



AGRONOMY SERIES

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AGRICULTURAL LIMESTONE USE IN ALABAMA

Most Alabama soils are acid. Farmers realize that they must amend their cropland and pastures with ground agricultural limestone or some other alternative soil liming material (e.g., basic slag, boiler wood ashes, by-product lime, etc.) in order to grow healthy crops with high yield potentials. The most important reason to soil test is to periodically check the soil pH (the acidity level of the soil). For most crops and soils, if the pH drops below 5.8, it is time to lime the soil. Crops growing in fine textured soils (clayey soil) can tolerate a slightly more acid soil. Some crops can tolerate soil acidity better than others. Pine trees, blueberries, azaleas, ferns and many wild shrubs and vegetation grow well in Alabama's naturally acid soils. Some forage grasses (e.g., bahiagrass and bermudagrass) can tolerate a lower soil pH than cotton, corn, and legumes.

Estimating total agricultural limestone need in Alabama is difficult. Values in Table 1 and Fig. 1 were calculated from the most recent soil test summary from the Auburn University Soil Testing Laboratory. Forty-three percent of all samples tested have a pH below 5.8 and probably need some limestone application. Fig. 1 suggests that the percentage of samples needing lime changes as row crop acreage changes. In the late 1970s, Alabama had a lot of marginal land in row crop production. Today, we have about the same percentage of our cropland needing lime as 40 years ago. Interestingly, about 1/4 of the samples tested for cotton and peanuts need lime. If we assume that these growers must lime about every 4 years, then this is about as good a job as could be expected

If we assume that the soil samples tested by the A.U. Soil Testing Laboratory are representative of the cropland in the entire state, and assume that when lime is needed, an average of 1.5 tons per acre is recommended, we can estimate the total limestone need by crop (Table 1). The weakness in Table 1 is that we can only estimate the total acreage in pastures, hay, and other forages (4 million acres). Small grains are included in the estimate for forages. Because 55 percent of all soils tested for forages have a pH below 5.8, estimated limestone need of forage crops (3,300,000 tons) is more than 6 times the total limestone actually used in Alabama in 2001-2002 (545,400 tons). The figures in Table 1 do not consider crop rotations and limestone used by gardens, lawns, shrubs, and other specialty crops.

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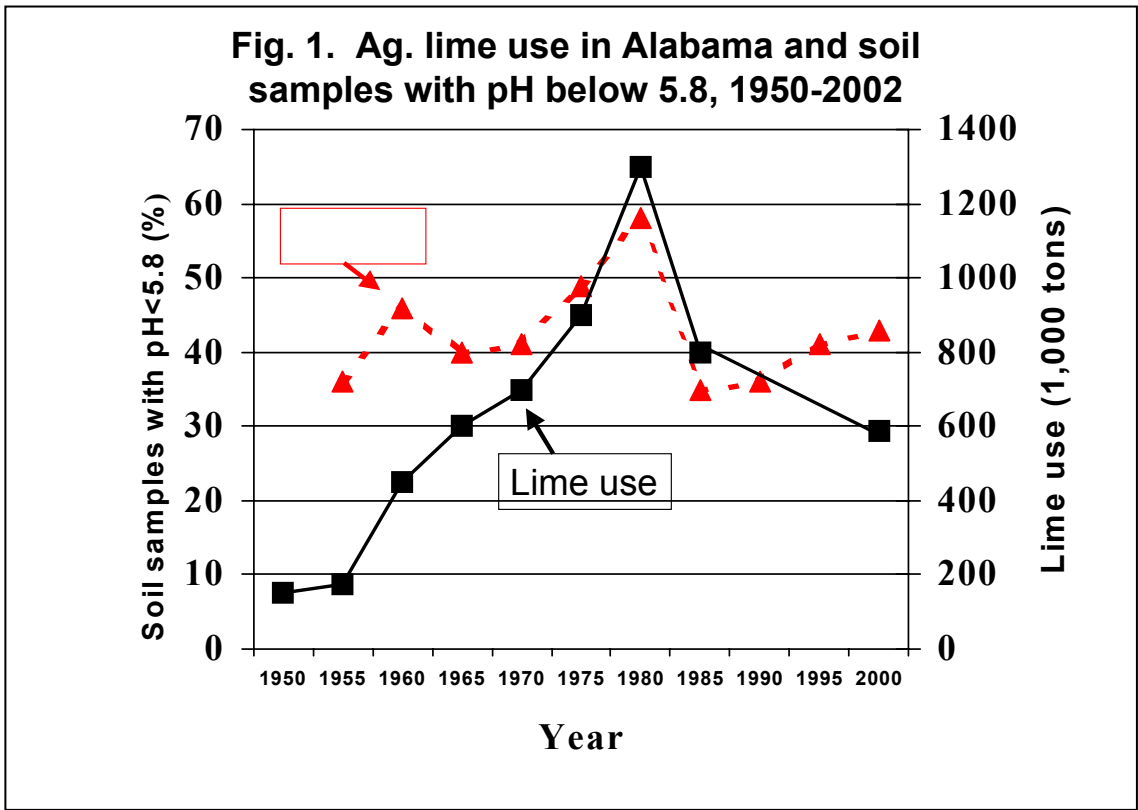


