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Plant Chat

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Grass Makes Its Own Food

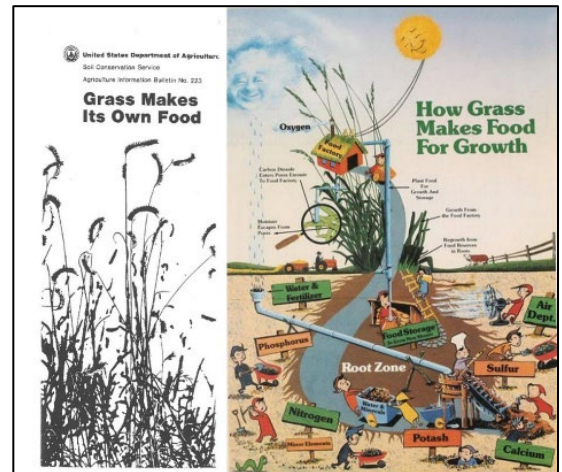
Grass, like other plants, make their own food. Have you ever wondered how this relates to the beef on your table or dust storms on a windy day? The simple answer is that cattle grow from grass they consume, and roots and leaves cover the soil. As with most things, there is a lot more to the story. Back in 1960 (reprinted 1986) the USDA published a bulletin that describes the food making process of grass (Agriculture Bulletin No. 223

<https://archive.org/details/CAT87843962/mode/2up>). It explains what happens to a grass plant that repeatedly loses its green leaves during the growing season and how this relates to grazing and erosion control. Other than a few new discoveries (see below), basic principles have not changed over the years. Understanding these processes is essential for any land manager, whether farming, ranching or managing turf, to optimize grass performance for its intended purpose. Check out the bulletin. Along with narrative, it has a great animated illustration!

Changes to Note:

Illustration: The caption at the base of the grass plant “The Regrowth from food reserves in Roots”, should be changed to “Regrowth from Food Reserves in the Crown”. It has since been shown that once assimilates are in the roots, they stay in the roots. It is the reserves in the crown of the plant that support leaf regrowth until adequate leaf area is recovered to replenish crown reserves and support further growth.

Narrative: (last page): Decaying Grass.....Decaying plant roots supply organic material to the soil profile. The decaying leaves, stems and manure remain on the soil surface and increase organic matter at the surface, but not deeper into the soil profile (with limited exceptions due to animal and insect activity).



Early Emerging Weeds

Weed identification is the first step in effective weed control. Currently, winter annual and early-season species are actively growing. To assist in Identification and management of some of these early weed species, check out information compiled by North Dakota State University and South Dakota State University Extension.

[Early Season Weed ID Samples: the Good, the Bad, and the Ugly](#)

[Early Emerging Weeds and Effective Management](#)

Varieties vs. Ecotypes: Balancing Adaptation and Resilience

When selecting a diverse perennial mix of species for restoration of sometimes decades long conservation projects, the choice between a single-source identified ecotype and a broadly sourced variety (release) can significantly influence long-term success. A local ecotype offers tight genetic alignment with site-specific conditions, which can translate to strong, early establishment and adaptation to known soils and climate. However, a narrow genetic base may limit its ability to respond to erratic environmental conditions.

Diverse varieties such as Bounty Germplasm big bluestem, developed from vegetative collections in 40 Minnesota and 9 South Dakota counties, bring a wider genetic diversity that enhances resilience to drought, temperature swings, and site heterogeneity. Enhanced diversity allows for greater adaptability within the stand, increasing the likelihood that some plants will thrive under shifting conditions. Diverse varieties have generally undergone extensive testing compared to local ecotypes and may provide more consistent performance over time across a range of environments. They are commonly more commercially available as well. Prioritizing site-specific adaptation versus long-term resilience and stability is a key planning consideration for long-term mix design.