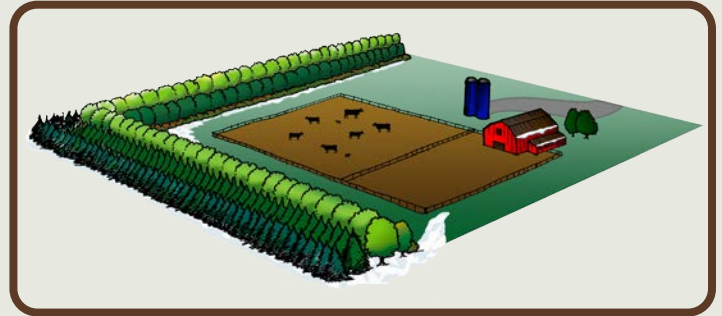
Improved feeding efficiency			Snow control
Increased milk production			Reduced animal stress
Improved animal health			Higher weights
Increased forage yield			Improved heating efficiency of confinement buildings

▲ Slowing chilling winds with windbreaks may benefit livestock operations. USDA Forest Service graphic.

Windbreak Benefits

By reducing livestock stress, operators can realize direct economic savings. Windbreaks can result in livestock health improvements such as lowered birthing mortality rates and rates of disease. This directly impacts farm finances by reducing veterinary bills. Additionally, the placement of windbreaks next to confinement operations can reduce costs associated with moving snow by keeping access lanes clear. Producers can plant trees in pastures to create outdoor “living barns” to provide more protection from cold winds.

Windbreaks may also improve the condition of forages in cooler seasons. Much like annual crops, pasture grasses and forages are susceptible to physical damage and moisture loss when exposed to wind. By disrupting winds, windbreaks improve growth efficiency and reduce desiccation of forage plants. Windbreaks can also be planted to redirect snow away from important grazing areas or corridors for livestock or farm equipment.



▶ Windbreaks slow windflow, which benefit livestock in the protected zone by reducing cold stress and modifying snow accumulation. USDA Forest Service graphic.



▶ Windbreaks provide protection for cattle during increased seasonal feeding times. USDA Forest Service photo.

Establishing a Windbreak

Before establishing a windbreak, land managers should identify the goals of their operation and the specific problems being caused by wind and blowing snow on their land. Land managers must ensure that the windbreak is of proper height, width, and density to achieve desired effects. Specific design elements should be addressed prior to establishment, including efficient watering systems for livestock. Also consider fencing, proximity to farm buildings, access for windbreak maintenance, and suitable species selection before planting.

When established adjacent to livestock operations, windbreaks can protect animals from winds during cold weather, improve efficiency of livestock operations, and save producers valuable financial resources.

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For more information, visit:
<https://www.fs.usda.gov/nac/practices/windbreaks.php>

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