

# Pasture Improvement Tools

## Pasture Management & Soil Conservation



### Livestock farms in Vermont can improve soil and water quality through pasture management.

Farmers' management practices seem to have a direct effect on soil and water conservation.

Keeping soils well covered at all times (no matter what you are growing) is a sustainable and desirable practice also in well-managed pastures.

The top layer of a healthy soil holds an amazing amount of bacteria, fungi and insects—so much that it actually outweighs the livestock that live on its surface! Soil biodiversity influences soil structure and quality by disabling erosion, and so improves water quality. By keeping soils covered and without overgrazing (Fig. 1), moisture stays in the soil longer, fostering healthy, sustainable and diverse ecosystems.

Healthy soils soak up large quantities of water which after being used by plants is slowly released to waterways. When livestock graze, pastures shed (or shut down) proportionally the same root area in the soil, which along with manure and urine, feeds beneficial microorganisms (Fig. 2).

In order to maintain well managed pastures, it is necessary to rotate animals between fenced-in paddocks which can be done simply by using electric fence. Each paddock allows animals lush forage (between 6 to 8 in height), leaving a minimum of 2 in of residual forage.

More pastures' subdivisions enhance ecological benefits improving production but imply higher costs and labor.

Soil fertility and quality enhancements occur when plants and soils have enough time to recover between grazings. Animals place great amounts of manure and urine directly on the pastures. For example, each adult cow can deposit over 200 lbs. of nitrogen and over 100 lbs. of phosphorus, potassium and calcium per year ensuring enough nutrients for plants to re-grow.

#### **Take-home message:**

- \* Pasture management can help build soil health and improve water quality.
- \* Allow pastures enough time for rest and recovery.
- \* Keep soils covered; bare soil increases erosion and runoff, compro-

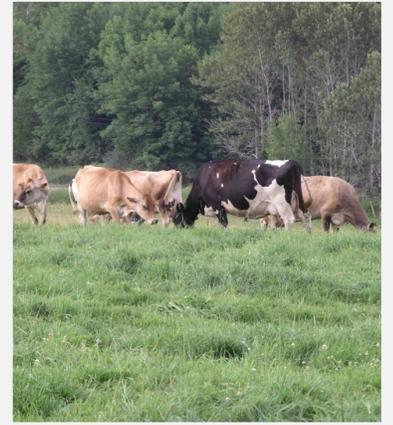


Figure 1: Lush dense pastures protect soil structure and quality.



Figure 2: Demonstration of different grazing levels in the root development which directly relates to soil quality.

### MORE INFORMATION

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