

ALFALFA PRODUCTION IN THE COASTAL AREAS OF CALIFORNIA

Warren E. Bendixen¹

Alfalfa in the coastal areas has historically been associated with the dairy industry. In recent years, the number of dairies has decreased, and so has the alfalfa acreage. The shift away from dairies has resulted in an increased percentage of the alfalfa being grown in inland valleys, and in some cases on less productive soils. Other factors associated with the reduction in alfalfa acreage have been high land rent, competition for land with vegetables and the 5-year drought. The horse industry represents a large and increasing market for alfalfa hay in all of the southern coastal areas.

Acreage

The alfalfa acreage in all of the coastal counties has decreased in recent years. The current major production areas are Cuyama, King City, Paso Robles, and Santa Ynez. The Cuyama Valley has the largest acreage with approximately 60% of the 1990 Santa Barbara (4,011) and San Luis Obispo (4,200) Counties' acreage. The 1990 alfalfa acreage in San Diego, Orange and Ventura Counties was so low that the agricultural commissioner reports do not list alfalfa as a separate crop.

The alfalfa acreage trends in Santa Barbara, San Luis Obispo and Monterey Counties show a 65% reduction from 1965 - 1990. The alfalfa acreage in Santa Barbara County was 10,200 acres in 1965, compared to 4,011 in 1990. Graph No. 1 shows this annual acreage trend. The acreage in San Luis Obispo was 12,900 in 1965, compared to 4,200 acreage in 1990. Monterey County had 9,000 acreages of alfalfa in 1965, compared to 2,970 acres in 1990.

Soil Types

Alfalfa is grown on a wide range of soil types from loamy sand to clay loams. Generally, the soils do not limit production, except when subsurface claypans and hardpans restrict root and water penetration.

Soil Fertility

Alfalfa requires large amounts of plant nutrients. The soil may supply all or a portion of these nutrients. Soil and plant analyses are useful in determining phosphorous and potassium levels, when standard procedures are used in sampling, analyzing and interpreting the results.

¹Farm Advisor, University of California
Cooperative Extension, Santa Barbara County

Phosphorous

Phosphorous is the fertilizer most likely to be deficient in coastal alfalfa fields. An alfalfa yield of 8.0 tons per acre removes approximately 100 pounds of P_2O_5 . On deficient soils applications of 60-150 pounds of P_2O_5 are made in the fall or early winter.

Potassium

Potassium deficiencies have occurred in the Santa Maria and Santa Ynez areas. Applications of 80-200 pounds of K_2O per acre should be applied to deficient areas.

Potassium deficiency symptoms on alfalfa is a good indicator of soil potassium deficiencies. The symptoms occur as small white dots, appearing first on the margin of the younger leaves, and later appearing on most of the plant. Severely deficient plants have yellow marginal burn areas, which later encompass the whole leaf.

Crop rotations

Alfalfa is grown principally in rotation with corn, dry beans, tomatoes, carrots, small grains, and sugar beets.

Varieties - dormancy groups

A number of varieties are grown in the area. Non-winter dormant varieties are recommended near the coast with moderately non-dormant and intermediate dormant varieties in the inland valleys. Proper variety selection should be based on a choice of the resistance to the insects and diseases.

Pest Management

Diseases

The cool, moist climatic conditions in the coastal areas allow fungus diseases to defoliate or severely damage some of the leaves. Common leaf spot, stemphylium leaf spot, cencospora leaf spot, and downy mildew, all affect the alfalfa in this area. Alfalfa yields are reduced due to leaf droppage and stunted growth.

Insects

The Egyptian alfalfa weevil is the most serious insect problem. Most fields are sprayed in February or March to control this pest.

Nematodes

There are several nematodes which damage alfalfa in this area. The alfalfa stem nematode is the most serious. Alfalfa yields may be severely reduced and stands killed in 1-2 years

unless resistant varieties are grown. This nematode spreads rapidly with irrigation water and harvesting machinery.

The root-knot nematode attacks the alfalfa roots of susceptible varieties, particularly in sandy soils.

Rodents

In many fields, gophers are the major problem reducing alfalfa yields.

