

APPROACHES TO BREAKING YIELD AND QUALITY BARRIERS IN CALIFORNIA - Low Desert Region

Brent Grizzle,
John Grizzle Farming
1395 Bonds Corner Road
Holtville, CA 92250

INTRODUCTION

The Imperial Valley is a phenomenal agricultural region of California. It extends from the border of Mexico up to the Salton Sea, about 60 miles N-S by 35 miles E-W, and is at about 33° N latitude. The soils are largely alluvial soil, products of multiple floods of the Colorado River over geologic time. Some have joked that the Grand Canyon ended up in the Imperial Valley. The Imperial Valley is at the confluence of a number of geological faults, and much of the valley is at, or below sea level, due to seismic activity. Agriculture and human settlements were made possible by Colorado River irrigation water, and today The Imperial Valley is a major agricultural zone. The drainage from the Imperial Valley ends up in the Salton Sea, which is a land-locked body of salt water from irrigation, and has become a contentious issue in recent years. Alfalfa is the primary crop in the Imperial Valley, occupying from 40% to 60% of the acreage. The Imperial Valley produces about 24% of the state's alfalfa, with a relatively small number of growers. Alfalfa is rotated with wheat, sugar beets, winter vegetable crops, and sudangrass or Bermuda grass hay, most of which is exported to Japan. Many growers feel that the Imperial Valley is an ideal place to grow alfalfa for a number of reasons including a reliable water supply, reasonable land prices, a large labor pool from nearby Mexico, and a year-round growing season. Brent Grizzle, representing John Grizzle Farming of Holtville, CA, was interviewed by Dan Putnam, UC Davis Cooperative Extension Forage Specialist, for these Proceedings.

DESCRIPTION OF FARMING OPERATION

Briefly describe your farming operation (i.e. location, crops grown, role of alfalfa in farming operation, approximate alfalfa acreage). Our ranch is located in Holtville, CA, about 5 miles from the Mexican border. The ranch was started by my father, John, about 35-years ago, and is a family farming operation run by my father, myself, and my brother Kevin. It consists of approximately 6,000 acres under cultivation, 4,000 of which is in alfalfa. We also grow sudangrass, wheat, bermuda grass, and vegetables including lettuce, cauliflower and broccoli. We supply our own feedlot with roughage, including alfalfa and the coarser forages. All of the top quality hay products are sold, and we save the coarser forages for our own use. The first-cutting sudan and bermuda go for export, and the later cuttings we use ourselves. We keep our alfalfa stands in about 4 years. Since alfalfa is our primary crop, we are always looking for other crops to rotate with the alfalfa, including winter vegetables, but can grow only a limited number of acres of these. We have good access to highways and proximity to markets, including the Chino valley, near LA, and the horse ranches of Southern California.

We have about 40 employees, excluding the feeding operation. In the Imperial Valley, we have a beautiful gravity-flow irrigation system, so no pumping is required. We simply order the water on the telephone one day before we need it. Sometimes they make us wait an extra day before we receive it. Cost of irrigation water, equipment and labor is irrigation management are definitely an important cost factor, though the water itself is about 12\$/acre foot. We have a crew of 10 just to do the irrigation.

MOST IMPORTANT FACTORS

From your experience, what are the two most important factors used to maximize yields or profits? (please consider such issues as stand establishment, variety selection, pest management, irrigation, or any other factors). I'd say that the two most important things are 1) maximizing the stand life and 2) keeping the fields clean through an effective weed control program. Probably the most critical factor for stand life is summer irrigation scheduling. In August and September, it is very easy to scald the fields and kill out large portions of the stand. Scald is damage or death of plants due to standing water, especially at high temperatures.

One of our key management tools is that we laser-level every field between the borders before we plant. This has several advantages: avoiding low spots, resulting in lower levels of scalding, and we also avoid some weed problems this way. We have to maintain the integrity of the borders so the irrigation sets will be completed in a timely manner. About 25% of our alfalfa is grown on beds which are on 40" centers, with 8" deep furrows. This is primarily on the heavier soils. We've had to modify the equipment so that it runs in the furrows, which has the added benefit of avoiding traffic on the plants. It is somewhat extra work to prepare the headland areas on bedded alfalfa. On those soils, a "flat planted" stand will simply not survive due to salting, slow drainage, and scald. During establishment, we flood up most of our fields, except the bedded alfalfa, which is sprinkled. Our program in the past has been to "corrugate plant" (3" high), but this year we are using a grain drill, since we have laser leveled everything.

Our herbicide program is invaluable for our established stands. We apply 20 lbs of trifluralin granules in the spring before the weather warms up (Jan-Feb). We apply Balan preplant, and Pursuit as a tool post-establishment tool. Major weeds include shepherds purse, swine cress, and nutgrass. Our herbicide program is primarily to maintain high forage quality for our buyers.

