

STRAUS FAMILY CREAMERY

Marshall, CA



Photo credit: Straus Family Creamery

WATER RECYCLING
NO-TILL PLANTING
COMPOST

Albert Straus

With a focus on the future, Albert Straus, owner of Straus Family Creamery, is continuing the legacy of the 660-acre dairy farm his father started in 1941. The Marin County dairy is located in Marshall, CA, on the rolling hills next to Tomales Bay. After growing up on the farm and working alongside his father, Albert decided to dedicate himself to the survival of the dairy. He received his dairy science degree from Cal Poly in 1977 and returned home to work with his father. The next step was to figure out how to ensure the future viability of the dairy.

Water availability and runoff were perhaps the most significant issues affecting the future viability of the farm. “Water is a precious resource for us... I don’t think that we’ve had an abundant source in my lifetime. We live on Tomales Bay, a big salted water body, but there is very little fresh water. There is no water table. We do not have water to use to irrigate the land other than the collected liquid manures. It is always something that we focus on and it is a bigger issue all the time,” explains Albert. In fact, they haul water from Petaluma for use in the creamery, since their well only provides enough water for the dairy.



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WATER-SAVING PRACTICES

- Straus Family Creamery collects 30,000 gallons of water per day from the dairy and creamery. They process and treat the wastewater with a covered lagoon anaerobic digestion system and reuse 10,000 gallons of recycled water to flush and clean the free-stall barns every day. (See Water Recycling text box.)
- They do not irrigate their feed crops, but instead rely on winter rains to provide enough water for their no-till planted silage crops and minimum tilled native grass pastureland.

- Separated manure solids provide excellent compost for pastureland and silage crops. The compost improves water infiltration and soil moisture holding capacity and helps reduce soil erosion.
- They seek equipment that does not use water for the creamery, such as the milk-cooling equipment.
- In the creamery, they use high-pressure, low-flow systems and try to reuse water and chemicals with custom-designed water reclamation systems.
- The creamery boilers have a condensate return line so that the condensed steam returns to the boiler.

BENEFITS

- Storing and processing manure and wastewater prevents runoff from leaving the farm and contaminating the local watershed.
- Composted solids and excess liquids provide organic fertilizer and irrigation to pastures and silage crops and reduce associated costs.
- Electricity generated from the anaerobic digestion system powers 90 percent of the dairy in addition to employee housing, on-farm vehicles, and a company car.

Straus saves approximately \$50,000 a year on energy costs.

- A net metering agreement with PG&E allows Straus to offset electricity costs at the creamery.
- The lagoon covers trap air-polluting emissions.
- Lagoon covers greatly reduce odors and fly populations on the farm.

Water Recycling

- They collect wastewater from the creamery to flush the milking barn and free-stall barn. A tractor then scrapes manure and wastewater toward a storage pond and a screw press separator separates solids for composting.
- In a second covered lagoon, anaerobic digestion breaks down the bacteria in the remaining liquids.
- A lagoon cover captures the methane gas released from the manure and anaerobic digestion process and a generator converts the gas into electricity.
- Pumps transport the treated water into storage tanks until it is needed to clean the free-stall barns.
- Excess heat produced by the electricity generator heats the treated water to 180 degrees for reuse in cleaning the free-stall barns.
- A series of additional ponds store excess wastewater if necessary.

COSTS

- The cost of refurbishing the existing lagoon to a covered lagoon anaerobic digestion system was \$340,000.
- The farm received \$140,000 in grants from the California Energy Commission (CEC) and the US Environmental Protection Agency (EPA).
- With electricity generation, the payback period was 5 years.
- By reusing water, they save thousands of gallons of water per day and enjoy lower water delivery costs.
- Minimum tillage practices cut fuel and labor costs.
- The methane digester reduces greenhouse gas emissions by capturing and converting biogas into electricity.

LESSONS LEARNED

- **Start small.** With processing plants, start small; try things out and scale up later, unless you need to do so immediately.
- **Get help.** Get the expertise and technology needed to do the job right.
- **Choose equipment wisely.** Make sure that equipment is designed properly so that it does not have to be replaced early. In the case of Straus Family Creamery, the corrosive salt air forced them to replace electrical and metal equipment that had corroded.
- **Form strategic partnerships.** Albert recommends forming strategic partnerships between key agencies, organizations, and individuals to identify and test various practices as a group.



Straus Family Dairy on Tomales Bay—Photo credit: Straus Family Creamery



Straus Family Dairy cows—Photo credit: Straus Family Creamery