aqualone connect

Irrigate by the real weather, not by the clock



A field sensor that measures evaporation, and a gateway that adjusts every irrigation: triggering, rain, heat and drainage.

THE ISSUE

Water needs double between winter and summer

3.0

mm of water per day in June

Normal evapotranspiration in Nouméa

6.0

mm of water per day in December

Same station, same method

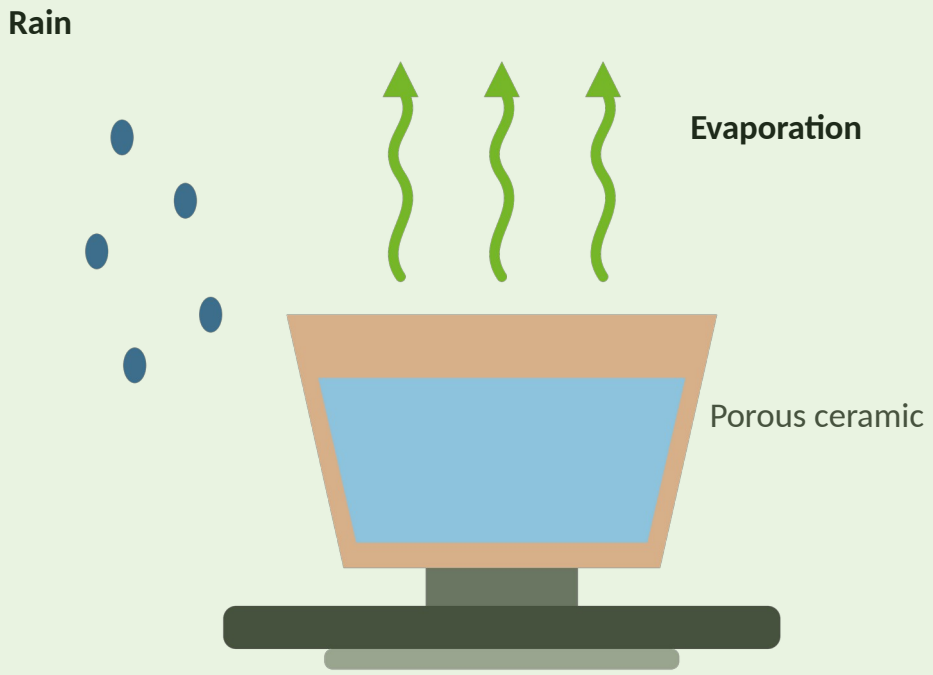
A fixed schedule therefore applies twice too much water in the cool season, or half what is needed in the hot season.

Source: Météo-France, Nouméa climate sheet 98818001, normal Penman PET 2001-2020.

THE ANSWER

A sensor that evaporates like your plants

- A porous ceramic cup, placed in the same sun and wind as the crop, loses its water through evaporation.
- It is weighed continuously: the weight gives the water height directly, in millimetres.
- Rain fills it, heat empties it: it measures what really matters to the plant.
- An air sensor also measures temperature and humidity.



Continuous weighing: grams → millimetres

ONE MEASUREMENT, THREE FUNCTIONS

Irrigation adapts in three ways

1

Irrigate when needed

Irrigation starts when the cup has emptied through evaporation, with no fixed schedule.

2

No irrigation after rain

The scheduled cycle is cancelled while rain has filled the cup, then allowed again on its own.

3

Dose by the heat

Each cycle’s duration follows the temperature and humidity of the last 12 hours.

FUNCTION 1 · CLIMATIC TRIGGERING

Irrigation starts once the plant has used the water

1

The cup loses its water through evaporation

2

Below 1 mm: the cup is refilled and the valves open

3

The next cycle waits until it empties again

Hot and dry: the cup empties fast, irrigations come closer together. **Overcast:** they space out on their own. The refill volume sets the gap between two irrigations.

