

# Case Study

## Moran-Lotem plantation, Israel

**A valve with two pressure points: a customized solution for precise irrigation at variable pressures.**

### Background Irrigation highs and lows

The Moran-Lotem mango plantations are located in the northern part of Israel. The high price of water in the country, and the sub-tropical climate in this region, make precise irrigation critical, especially as the fruit's season - from May to October - spans the hottest months of the year. Manpower in Israel is costly, so efficient systems that reduce manual effort are essential to maintain profit margins.

### Challenges Excessive wear & tear

The mango groves follow the hills and valleys of the local topography, creating a challenging work environment for farmers. Higher pressure is required to transmit water to irrigate the plots located uphill of the water line; lower pressure is required to feed those that are downhill. Farmers would physically go to the water head to manually change the pressure, as needed. Over time, various pressure-reducing applications and accessories had been added to the valve to reduce the need for manual intervention, but this complicated the system and made it difficult to maintain the valve itself.

As the old valve wore out, an opportunity arose to find a replacement solution that would enable irrigation at different pressures, without requiring the physical intervention of the farmer, and without the need for additional accessories to control pressure changes.

### Solution Tailored valve optimization

The Aquestia team designed a tailored solution to meet the client's specific needs. A state-of-the-art Dorot S300 automatic control valve was selected for its ability to withstand the most demanding requirements of water system control. This is enhanced by a PR(2)/RC application that enables remote hydraulic selection of two different pressure-reducing set-points, with an additional remote hydraulic open-regulate command.

A constant, steady low downstream pressure can now be maintained at two different, pre-determined levels, regardless of fluctuations in upstream pressure or rate of flow. In the event that the downstream pressure exceeds the set value, the valve closes drip-tight to correct the situation.



### Results All-round savings

The sophisticated Aquestia hydraulic control valve has significantly enhanced performance of the Moran-Lotem irrigation system, enabling the regulation of irrigation at different pressures with no manual intervention, and no additional accessories to complicate the system.

Accurate and reliable, it is not subject to the malfunctions that would wear out its predecessor's various components, and therefore requires less maintenance. Meanwhile, the farmer is free to deal with other needs of the plantation, saving him time and considerable headaches.

### Customer Perspective

**"We were very impressed by the elegant solution and engineering support that we got from Aquestia's teams."**

"We were looking for an efficient solution to the problem of managing the various pressures affecting the irrigation of our orchards. We turned to Aquestia's applications department, who worked with us to understand the challenge, and then characterized a solution and adapted it to our system. We were very impressed by the elegant solution, engineering support, and professionalism of Aquestia's teams. The control valve was installed and manages the irrigation for us as needed, without any manual intervention, saving us effort, time and money."

Dudi Matalon, Farmer, Moran-Lotem mango plantations

