

Top-dress lime for forage production in western Oregon

Producers often question the effectiveness of top-dress lime on pastures. A top-dress lime application for established pastures is a prudent investment when suitable forage species are present (Figure 11). Species such as tall fescue, orchardgrass, perennial ryegrass, and clover benefit from a top-dress lime application. Pastures that consist primarily of bentgrass, velvetgrass, and similar less productive species will not increase forage yield or quality after top-dressing with lime.

Unlike fertilizer, especially N, lime is applied to maintain adequate soil pH and optimal yield rather than to increase yield. Even so, increased forage yields from top-dressed lime applications have been measured in western Oregon when the soil pH is below the crop threshold.

For example, a nonirrigated orchardgrass–bentgrass pasture in Tillamook County received top-dress lime applications at rates of 0, 1, and 2 t/a in the fall. The surface soil pH was 5.2, and the recommended minimum soil pH for an orchardgrass pasture is 5.8. No yield increase was measured the first spring after application. However, the second spring after lime was top-dressed, the annual forage yield (sum of three clippings) increased 1,000 lb/a with the 2 t/a top-dressed lime treatment compared to no lime treatment (Figure 12).



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Figure 11.— Maintaining adequate soil pH is critical for forage growth. Top-dressing lime on pastures is one method of maintaining soil pH.

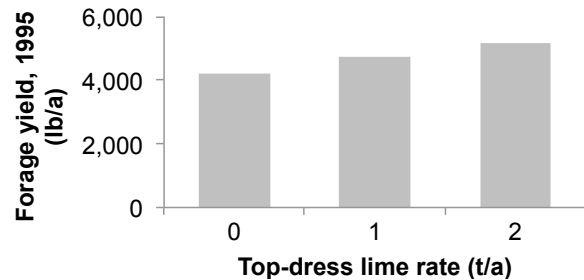


Figure 12.— Annual pasture dry matter yield the second year after top-dress lime application to an orchardgrass–bentgrass pasture in Tillamook County with a soil pH of 5.2 (0- to 2-inch depth). Figure by John Hart. Data from Rogers, 1995.

Yield increase can be substantial when the forage contains a legume and suitable grass species. For example, a nonirrigated orchardgrass–clover pasture in Lane County received top-dress lime applications of 0, 1, and 2 t/a in the fall. Similar to the pasture in Tillamook County, no yield increase was measured the following spring. However, the second spring after top-dressing, annual forage yield increased 3,000 lb/a where 2 t lime/a was top-dressed compared to the treatment receiving no lime (Figure 13).

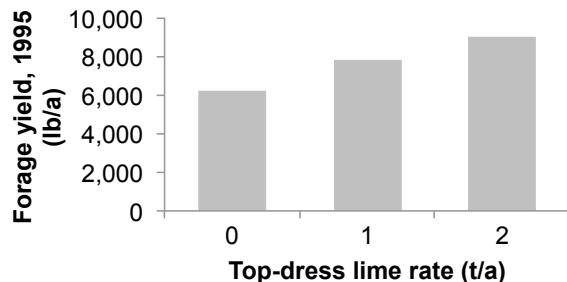


Figure 13.— Annual pasture dry matter yield the second year after top-dress lime application to an orchardgrass–clover pasture in Lane County with a soil pH of 5.9 (0- to 2-inch depth). Figure by John Hart. Data from Rogers, 1995.

Top-dress lime rates are usually 1 to 2 t/a. They should not exceed 2 t/a. Apply lime while soils are dry, such as early to mid-fall. Before lime application, the forage in the pasture should be grazed or mowed down to a height of 3 inches. Once the lime is applied, remove livestock from the pasture for the remainder of the fall and winter.

