



Colorado River Agronomy News

A Newsletter for clients of Stanworth Crop Consultants, Inc.

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Alfalfa Fertility Working Points

By Marcos Moore, Jr. CCA

There is a distinct difference between the nutritional management of alfalfa and just about any other crop grown in the desert southwest. There is a relationship between soil and plants. The study of this relationship is known as agronomy; furthermore, there is a specific need for the management of soil fertility and plant nutrition and one must bear in mind that they are separate, but yet intricate parts to a successful and efficient cropping system.

Unlike other crops, alfalfa tissue samples are not recommended for evaluating the nutritional status of the crop. Desert alfalfa has eight crops (cuttings) per year, which makes it more difficult to supplement nutrition based on tissue levels. With this in mind, it is recommended that soil be tested rather than tissue.

In the past, potassium nutrition has not been a common problem, however, due to continual mining of the soil, K levels are starting to drop in fields that have a long alfalfa history. It is important that P and K not be analyzed upon the same soil sample. Potassium should be analyzed on soil samples taken to the plow layer depth, phosphate should be taken at the 0-3 inch depth.

Stanworth Crop Consultants has preformed several replicated trials comparing 11-52-0 with

10-34-0. 10-34-0 contains a different form of phosphate (polyphosphate) than 11-52-0 (orthophosphate). 10-34-0 is more expensive than 11-52-0 per unit, but more agronomically efficient overall.

It is our opinion that 5.0 gallons of 10-34-0 is equivalent to 100 lbs. of 11-52-0. The benefits of polyphosphate is increased long term P availability in soils and low cost application: liquid form allows material to be applied with irrigation water, no spreading cost.

Stanworth Crop Consultants has an opportunity to compare many different growers with differing crop rotations and fertilizer programs. Some alfalfa fields have been on the same fertilizer program for many years, the P levels in the soil may be very high. Stanworth Crop Consultants' has clients who have not applied any phosphate fertilizer in the last three years due to high residual P levels in the soil. The cut back in fertilizer applications have *not* jeopardized crop yields or quality. Please bare in mind that these decisions were made on sound agronomic testing programs, and derived from impacts of market pressures. The goal is to optimize soil conditions in order to maximize yields.

When evaluating soil results for alfalfa, careful consideration has to be given to factors such as

soil type, recent fertilizer applications and cropping history of the field. Optimum P levels are 12-15 ppm to maintain good production. Levels higher than 15 ppm will not have noticeable benefits in the desert southwest. Also, when the soil saturation percentage is less than 40 (light soil texture), the soils should be analyzed for K. If soil potassium levels are less than 80 ppm, responses to potassium applications will be found. We recommend broadcast applications of 100-300 lbs/ac muriate of potash, depending upon soil test results. If soil K levels are high, then we recommend that K be tested at least every four years.

We can all remember days with better alfalfa hay prices. Some farmers are starting to cut back on fertilizers and other inputs of their alfalfa crop. If it is the intention of the farmer to stay in the alfalfa business, these practices could have grave consequences. The economic loss created by stretching irrigations, cutting insecticide or herbicides applications and foregoing fertilizer is large. If perennial crops such as alfalfa are damaged to conserve resources for the short term., long term consequences can ensue, including losses in yield and quality. If it is the intention to wait out the bad market, perhaps rotating to another crop would be best. However, those who have healthy hay, either in storage or in the field, will be the ones who will maximize the market potential.

Retail Fertilizer Prices Dollars per ton (USD)

		N
<u>UN-32</u>		
This Month		\$241.50
Last Month		N/A
Last Year		\$240.00
<u>NH3</u>		
This Month		\$412.00
Last Month		N/A
Last Year		\$415.00
<u>UREA</u>		
This Month		\$296.00
Last Month		N/A
Last Year		\$225.00
<u>34-0-0</u>		
This Month		\$255.00
Last Month		N/A
Last Year		\$240.00
<u>AN-20</u>		
This Month		\$202.50
Last Month		N/A
Last Year		\$200.00
<u>CAN-17</u>		
This Month		\$220.00
Last Month		N/A
Last Year		\$220.00

		P ₂ O ₅
<u>11-52-0</u>		
This Month		\$296.67
Last Month		N/A
Last Year		\$225.00
<u>0-45-0</u>		
This Month		N/A
Last Month		N/A
Last Year		\$225.00
<u>0-52-0</u>		
This Month		\$307.50
Last Month		N/A
Last Year		\$260.00
<u>10-34-0</u>		
This Month		\$272.50
Last Month		N/A
Last Year		\$290.00

		K ₂ O
<u>0-0-62</u>		
This Month		N/A
Last Month		N/A
Last Year		\$186.00
<u>0-0-50</u>		
This Month		N/A
Last Month		N/A
Last Year		\$165.00
<u>0-0-12</u>		
This Month		\$ 94.00
Last Month		N/A
Last Year		\$ 90.00

<u>Sulfuric Acid</u>		
This Month		\$153.33
Last Month		N/A
Last Year		\$180.00

Heat Units 55/86 Degrees F

	Jan 25 to Feb. 25	+/- days
<u>Palo Verde Valley</u>		
This Year	124.5	-13
Last Year	195.5	-3
Historical	218.0	0
<u>Yuma</u>		
This Year	134	-12
Last Year	225	-0.5
Historical	229	0
<u>Imperial</u>		
This Year	142.6	-11
Last Year	224.1	+5
Historical	221.0	0



**A Newsletter for clients of
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CROP FACTS

Alfalfa Nutrient Removal

<u>Nutrient</u>	<u>lbs/ton</u>	<u>lbs/10 ton</u>
N	56	560
P (P ₂ O ₅)	10	100
K (K ₂ O)	60	600

From Tisdale and Nelson, Soil Fertility and Fertilizers, 3rd ed. 1975

Production Required to achieve 10 tons/ac

<u>Cutting #</u>	<u>Production</u>
1	1.00
2	1.57
3	1.37
4	1.59
5	1.61
6	1.27
7	0.99
8	0.60

From in-house research done in the Palo Verde Valley. 1988

**Alfalfa Feed Quality Test Levels
100% dry matter basis**

	<u>Supreme</u>	<u>Premium</u>	<u>Good</u>	<u>Fair</u>	<u>low</u>
Protein#		>21.5	19.0-21.4	17.0-18.9	<17.0
ADF*	<27.0	27.1-29.0	29.1-32.0	32.1-37.0	>37.1
TDN (Ca ADF)		>60.0	57.7-60.0	54.4-57.6	<54.4

- *ADF is the primary analysis used in California to quantify feed value
- #Values from Dr. Juan N. Guerrero, U of C Extension, 1995

Proverbs 11:1 The Lord abhors dishonest scales, but accurate weights are his delight.