

## OVERVIEW OF ALFALFA IN THE SAN JOAQUIN VALLEY

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### Climate

The climate of the San Joaquin Valley is Mediterranean, with hot dry summers and rainy, cool winters. Snow is extremely rare on the valley floor. It is typical to get a great deal of dense fog in the winter time. Rainfall ranges from about 17 inches in San Joaquin County to 5 inches in Kern. In the northernmost part of the valley there is some influence from cool ocean breezes which come in through the Carquinez straits most summer evenings and cool the night temperatures as far as the southern border of Stanislaus County. South of Merced, summers are hotter and cotton greatly influences crop selection.

Alfalfa is planted anytime from the middle of September to March. Most growers depend on rainfall or, to a lesser extent, preirrigation, to germinate the seed. Alfalfa on the sandy soils near Turlock is usually flood irrigated up in the early fall.

### Varieties and cutting schedules

Dormancy of alfalfa varieties varies from north to south. The further south you go, the more nondormant the varieties become. Very non dormant varieties are common in Kern, with a gradual shift to semi- or intermediate dormancy in San Joaquin County. From about Merced northward, growers on heavier soil tend to plant more semi-dormant varieties because there is enough rain to prevent getting on the ground in the late fall and early spring.

The number of cuttings as hay is fairly similar throughout the valley, sometimes with a little longer season in south. Six or seven is normal everywhere although eight is not at all uncommon in Kern and Tulare or on the lighter soils in Merced and Stanislaus counties. Alfalfa in the extreme southern part of the valley is very commonly sheeped off during the winter.

Most growers prefer to cut at 27-28 days in the south and closer to 30 days in the north, although this often varies due to the practicalities of either managing large acreages or being at the mercy of custom harvesters. Spring and fall intervals are often stretched to 30 or 31 days or more. Growers needing very high test hay for feeding dairy cows will often cut at 26 or 27 days.

The cutting season starts in April and continues until October. Warmer areas in the south may start a little earlier and/or finish a little later. Yields average 7.5 tons in the north, 9 tons in the south. In the Fresno area good growers commonly expect to get 10-12 tons per acre.

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In areas where cotton is the main crop, growers tend to keep stands only about three years. Where cotton or vegetables are not grown, growers will keep a stand in as long as they can, but few stands will remain productive more than four years.

### **Pests**

Although there are a great many potential disease and insect problems on alfalfa in the San Joaquin Valley, most can be controlled by careful management and by planting resistant varieties. Many diseases and insects are present but are tolerated without specific treatment. Most fields are sprayed in the spring for Egyptian Alfalfa Weevil and occasionally for aphids. Most fields also are treated with some sort of winter weed control material. Root knot nematode can be a severe problem on light soils but no pesticides are applied to control it. Verticillium wilt has not been a problem in the valley.

### **Irrigation methods**

Most all alfalfa in the San Joaquin Valley is flood irrigated in border checks. Most is in some sort of an irrigation district, but the amount of water from the districts varies and most growers pump groundwater to supplement the district water. Only in parts of Stanislaus, San Joaquin and Merced counties is district water usually sufficient to meet all of the crop needs. There are a few areas in Kern, Madera and San Joaquin counties which always rely solely on groundwater pumping.

Only in Madera and Kern counties are there any sizable acreages irrigated with sprinklers. Most other counties have none or only a couple alfalfa growers using sprinklers.

Although costs for water used on alfalfa range from less than \$2 to over \$50 per acre foot, the average water cost is surprisingly uniform with most growers paying between \$20 and \$30 per acre foot with an average of \$25 for district water and maybe a few dollars more for pumped water. When water costs get too high, alfalfa is not grown. Water costs in the southern part of the valley tend to range a little higher, while in some areas of Stanislaus, Merced and San Joaquin counties water is in the \$3 to \$15 per acre foot range.

### **Alfalfa directly associated with dairies**

Throughout the valley, there is a huge alfalfa production system associated with dairies where alfalfa is grown either by the dairyman or by a neighbor. Most valley counties have sizable dairy associated acreages except Kern, Madera, and San Joaquin. These are nearly always concentrated on the sandy loam soils on the east side of Stanislaus, Merced, Fresno, Tulare and part of Kings counties. Dairy-associated alfalfa occurs commonly on heavier soils only in Merced county, where dairies are more or less everywhere.

Because this alfalfa is grown either on or next to the dairy, hauls are short, and hay is often stacked in the barn directly from the field. Practically all hay is baled in conventional bales. There are less than a dozen big square or large round baling operations in the entire valley. Although a small proportion of the total, alfalfa is often green chopped, ensiled in bags or made into haylage in all of the dairy areas. This is most common in spring and fall, although some fields are harvested as silage all year.

In the dairy areas, alfalfa is nearly always rotated with corn silage and winter forage. South of Merced, cotton is often a part of the rotation. Depending on the region, blackeyes, wheat or sugar beets will very occasionally enter the rotation.

#### **Alfalfa not directly associated with dairies**

In addition to the alfalfa grown in close proximity to and in association with dairies, there are broad regions of usually large scale commercial hay production which may produce for dairies, but which do not green chop or retrieve directly to the dairy. In general, alfalfa not grown in association with dairies is on heavier soils and often on larger acreages.

Moving from north to south, there is a band of alfalfa production along the west side of the valley from Stockton to Newman. From Newman south to around Los Banos there is hay on heavy ground associated with the dairies. Where water becomes very expensive on the west side of Fresno county, alfalfa hay is not usually grown, although this is, along with parts of Kings and Kern counties, the main area in the state for alfalfa seed production. Except for an occasional seed producer who may overseed an old seed field to turn it into a hay field, cotton and vegetables are the main crops in these areas and alfalfa, if it is grown at all, is used as one of several rotation crops.

Alfalfa is grown extensively in the cooler central trough area of Kern county where the climate is unfavorable for citrus or vegetables. In Madera and Merced counties most of the open ground is eventually rotated into alfalfa at some point, although here too, cotton is the main crop.

Essentially all of the alfalfa production not associated with dairies is baled conventionally. Exceptions would be an occasional cubing operation that sells to the horse industry or for export.

Most alfalfa produced in the San Joaquin valley is sold to dairies within the valley except for a very little that is exported overseas, baled hay and some cubes for horse stables and feed stores, a very small amount to beef, and hay from Kern county that goes south to the Southern California dairies and horse industry.