

*As the Chilean province of Petorca enters its sixth year of drought, the avocado growers still in business have to scrape the most they can from unforgiving surroundings. To better understand this difficult reality, freshfruitportal.com traveled with exporter Cabilfrut - 50% owned by California's Mission Produce - to the area, where abandoned groves contrast with highly organized, lush green orchards. We look at the choices made to ensure this staple but not so stable crop stays healthy and in the market.*

Empty riverbeds, barren soil and cropped avocado tree trunks painted white to prevent sunburn, in the hope they may return to production once more. 

Tiny trees fighting for life with the 130mm of rain received this winter; far from the 400mm needed to have reservoirs but enough to give roots the bare minimum of sustenance.

Avocado canopies, where present, with leaves colored shades of yellow and brown.

These scenes are from the Petorca Valley, one of the worst hit zones in its namesake province. Ignazio Spadaro from Cabilfrut's export team says there used to be 15,000kg of the fruit produced here annually but today production is practically insignificant.

Click [here for more photos from www.freshfruitportal.com's visit to Petorca with Cabilfrut](http://www.freshfruitportal.com).

This valley represents the extremes of the province's drought woes, which according to Cabilfrut president Juan Pablo Cerda have led to a significant number of plantations going out of action.

"Around the area we have 8,000ha as an industry. Of this, one third is gone, another third is seriously affected and the rest is in good shape," he says.

"There are a lot of people here who used to depend on avocados, who want to work hard all day, but there's not really a lot you can do when you don't have any water.



Trunks in a Petorca property painted white to prevent sunburn.

"For many it's like the title of the book from Gabriel Garcia Marquez - 'Chronicle of a Death Foretold'. We are in the trough of a cycle that we have already been experiencing for too long. If it doesn't rain next year, there will be a lot more growers who just don't have avocado volumes to sell."

To cope with this problem, Cabilfrut has production in several key zones in the country and has strategically planted avocados further south where water access is more abundant, with

the goal of recovering volumes lost. However, the company's roots are in Petorca - the town of Cabildo to be exact - and it is pulling out all stops to keep farms operating well.

"In our case we've sacrificed one third of our plantations so that we can run the rest properly. We have invested millions on infrastructure, water and water rights so that we can keep producing," Cerda says.

### **No halfway efforts in agriculture**

For Cabilfrut, the adversity of drought has forced not only tough decisions, but also highly organized plantations to squeeze the most of the little water available. One example is the 370ha La Viña property, with a combination of hillside and flat orchards supplied by seven reservoirs built by the company.

"We decided to eliminate some sectors that were healthy, but where we didn't have enough water to irrigate all of them, so everything you see that is coffee-colored is where trees have recently been cut," Cerda says.

"The areas that are clean are where the trees have been taken away. Right now we will not use these areas until we have water security when the rains come back, and we'll plant in the future."

La Viña farm manager Allent Vega arrived when the dams were under construction in 2009; infrastructure that has been key in maintaining the operation, including dams filled in winter that are purely for storage to help support dry summers, and other reservoirs filled from wells 80 meters below the ground.

  
Cabilfrut built seven reservoirs on its La Viña property to support avocado production.

"We are working with consultants and people who know a lot about irrigation in Chile, who have helped us a lot in defining our strategy to continue," Vega says.

"They also helped us to decide which areas are practical to keep producing. It's about assessing how much water I have and how I can use that to irrigate well for the plants, because agriculture doesn't work with things that are in-between."

To ensure the adequate level of irrigation, Vega's team uses instruments that measure soil moisture every 10 minutes, creating a graph downloaded to the computer that indicates how much water should be used for the next round.

"We also have meteorological stations in the field that allow us to measure the real needs of the area where you are. We also do a lot of manual monitoring through observation - there is a form of perception by hand to see how much water is in the soil. That's done every week."

Apart from direct water usage, Vega mentions other key orchard management techniques to ensure better yields and fruit quality.



(L-R) Estelfio Oyanedel, Juan Pablo Cerda, Ignazio Spadaro, Allent Vega

"We are trying to maintain heights of 2.5 meters for pruning, in such a way that the tree doesn't go higher than three meters. In that way people can harvest with their own hands."

"If they are bigger they will demand more water, so if you keep them shorter the demand is a bit less. You then have a more efficient use of water."

Pollination is another important aspect of management for Vega, aided by the use of pollinator avocado trees such as Zutano and Bacon representing 10% of trees, randomly distributed throughout the farm.

"Through the bees that we rent from a beekeeper, we reach good pollination. It's a significant cost but as we have increased the amount of bees from the boxes, we have had better results."

Despite the drought situation, Cabilfrut continues to supply the world with avocados, managed with self-imposed norms to ensure the best quality for customers including sizing, appearance and dry matter.

Capacity at its Cabildo packinghouse may not be as high as 2009 when production was at record levels, but administrator Ramon Escobar says there is continuity of work for practically the whole year.

"In February there was a bit of a lull which meant for that time some seasonal workers weren't here, but they came back quickly in March," he said.

While the river nearby the plant may not be flowing, Cabilfrut has taken the necessary measures to ensure supply. Like many in the industry, Cerda is hopeful that government-backed water infrastructure projects could help recuperate lost production.

"Water flows from the Andes through the Aconcagua River, reaching the Quillota Valley

avocado region to the south of Petorca, while the other main tributary is the Choapa River that goes too far north of us, running through Illapel and Vallenar," he says.

"Our hope is that we can better use this resource so that we're not losing good water to the ocean. There have been discussions about building a dam in the area for a long time but we just need the government to take action. We are willing to pay for water, it's just an issue of access for us.

"There is another project proposed to build a pipeline from the south where there is a lot of water, to the north where there is scarcity - this would mainly be for the mining industry, but the agricultural industry could benefit if it goes ahead."

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