

# Central Arizona Alfalfa Production Overview

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**Abstract:** Central Arizona produces roughly 60,000 acres of alfalfa annually. The market is extremely diverse with market endpoints consisting of dairy, cattle on feed, horse and the mini-ranch component. Average annual production is 7-9 tons per acre with the majority of production occurring from March 1 through November 15. Approximately 480,000 tons are produced annually while another 500,000 tons are imported from non-local markets to meet dairy quality demands. In general, the market prices have been low with a mid-summer low of \$55.00 and a late fall high of \$100.00 for premium quality hay.

**Keywords:** market diversity, prices, horse, dairy, consumption, production, insects, weeds, variety, quality, economics

## Introduction

Alfalfa production in Central Arizona is a major cash crop ranking second in total acreage of roughly 60,000 acres preceded only by cotton. The marketplace is extremely variable with demand for premium quality hay far exceeding total supply. Central Arizona accounts for about 90,000 of the state's 96,000 head of dairy cows and a horse population in excess of 100,000. In addition, cattle on feed, (although in a decline) consist of roughly 58,000 on any given day throughout the year.

Central Arizona produces about 480,000 tons of alfalfa annually while importing from non-local markets an additional 500,000 tons annually primarily for the premium dairy quality market. Alfalfa prices have been in a slump in 1992 with a low of \$55.00/ton in mid-summer with a high of \$100.00/ton in late fall for premium quality hay.

## Production

**Yield:** Central Arizona production ranges from 7-9 tons per acre on a dry matter basis. The cutting period is from March 1 through November 15 with approximately 65% of total production coming off from March through mid-July. High summer temperatures result in significant yield declines from mid-July through mid-September. Cutting cycles vary from 21-32 days with the majority being in the 28-32 day schedule. Average stand life is from three to four years with significant reduction occurring where cutting intervals are reduced.

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**Pests:** The most significant and regional specific pest in Central Arizona is the stem nematode. The stem nematode presents the most difficulty in early spring. This pest is indigenous to the Salt River Valley but has been reported in other production areas in Arizona. Symptoms include shortened internodes, bunched growth characteristics near the crown, and retarded spring growth. As a result, stand life is decreased significantly. Unfortunately, production is retarded during the period where maximum potential exists for both tonnage and quality considerations.

Stem nematode control consists of resistant varieties, crop rotation with a greater than a two year alfalfa production interval. In addition, systemic insecticides can be used but in general are not due to feeding interval label restrictions.

Other pests which potentially present economic damage considerations include the spotted and blue alfalfa aphid, alfalfa weevil, beet armyworm, and the whitefly. Damage associated with the whitefly in 1992 was significant and is a relatively new alfalfa pest to deal with in Central Arizona. Unfortunately, costs and spray interval requirements to result in a reasonable suppression expectation are rather prohibitive with current economic returns on alfalfa.

Weed problems have seemed to increase in recent years. Nutsedge is by far the single largest weed infestation problem with the least control possibilities. In addition, broadleaf weeds can be a problem but are much less difficult to control effectively.

### Consumption

The Central Arizona market is large and extremely diversified. (Tables 1 and 2) The dairy and horse industries are extremely significant. Roughly 90,000 of Arizona's 96,000 dairy cows are located in Maricopa and Pinal County. In addition, replacement dairy heifers and calves number about 100,000 at any given time. Although the dairy industry is significant, approximately 80% of dairy alfalfa consumption is from the export or non-local market due to the premium quality hay requirements of the dairy industry. The 90,000 head of milk cows and roughly 100,000 replacement heifers and calves consume about 100,000 tons of the 407,000 ton baled hay consumption value. Local production accounts for about 20% of the dairy industry rations with the remainder imported. Approximately 100,000 tons (dry matter basis) are fed to the dairy cattle in the form of green chop. Green chop production is increasing at a rapid rate in Central Arizona.

Cattle on feed are decreasing in numbers but are still a significant component in alfalfa consumption. It is estimated that there are approximately 58,000 head of cattle on feed on any given day consuming conservatively 3 pounds per day accounting for 58,000 tons of local hay consumption annually.

A huge and likely conservatively estimated market is the horse industry. It is estimated that in excess of 100,000 horses are standing in Central Arizona. Hay consumption is about 1.5-2.0% of total bodyweight per day. Approximately 80% of horse hay intake is produced on the local market accounting for 220,000 tons per year local market consumption.

A market that is likely completely misunderstood and underestimated is the mini-ranch component identified as 1-10 acre farms. A consumption value cannot be estimated but certainly exists.

### Market

The market for alfalfa has been at best rather soft. Prices received in 1992 have ranged from a low of about \$55.00 to \$100.00. The low was reached in mid-summer with the high end experienced in late fall. Green chop prices have ranged from \$40.00 to \$60.00, during the same outlined period. The retail market has ranged from about \$60.00 to \$100.00. It is estimated that a break even price on a total cost basis is about \$77.00 in Central Arizona. As can be readily seen, during most of the year, prices received for the commodity were less than break even costs. (Table 3)

Table 1. Central Arizona Livestock (1992)

	Dairy Cows	Heifers and Calves (rep)	Feed Cattle	Horse	Mini Ranch
Maricopa Co	82,000	90,000	12,000	100,000+	?
Pinal Co	8,000	8,800	195,000		?
Arizona	94,000	100,000	306,000		?

Table 2. Central Arizona Alfalfa Consumption (Tons)

	Import	Local (1% of total)
<u>Dairy Cows</u>		
Hay	262,800	65,700 (14%)
Green Chop (DM)		98,550 (20%)
<u>Heifers and Calves (Dairy Replacements)</u>	144,248	36,062 (8%)
<u>Cattle on Feed</u>		58,035 (12%)
<u>Horse</u>	54,750	219,000 (46%)
Total	489,173	477,347

Total Local Production  $\approx$  480,000 Tons

**Table 3. Alfalfa Hay Market - Maricopa County**

Date 1992	Premium	Low (good)	Off Grade (fair)	Green Feed (standing)	Retail
March	85-90	80	70	50-60	100
April	85-90	-	50-65	50-60	95-100
May	85-90	80	45-65	50-60	90
June	55-65	-	40-45	50-55	70-80
July	55-65	-	35	50-55	65-80
August	55-65	-	35-40	30-40	60-65
September	55-70	-	35-50	40-55	60-75
October	75-95	-	35-45	50-60	-
November	95-115	-	40	60-65	-