Irrigation

Almost all of the water comes from wells in the coastal and inland valleys. The pumping depth varies from 60 - 400 feet. Hand-move and wheel-line sprinkler systems are the predominant irrigation method. Most of the alfalfa is grown on sloping or undulating fields.

Irrigation costs range from 25-40% of the annual production costs. The cost of power to pump water ranges from \$35.00-\$100.00 per acre-foot of water.

One grower in the Cuyama valley reported a power cost of \$49.00 per acre-foot of water for a 200 feet lift. This was a 15% increase in power cost from 1991 over 1990. Another grower reported water costs of \$70.00 per acre-foot for a 200 foot lift.

Because of the higher power costs, growers need to obtain water application efficiencies of 70-80%. Wells and sprinkler systems must be checked and repaired. Irrigation should be made during non-peak power periods for cheaper power rates.

Evapotranspiration rates vary significantly from the coast to inland valleys. Water application rates on alfalfa near Santa Maria range from 30" - 40", compared to 48" - 60" in the Cuyama Valley.

Yields

Alfalfa yields on a per acre basis have fluctuated over the past 25 years without following an upward trend. This is concerning because new varieties and improved grower practices have the potential for higher yields. The yield per acre in Santa Barbara County from 1965-90 (graph No. 2) shows yields decreased over the past 4 years. These 4 years lower yields are principally due to the following three factors: Water applications were below optimum; during the drought alfalfa acreage has shifted from coastal to inland valleys; and a higher percentage of the alfalfa acreage was grown on poorer soils.

The alfalfa grown on dairy farms is principally harvested as green crop hay with 7 - 8 cuttings per year. When the hay is harvested as baled hay, most of the growers get 5 - 7 cuttings per year.