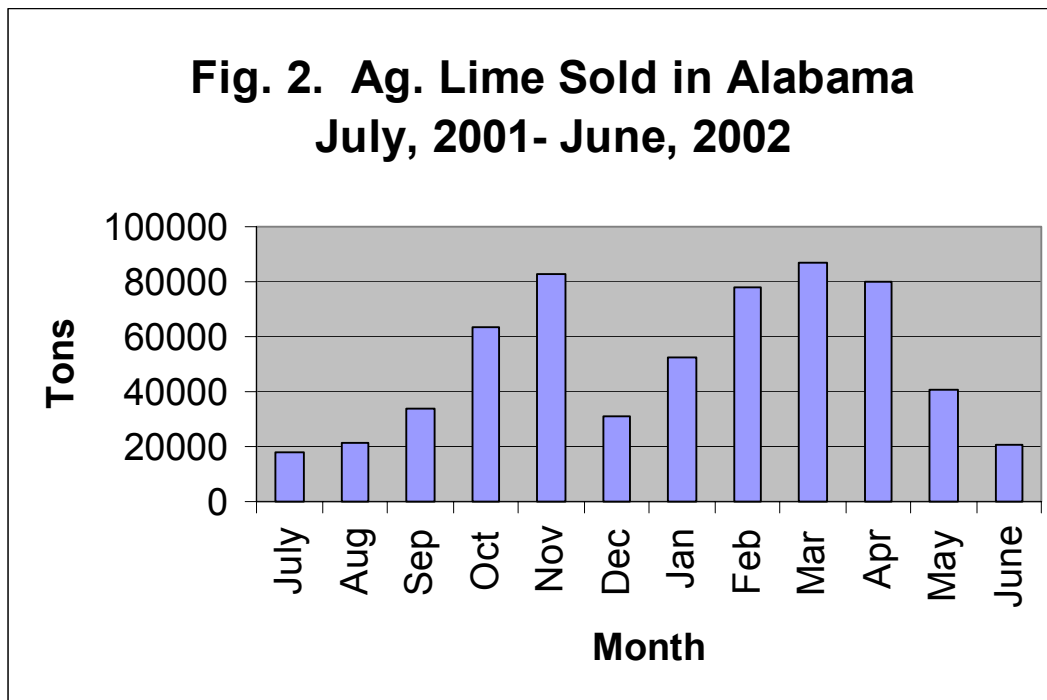
Table 1. Estimated limestone needed by crop in Alabama.

Crop	% of soil samples with pH<5.8	Estimated limestone needed for Alabama crop* (tons)
Corn	38	129,400
Cotton	25	224,000
Peanut	27	77,200
Soybean	35	100,000
Commercial vegetables	48	4,800
All forages including small grains for grain	55	3,300,000
Fruit and nut crops	46	?
Gardens, lawns & shrubs	44	?
ALL SAMPLES TESTED	43	3,845,400+

*Based upon actual planted acreage in 2000; forage acreage was estimated at 4.0 million acres; no acreage available for fruits and nuts and home grounds.

Until the late 1980s, the National Limestone Institute kept up with agricultural limestone use. However, this has not been done in many years. Information in Figure 1 came from a 1985 Extension Timely Information Sheet (T.I. S-3, "Lime Use in Alabama") plus recent information from the Alabama Department of Agriculture and

Industries (ADAI). The State of Alabama collects a tonnage tax on ground agricultural limestone and lime by-products used for agricultural purposes in Alabama. The most recent information available from ADAI indicates that a total of 545,400 tons were sold in Alabama in FY 2002. Limestone use reached a peak in 1978 at 1.28 million tons and has been generally declining as crop acreage has declined. (Fig. 1). As expected, most agricultural limestone is handled in the fall (October and November) and again the following spring (February, March, and April), but some is handled all year.



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