

Press release

Anney, October 5 2018



Synchronism of watering demonstrated!

Video on Youtube

A French company has achieved a technological breakthrough in Switzerland by demonstrating the synchronicity of the Solar-Dripper irrigation system with the water needs of plants.

This technical advance significantly improves the drip watering quality.

Indeed, to adjust the flow of conventional drip systems, it was always necessary to add sensors to reduce or avoid unnecessary watering in rainy weather. No conventional drip system incorporated a natural adjustment of its flow rate to the needs of the plant.

Tests with the most accurate instruments in Switzerland confirm that the Solar-Dripper naturally synchronizes the flow to the water requirements of plants.

This is a true technical advance for a very inexpensive watering device (less than 10 €).

The Solar-Dripper is already on sale all over Switzerland in Migros Do-It stores. It is also available by online sales on solar-dripper.com

ORIAZ Environnement wants to provide the Solar-Dripper drip system to retail networks to make this innovation available to consumers. More than 90% of Solar-Dripper's production is currently exported outside France.

The Solar-Dripper is more than a watering solution for the holidays but a true drip system optimized for saving water and improving crops.

Solar-Dripper can use unfiltered rainwater directly because it does not clog like conventional drippers.

We wish to thank the Swiss weather station of Payerne and the ETH University of Zurich for providing us with a test area and sharing their agronomic measurements.

By Robert Cossette, inventor.



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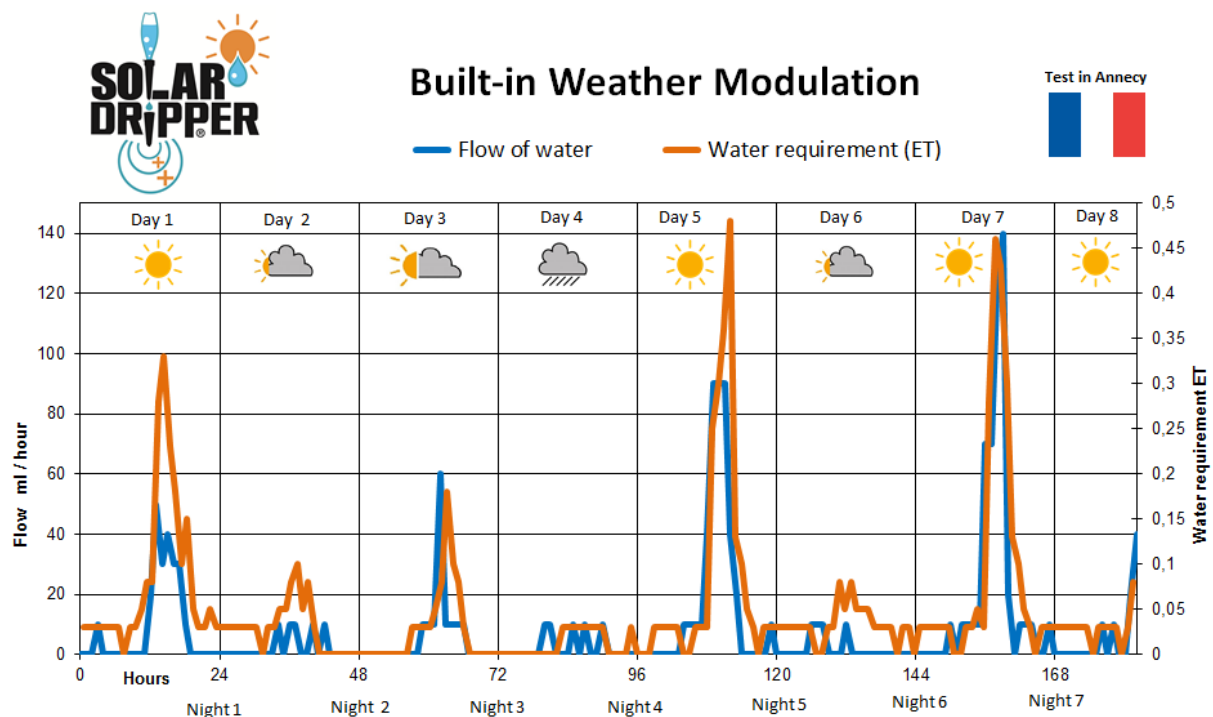
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Solar-Dripper Tested in Switzerland

> *Synchronism of watering with the plant needs*



Tests were first carried out in Canada and in France to verify the synchronism of the Solar-Dripper flow with the needs of the plant. It seemed very good and the plant growth was excellent. Our first precise water requirement values came from ETp evapotranspiration calculations made from a Davis Vantage Pro 2 professional weather station and by a WatchDog ET weather station.



