

DEL BOSQUE FARMS

Stewardship Profiles in California Agriculture
Environmental Leadership with Water Efficiency and Nutrient Management

Joe Del Bosque's Mexican-born parents were migrant farm workers in the 1930s and 1940s. In the 1950s, his father Jose landed a permanent job as a cantaloupe grower, and Del Bosque was raised on the farm, where he started working at age nine. When he started his own career in agriculture, Del Bosque functioned as a custom farmer, running farming operations for others. In 1985, he established his own farm. Today, Del Bosque's Firebaugh-based operation spans 2,000 acres, about half of which are leased. He grows almonds, cantaloupes, honeydew melons, asparagus, cherries and tomatoes, 300 acres of which are organic.

PROBLEM

Faced with the drought and rising water costs, Del Bosque was compelled to reduce water usage on the farm.

SOLUTION IMPLEMENTATION AND MANAGEMENT

Del Bosque Farms began transitioning to drip irrigation in the 1990s. Along with drip, the Del Bosque installed sensors to assess soil moisture. "We have sophisticated sensors in the soil that are reading the moisture levels 24-7," said Del Bosque. "We upload all the data into a computer. We know how much water our drip system puts out, so we know exactly how long we need to run that system to meet the [crop's] water requirements and nothing more. Nothing is wasted."

Del Bosque Farms has also improved its fertilizer efficiency by injecting fertilizer through its drip irrigation system. "Our fertilizer is put on very uniformly and exactly where we need it. It isn't put in the soil some place where it can leach out. We are putting it right into the root system," says Del Bosque.

ACHIEVEMENTS

- Increased crop yield by 35%
- Decreased water usage by 30%



"We have to put a face for agriculture out there, so that the public can see that we are people. That we are family farmers."

-Joe Del Bosque

He added that Del Bosque Farms can also run some of its pesticides through the fertigation system, which allows him to avoid spraying pesticides on the surface. Del Bosque carefully selects the right pesticides for his purposes and then minimizes their use. “We are looking at the balance of pests and beneficial insects in the orchard,” said Del Bosque. “When it is tipped in favor of the pest, we are looking for materials that are less harmful to our friends, the beneficial insects. We don’t go in there with the intent of wiping everything out.”

In order to attract beneficial insects, Del Bosque Farms has planted strips of clover, sunflowers and other flowering plants between plantings of organic melons.

Del Bosque has transitioned to higher-value crops, specifically almonds, cherries and tomatoes, and has fallowed approximately 40 percent of his ground due to the drought and the rising price of water. He estimates that the cost of water is ten times more expensive than it was eight years ago. “We are having to shift away from lower-value crops because we can’t afford the high cost of water,” said Del Bosque. “My farm is only one year away from completely coming to a stop. It is not because it is not a good farm or because we have bad markets or diseases or pests. It is because the minute you cut off the water, you cut off the crops. We have everything going for us except the water.”

For its almond, asparagus, and cherry crops, Del Bosque Farms has implemented no-till farming practices, which increase water retention, soil organic matter, and fertility. Not having to till some crops has also cut back on Del Bosque Farms’ use of diesel fuel. “Ecologically, we are doing better for our soil and air quality by going no-till,” said Del Bosque. “It has been very successful because it has been more efficient, and we have produced higher yields. We use less water, less chemicals as well as less tillage.”

CHALLENGES/OBSTACLES OVERCOME

Once Del Bosque shifted to buried drip irrigation, he couldn’t tell exactly where the drip irrigation was located. According to Del Bosque, that inhibited him from tilling in a precise fashion. To overcome that problem, he switched to GPS-guided tractors in the early 2000s. “The first systems cost over \$40,000 a tractor. As time went along, they became a little cheaper, and we absolutely had to have it with the buried drip irrigation,” said Del Bosque.

STEWARDSHIP PRACTICES



Water Efficiency



Nutrient Management



PROJECT PARTNERS

- Sustainable Farm Project
- UC Cooperative Extension

The lack of an adequate and reliable water supply is an ongoing obstacle. Del Bosque pointed to regulatory matters disrupting the supply of water to his farm and the drought has severely imperiling his operation. He said, “The only way I am going to be in business next year is if we have an extremely wet year or our agencies are able to capture and get water to us. If they don’t capture that water for us, we are out of business.”

MEASURING SUCCESS

Comparing his cantaloupe operation today to the mid-1980s, Del Bosque reported that crop production has jumped 35 percent while water usage has dipped 30 percent. “We have been able to adapt to dealing with less water and less reliable water. We have learned to grow these crops with fewer inputs and also, I think, with environmentally better systems,” said Del Bosque. Del Bosque measures the water in the soil with neutron probes. Currently, there is at least one neutron probe per field. In terms of pest control, Del Bosque continued, “We have learned that we can have better control using biological systems of pest control.”

Del Bosque believes technology can be a farmer's friend. “You have to be very open-minded about technology and actually make the effort to learn more about new methods. I am always open to that. I was never fixed in my ways,” he says. Del Bosque is not only referring to technology on the field, but social media platforms like Facebook and Twitter that spread the message about the farm’s product and sustainability initiatives. He said, “We have to put a face for agricultural out there, so that the public can see that we are people. We are family farmers. We are not faceless corporations. We are people running a business who have employees that we care about. We are out in field in the heat and the dust everyday caring for crops. We are not destroying the environment.”

For more information about the stewardship practices discussed in this profile, please contact the farmer directly. You can reach Joe Del Bosque by phone at (209) 364-6428 or by email to: joe@delbosquefarms.com



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