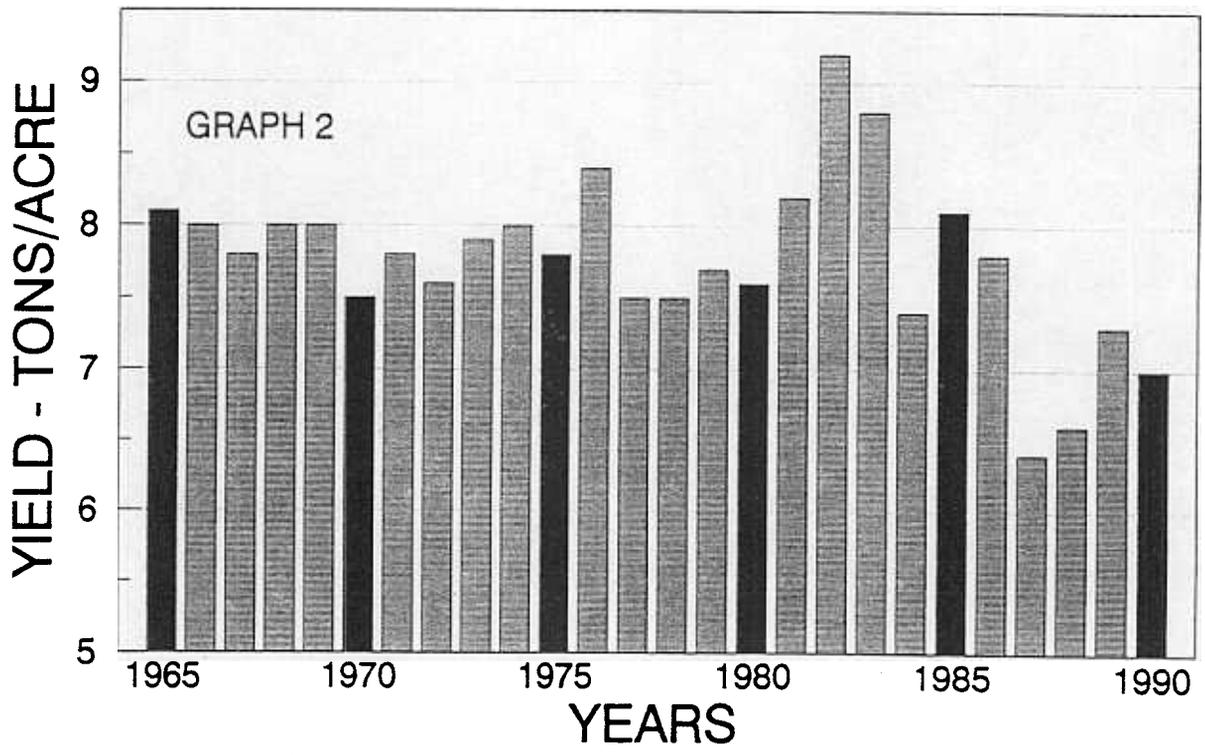
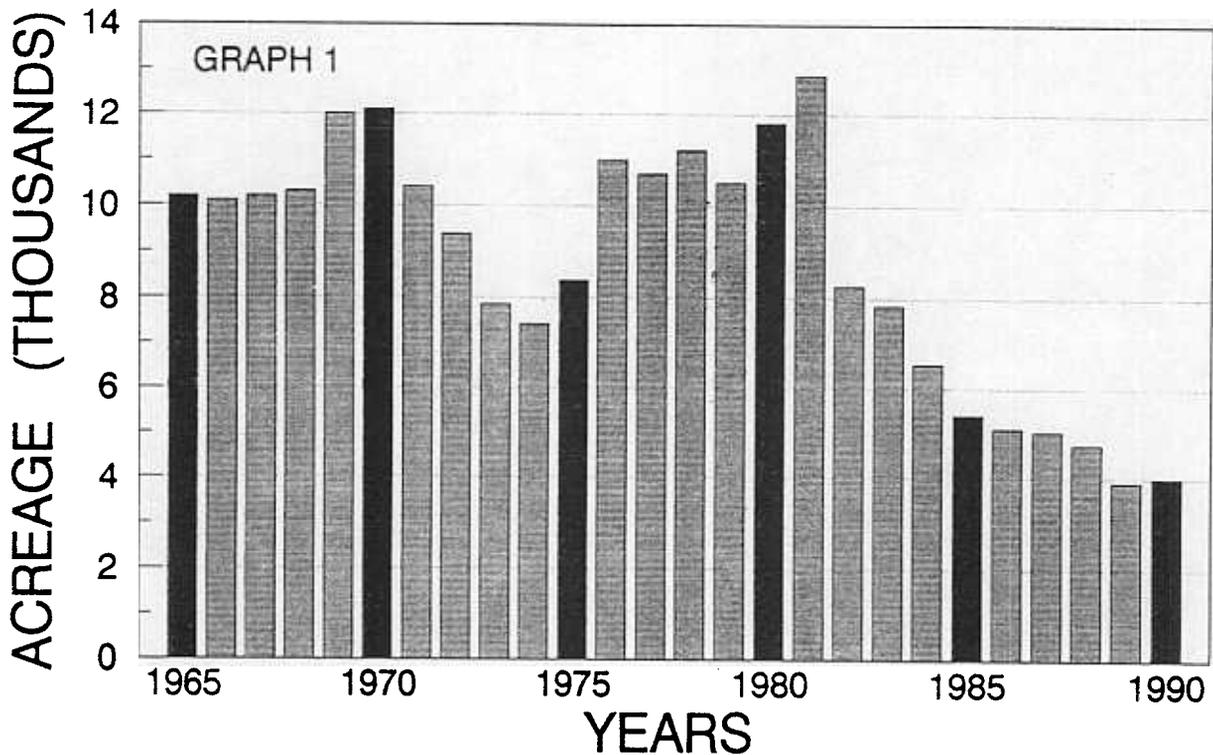
Market

There has been a significant shift in the coastal alfalfa market from the dairy to the horse industry. Growers in the Cuyama and Santa Ynez Valleys estimate that 65-75% of the alfalfa hay is sold to the horse industry.

Because of the horse industry, growers have established a good market for oat-alfalfa hay. Growers in the Santa Ynez area plant oats in the alfalfa during December prior to the last year of the alfalfa stand. This has been a profitable practice because hay yields are higher, and it eliminates the winter herbicide practice.

Growers in the coastal areas have remained competitive in the hay market through speciality markets and savings on transportation cost. Some growers roadside, or put the hay in barns and sell the hay by the bale on a year-round basis.

SANTA BARBARA COUNTY



SB CO. AGRICULTURAL DEPT. ANNUAL CROP REPORT