These ET evapotranspiration values are calculated from the weather measurements by the Penman-Monteith formula from a [FAO standardized equation](#).

With the evolution of our measurement techniques and to publish our results without the risk of scientific controversy, we were looking for an **independent** site to confirm this correlation between The Solar-Dripper flow and the watering requirements ET.



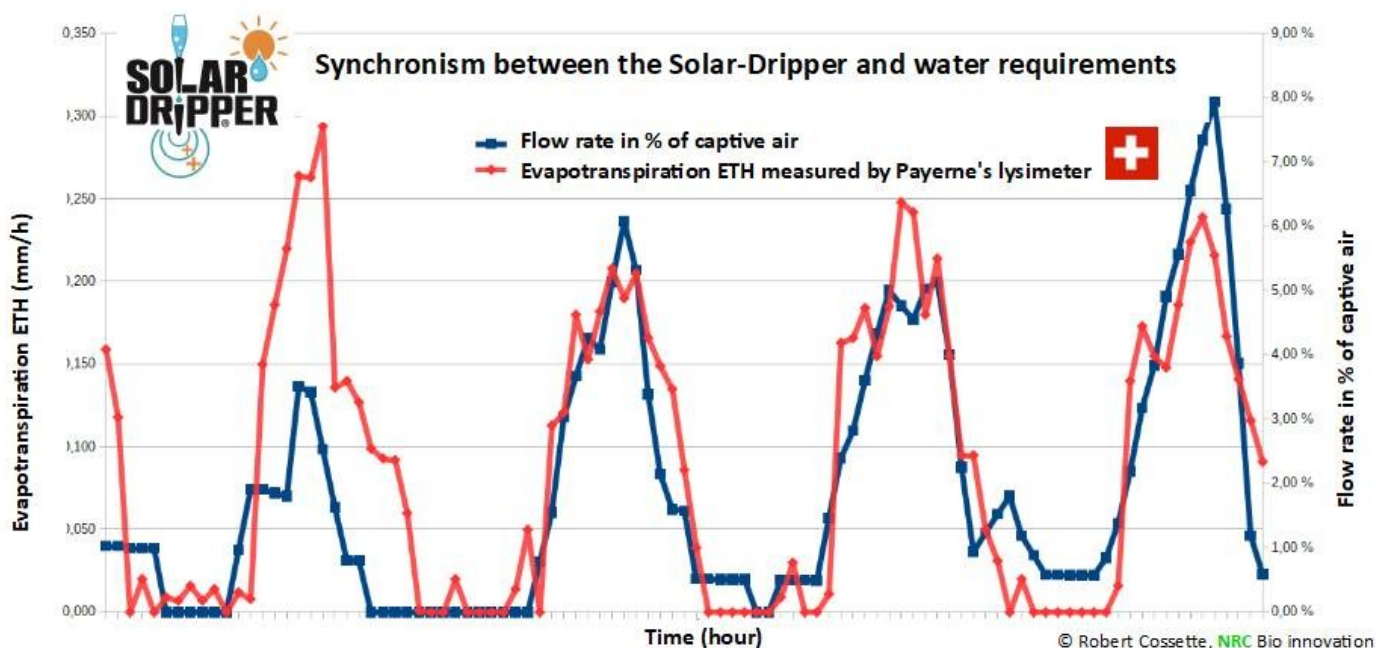
The Payerne Swiss weather station is equipped with a precision lysimeter to study the watering needs. This direct measurement of evapotranspiration is performed by precision scales in the soil. These measurements are analyzed in Zurich.

The local officials of the Swiss Weather Station and the [Institute for Atmospheric and Climate Science in Zurich](#) have agreed to provide us with space and provide us with the hourly measurements of their [SFL-600 lysimeter](#).

We were allowed to have a test bench a few meters from the lysimeter to conduct our watering flow surveys. Our flow measurements were made from images of 5 timelapse cameras arranged around the test bench. These timelapse cameras took one picture every 15 minutes. The flow rate of the Solar-Dripper is then calculated from the hourly differences in water level readings on the printed graduations.



