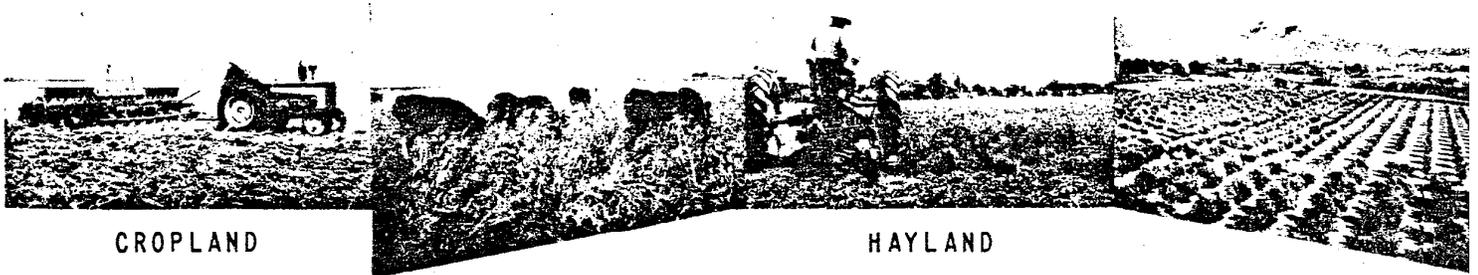


CONSERVATION AGRONOMY TECHNICAL NOTES

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NEW MEXICO

SOIL CONSERVATION SERVICE

AGRONOMY TECH NOTE NO. 37

RE: ALFALFA YIELDS AND FERTILIZERS

Attached is a recent news release from New Mexico State University which discusses yield increases on alfalfa from fertilizer applications.

Since many of you have cooperators that do not fertilize alfalfa, we felt you should be aware of these demonstrations conducted by the extension service.

Attachment

AC - 1
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Adjoining States - 1
Director, ECOL SCI, SCS, Washington, DC - 2

Fertilizers Increase Alfalfa
Yields In Three Counties

LAS CRUCES -- Farmers in Rio Arriba, Taos and Santa Fe counties are finding out first hand that chemical fertilizers can increase yields and put more money in their pockets.

Some 35 farmers, most of them alfalfa growers, are participating in the third year of a fertilizer demonstration program. It is coordinated by the New Mexico State University Cooperative Extension Service.

The Extension Service recently tabulated last season's results, which show significant yield increases in alfalfa, according to Alton Bailey, Extension crop demonstration specialist at New Mexico State University. Consequently, profits also increased.

Fourteen cooperators took part in the alfalfa fertilization program in Rio Arriba County last year. Their fertilized alfalfa yielded an average of 3.44 tons of hay per acre, compared to the unfertilized check plots which yielded 2.56 tons. That was a 34 percent increase in yield.

Farmers pay a partial cost for the fertilizer they receive for this educational program. But when profits are calculated, they are

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NEW MEXICO STATE UNIVERSITY

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based on what farmers would normally pay dealers for the fertilizer.

The Rio Arriba County cooperators as a group increased their gross income an average of \$70.40 an acre for a cost of \$33.16 an acre. They made \$2.12 for every dollar they invested.

Five Taos County farmers in 1983 participated in the alfalfa program. Yields of alfalfa hay are typically lower in Taos County because of higher elevations and a shorter growing season. Farmers in the county saw tremendous yield increases where they applied fertilizer.

These farmers harvested an average of .97 ton per acre from the fertilized plots as compared to only .28 ton per acre where they left their crops unfertilized. Their increase by using fertilizer was an impressive 246 percent.

The Taos County farmers increased their gross income an average of \$55.20 an acre for an investment of \$29.60 an acre. Their average return was \$1.86 for every dollar they invested.

