

ALFALFA RENOVATION

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Abstract

A test was conducted to evaluate the effect that renovating a weak alfalfa stand had upon yields in one field in the Yuma Valley. Results indicated that yields were not significantly different in the renovated vs. the not renovated plots. Under the conditions present in this test, there appeared to be no yield advantage to renovation during the first year.

Introduction

Renovating or partially reseeding alfalfa to improve or extend the life of the stand is a common practice in Yuma County. The value of this practice is difficult to establish and will depend upon many factors including the number, age and vigor of the alfalfa crowns in the field, presence of weeds or diseases, soil type and drainage, variety characteristics and other factors. These factors may vary from field to field or in different locations within the same field. A natural reduction in stand begins after establishment and alfalfa can tolerate a substantial reduction in crowns before a yield loss is evident. This has raised some questions about the value of this practice.

Renovation can be confined to areas where summer scalding, disease, weeds, wheel traffic or compaction have weakened the stand or it can be done over entire fields. The common practice is to run a harrow over the areas to be renovated to reduce competition or toxicity from established plants and to create an adequate seedbed. The seed is normally planted with a grain drill.

Materials and Methods

This test was conducted to evaluate the effect that renovating a weak alfalfa stand had upon yield in one field in the Yuma Valley. The field was located at the Yuma Valley Agricultural Center and contained a two year old stand that had been weakened by summer scald and disease. The 8 acre field was divided into 8 equal borders, four of which were renovated and four were left alone. Renovation consisted of running a spike tooth harrow over the ground twice and reseeding with a grain drill at a rate of 25 lbs. per acre. This was done on November 6, 1990. Crown counts were made before and after renovation by using a 0.0001 acre grid and counting at 10 locations within each of the 8 borders. The average number of crowns before renovation was approximately 140,000 per acre, after renovation it was approximately 90,000 per acre. Yields were measured for 6 cuttings from March 4, 1991 to Sept. 3, 1991 by harvesting 5 subplots within each border. Subplot size was 0.0001 acre. the test was abandoned after the September cutting because of serious damage from whiteflies and disease.

Results

Table I

	<u>Yield (lbs/A)*</u>						<u>Total</u>
	<u>3-4</u>	<u>4-24</u>	<u>5-21</u>	<u>6-20</u>	<u>7-18</u>	<u>9-3</u>	<u>Tons/A</u>
Renovated	2010	1940	1710	2130	1630	1190	5.3
Not Renovated	2020	1970	1770	2360	1460	1190	5.4

* Average of 4 Replications

Production in the field where this test was conducted was significantly lower than the county average in most years because of soil compaction, disease and heavy whitefly damage. However, the effect of the renovation on yield should be representative of what would occur in other fields receiving similar treatment. The results presented in table 1 show that the alfalfa yields were not significantly different in the renovated vs. the not renovated plots. Under the conditions present in this test there appeared to be no yield advantage to renovation during this first year. Under other conditions the result might be different although this test indicates that some alfalfa renovation may be unproductive. It should be pointed out that there may be advantages to renovation other than increased yield. These include competition with weeds, which tend to grow where alfalfa crowns have died, or increased stand longevity.