CUTTING SCHEDULES & MARKETS

What system do you use to schedule harvests (i.e. when the neighbor starts cutting, calendar basis, growth stage of the alfalfa, etc.)? Do you aim to maximize yield or maximize quality? What is your desired market (i.e. dairy market, horse market, or stock hay market). Is the market the same for all cuttings? Irrigation schedules, and the drying characteristics of the field determine the harvesting schedule. The irrigation schedule determines the harvesting, and we never let the equipment determining the irrigation. We make sure that we put water on the crop when the plants need it. We walk the fields to determine irrigation needs, largely through experience. A typical schedule in the summer is two irrigations between cuttings, which allows about a 30 day cutting schedule. Cure time from cutting to baling in the summer is about 3 days,

and in the winter is up to two weeks. There is a fine balance between yield and quality. Obviously, cutting sooner would yield a finer-stemmed product which would be desirable for the horse and dairy market, but the benefit often does not outweigh the loss in tonnage. We try harder in the summer to maintain high quality horse hay with fine stems. If growers don't pay close attention to forage quality in the summer, it can very rapidly deteriorate in the Imperial Valley.

We normally sell our first three cuttings (Feb, March, April), to dairies in the Chino area, near L.A. However, recently we have been selling more hay to the Tulare milkshed in the San Joaquin Valley. Then, in May, we switch our production to the horse market. This type of hay is different, requires a better cure, meaning the sap content of the stems must be dryer. Making horse hay is an art, because they want the hay to be soft, but yet they want the hay to be quite dry, with full leaf pattern. In the horse market, fine stems are important. Color is often the most important factor, but perhaps this is more to satisfy the horse owner than the horse. For the past several years, the fall cuttings in Imperial have been low quality due to whitefly damage, and a dry down process, which has been adapted by growers. We often find it's better to quit watering than to try to fight the white fly. September-October cuttings have been low quality and low yielding, so this hay ends up in the drycow market, or for out-of-production cows. Sheep grazing is very common in the winter in The Imperial Valley, which helps avoid curing problems for hay produced in the winter, but the negative side is compaction, and a risk of stand damage if animals are not removed after a rain. We take one or two harvests this way normally in November through January.

HAY TESTING AND MARKETING

Do you have a lab analyze your hay prior to selling it? How important is the lab test to the marketing of your hay? We don't test the hay ourselves, that is usually up to the broker. This method of marketing is becoming more predominant, especially for Central California sales. In our operation, we prefer not to test, because it conflicts with growing for maximum yield. Hay cut earlier in its maturity will test higher than hay in the bloom stage, but we would get lower yields when cutting earlier. Often, from our perspective, the lab test is used as a hammer to reduce the price of the hay. Lab tests should reward high quality hay as much as it penalizes low quality hay, but that often doesn't happen. We enjoy the fact that Imperial Valley brokers are so aggressive that they will buy hay on appearance and move it the next day. So hay tests have not been an important aspect of our marketing practices.

PEST CONTROL

What are your most important pest control problems and how do you address them? Whitefly is unquestionably our biggest problem in alfalfa in the Imperial Valley. Although whitefly probably prefers other plants, such as the vegetable crops, alfalfa is definitely affected by it. I feel that in comparison to 5 years ago, we probably lose a complete cutting due to white fly, which is about 10% of our yearly production. In addition, infested hay develops a 'sooty mold' due to the sugary 'honeydew' of the insects, and the hay is undesirable from a marketing standpoint. The numbers of white flies are so high, and they can come in easily from neighboring fields, so we

are not able to spray for them. This is a problem for the whole valley. The value of vegetable crops justifies whitefly control, but the value of the hay does not. We feel the only option is to dry down our alfalfa in August-September, until the weather breaks and the whitefly population goes down. Aphid is a big problem in the spring. We run ground sprayers ourselves and avoid air application charges. Weevils are a problem in the winter or early spring. Worms sometime become a problem in the summer time. I've already emphasized the importance of weed control.

HARVESTING METHODS

Some loss in forage quality during harvest operations is unavoidable. However, are there any special harvesting techniques you employ or areas you pay particular attention to in order to minimize quality losses of the hay through the harvesting process? For our area, we swath in the daytime, then rake in the early morning with sufficient moisture to avoid shatter. Usually, in the Imperial Valley, the humidity is low enough so that we have to wait for significant moisture to return in the evening. We usually get low leaf loss with this method, but sometimes in June and July we have to wait a week or two for humidity to return to bale successfully. Sometimes if we don't wait for humidity, it can be a complete loss of quality due to leaf shatter, and the hay is unacceptable to our buyers. There is no rule of thumb to know whether we can bale in the evening or in the early morning, we have to check each field. We use mostly small balers, and have one big baler for our own feedlot for grinding. The horse retail bales have to be generally 100 lbs each compared with the dairy bales, which are 130-140 lbs. This makes our baling more complicated, since each operator must monitor the weight constantly. We use a side-delivery baler (Freeman model 330), and we roadside everything. On our operation, we have barn storage facility, so that much of our horse hay can be sold throughout the winter. This has been quite cost-effective on our ranch. It allows us to be a year-round supplier to the horse market. All of it moves off the ranch in semi-tractor trailers throughout the year.

OTHER IMPORTANT FACTORS

Are there any other important factors to maximizing yield, quality, or profitability on your ranch? High quality equipment operators are important, so we try to find good quality people and treat them well, and keep them on-board year-round. People are an important part of our operation.