Santa Fe County's 14 cooperators saw the most impressive dollar return in 1983. For every dollar they spent for fertilizer, they realized \$4.21. Their fertilized alfalfa acreage produced an average of 5.0 tons of hay per acre, and their unfertilized plots produced 4.40 tons per acre. Their increase by fertilizing was 36 percent. The Santa Fe County farmers' gross income was increased an average of \$126.40 per acre for an investment of \$30 an acre in fertilizer.

"We're aiming at the small growers with no experience or very

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little experience with chemical fertilizer use," Bailey said.

"Maybe they've never used a fertilizer or have only used manure. We are introducing the chemical fertilizer concept to them and at the same time introducing new fertilizer materials developed by TVA."

TVA stands for Tennessee Valley Authority, a U.S. Government funded organization which has developed most of the fertilizers available commercially. Research takes place at TVA's International Fertilizer Development Center in Muscle Shoals, Ala. After TVA tests its fertilizers, it seeks the help of universities such as NMSU and farmers who apply the materials in actual growing situations.

TVA fertilizers being used in New Mexico contain nitrogen and phosphorus. The fertilizer being applied to alfalfa is 11-53-0. It contains 11 percent nitrogen and 53 percent phosphorus. The nitrogen stimulates root growth. Because alfalfa is a high user of phosphorus, adding it helps increase yields.

In addition to a partial cost for the fertilizers they receive, farmers are responsible for shipping costs and a dealer handling charge. They agree to apply the fertilizer to most of their field and leave a small portion unfertilized.

County Extension agents and state Extension crop demonstration specialists collect information on crop yields from the farmers.

The program is scheduled to continue two more growing seasons beyond 1984. Ideally, all cooperators who start such a program continue for the full five years, but that doesn't always happen,

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Bailey said. And although it is hoped that every farmer participating will turn in his results for tabulation, some cooperators neglect the paperwork aspect of the project.

"But just because the guy didn't get his data to us, he knows in his own mind that he got an increase in yield. He goes into the local coffee shop and tells his neighbors. So there is an educational benefit," Bailey said.

Bailey also summarized the combined results of the first two years of the program -- 1982 and 1983. For the two years, growers in Rio Arriba County produced an average of 40 percent more alfalfa on fertilized fields than unfertilized acreage. Their return was \$2.04 for every dollar invested.

In Taos County, the increase was 116 percent, and farmers made \$2.10 for every dollar they spent.

Santa Fe County cooperators were especially pleased. As a group, they increased yield 32 percent and made \$3.26 for every dollar they invested over the two seasons.

In 1983, demonstrations were also conducted in the three counties on apples and native grasses. The fertilizer applied to those crops was 35-17-0, a fertilizer containing 35 percent nitrogen and 17 percent phosphorus.

Manuel Salazar in Rio Arriba County has an orchard of golden and red delicious, McIntosh and Rome apples. He observed that his fertilized trees and unfertilized trees alike produced 10 bushels per tree, but unfertilized trees produced smaller apples.

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He reported, however, an undesirable result: fertilized apples colored later than in unfertilized areas of the orchard. Early coloring and large size together would have been the best results.

Some growers in New Mexico apply Ethrel to hasten development of color and maturity, Bailey said.

Salazar said last year fertilizer materials were shipped later in the season from TVA than was ideal. He received the fertilizer in early April. This year he is taking part in the program again and received the fertilizer March 15. "He will get the full benefit of the fertilizer this year, and we will be looking closely at his results," Bailey said.

In Rio Arriba County, Alberto Terrazas, foreman of the Bill Mundy farm at Chama, reported increases in timothy hay yields. Fertilized acreage yielded 117 bales per acre, and unfertilized plots yielded 74 bales per acre. That was a substantial yield of 3.8 tons per acre for fertilized hay compared to 2.4 tons per acre where fertilizer was not applied.

Over all, Bailey said, the program has been successful in showing farmers that it can pay to fertilize. Many cooperators are telling their neighbors that an investment up front can reap handsome profits at harvest time.