

Nov. 4, 2001

Alfalfa Could Pay for Farmland

Writer: Robert Burns (903) 834-6191, rd-burns@tamu.edu

Source: Dr. Vincent Haby (903) 834-6191, v-haby@tamu.edu

EAST TEXAS - Alfalfa, correctly managed, could pay for farmland, according to a soil scientist with the Texas Agricultural Experiment Station. For more than 10 years, Dr. Haby and a team of scientists with Texas A&M have been working to make alfalfa a viable crop for East Texas soil conditions. For the last two years, Haby has worked with farmers and ranchers in five counties to show alfalfa production can be profitable here.



Dr. Vincent Haby (right), soil scientist with the Texas A&M University Agricultural Research and Extension Center at Overton, talks with Craig Edwards, manager of the the 7P Ranch, Smith County, about his demonstration plot of alfalfa.
(Robert Burns photo)

In 2000, the seedling year and following Haby's recommendations, these ranchers harvested from a low of about 3.6 tons to nearly 4.5 tons of alfalfa dry matter per acre.

But the real proof is in economic analysis. The farmer's first year net income ranged from a low of \$258 to a high of \$397 per acre on the five ranches. These profits were based on alfalfa valued at \$135 per ton, and took into consideration production and establishment expenses.

"I know of no other agronomic forage crop in East Texas where the return can be as high as \$400 per acre," Haby said.

Alfalfa is not new to the South. Southern farmers grew alfalfa earlier in the past century. The onslaught of the alfalfa weevil and increasing soil acidity severely curtailed that production.

New, more environmentally friendly and effective pest control chemicals have made alfalfa production economically attractive. In East Texas and across the Coastal Plain states of the South, however, the acid soils still pose a hurdle to efficient production.

Dr. Haby warns that alfalfa production isn't for everyone. Success depends upon precise management, careful attention to site selection, proper liming, fertilizer application, and pest control. Also, even with the best manager, not every field in East Texas is a candidate for alfalfa production.

So, how do you determine if you can grow alfalfa on your ranch or farm? The answer is in soil testing, according to Haby. After selecting a well-drained soil, it is crucial to determine the existing pH of the proposed site and not just the pH of the top six inches of soil. Alfalfa roots are highly more sensitive to soil acidity at all depths.

As it is very difficult to change pH in depths below the six-inches of the soil, locating an existing site where the soil pH is 5.5 or above to four-feet deep can make a big difference in alfalfa production. When the soil pH drops below 5.5, aluminum in the soil becomes a big factor. Concentrations of soluble aluminum at levels greater than one part per million (1 ppm) can inhibit root growth and limit alfalfa yield.

"An aluminum level above 1 ppm in the 6 to 12-inch or 12 to 24-inch soil depth is justification for rejection of a site for alfalfa production unless the site can be irrigated to maintain plant-available water in the surface depth," Haby said. Dr. Haby recommends a soil be limed to pH 6.8 to 7.0 in the surface six inches of topsoil the winter prior to planting alfalfa the following fall. Consequently, the site should be selected and soil samples collected a year in advance of planting. Collect a representative soil sample by subsampling a field to the 6-inch depth in at least 15 locations and place all of these subsamples into a clean bucket. Thoroughly mix these subsamples in the bucket and take a representative sample to send to the laboratory for chemical analysis. Request standard analysis and analyze tests for boron.

When sampling for pH in the subsoil, take samples from one foot depths to 48 inches at no fewer than five locations across the field. Instruct the soil testing laboratory to test for soluble aluminum if the soil pH is below 5.5 in any of these depth samples.

If the proposed site meets the criteria for low aluminum, subsoil pH above 5.5, and the soil on the site is well drained, you should be able to grow alfalfa on this field, according to Dr. Haby's research. But don't run out and buy your seed yet. The recipe for successfully growing alfalfa doesn't stop at soil testing. The establishment costs alone may exceed \$300 per acre. There are important considerations as to type of limestone used and phosphate, K, and B levels are critical. "Farmers also must know what their market is going to be," Haby said.

Dr. Haby has prepared a fact sheet, "Requirements for Successful Alfalfa Establishment on Acid Soils." A more detailed description of the requirements for alfalfa production can be viewed at Dr. Haby's website, <http://overton.tamu.edu/soils> If you don't have Internet access, contact your local county extension office or send a request for an alfalfa fact sheet to Dr. Vincent Haby, P.O. Box 200, Overton TX 75684.