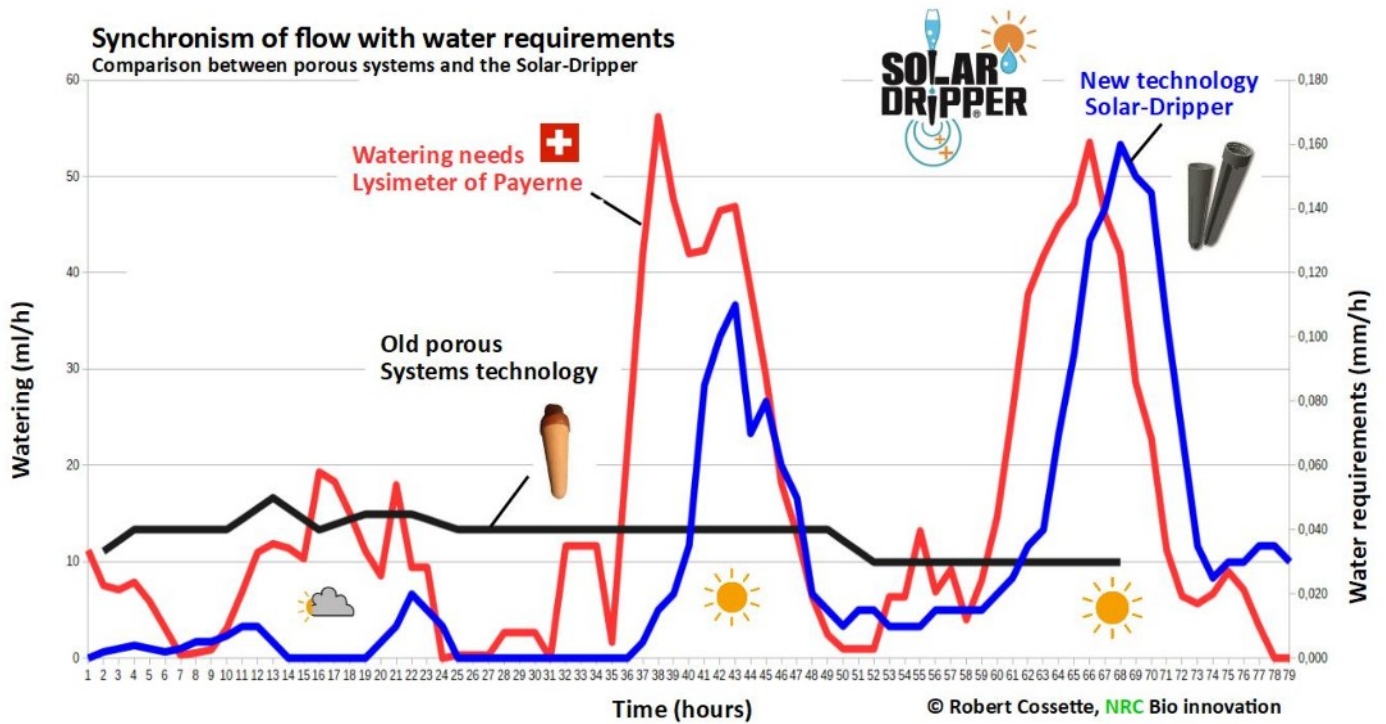
According to our flow model and our previous experiments, the flow rate expressed in % of the captive air in the bottle is very close to the evapotranspiration curve. The data was processed with a spreadsheet to plot the flow and water demand ET on a single graph. **Here are the results of the test in Payerne between August 16 and August 20, 2018:**



Conclusion: the correlation curves obtained demonstrate a natural tendency of the Solar-Dripper to follow the watering needs of the plant. Between a Solar-Dripper (costs less than 10 €) and a top class scientific lysimeter the curves are very close.

This **natural synchronization** of a drip watering to the needs had never been demonstrated before.

We continued the tests to compare side to side the flow of a porous system and the Solar-Dripper:



To control drip flow of modern watering systems, it is always necessary to use sensors to adjust the irrigation flow with relatively complex and expensive automation.

This external control is no longer required with the Solar-Dripper which simplifies and improves the watering efficiency.

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We owe a big thank to the [Swiss weather station](#) at Payerne and to the **Land-climate dynamics group** (Prof. Sonia Seneviratne) at the [Institute of Atmospheric and Climate Science ETH Zurich](#) for allowing us to carry out this experiment and for sharing their lysimeter measurements.



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