FUNCTION 2 · RAIN CONDITION

After rain, the cycle is cancelled, then allowed again on its own

Rain

The shower fills the cup

→

Start time

Level above the threshold: cycle cancelled

→

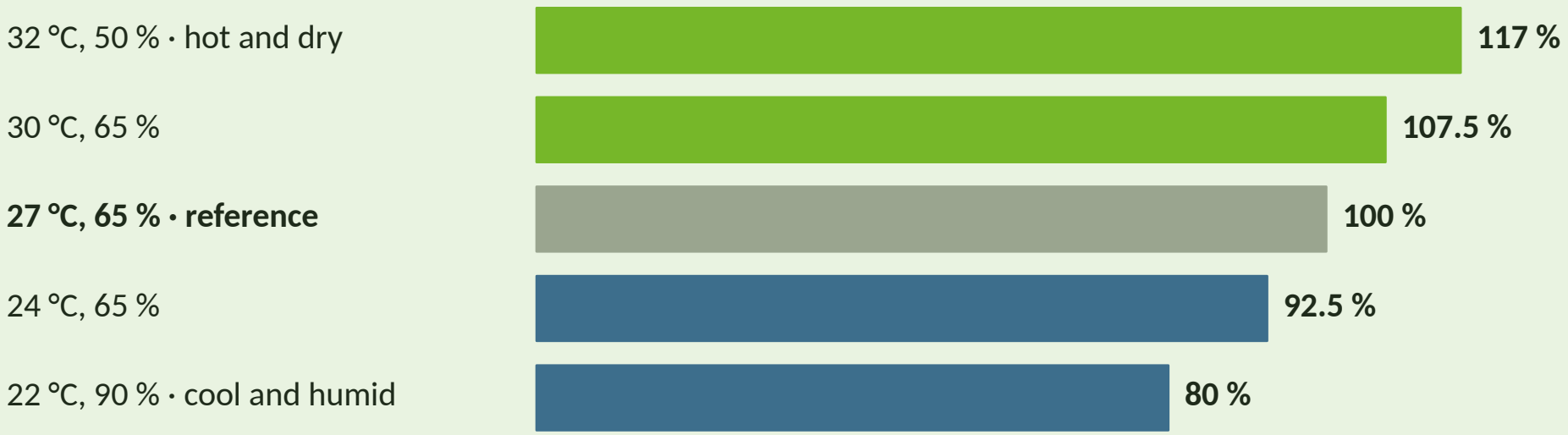
Evaporation

Level falls below the threshold: the next cycle runs

Better than a rain gauge: the cup accounts for what follows the shower. Rain followed by a hot day blocks irrigation for less time than rain followed by overcast weather. No manual reset.

FUNCTION 3 · ETR MODULATION

Duration follows the day’s heat and humidity



+2.5 % per °C above 27 °C, **−0.3 % per humidity point** above 65 %. Always between 70 and 140 % of the programmed duration.

Coefficients based on evapotranspiration sensitivity (FAO-56). Default values, adjustable.

THE CHECK

Drainage confirms the dose is right

A collector under a few drippers measures the water that passes through the substrate. Each day, the portal compares drained water with the water actually applied.

Drained water
collector counter

÷

Applied water
actual duration × drippers

=

Per zone, every day
drainage %

Cycles cancelled by rain and modulated durations are taken into account automatically: the percentage reflects irrigation as it actually happened.

THE SYSTEM

Decisions are taken on site, even without Internet



Long-range LoRaWAN radio

Web portal and phone

History and Excel export

The portal is used to view and adjust. Losing the Internet link does not stop irrigation.

WHAT YOU GAIN

The right dose, every day

Less water wasted	No irrigation on soil already wet from rain, shorter durations in cool, humid weather.
Less stressed crops	More water in hot spells, less when the air is humid: neither too much nor too little.
Fewer adjustments	The system follows the seasons on its own. Measured drainage confirms the settings are right.

DEMONSTRATION SITE

See it working, live

prog.itevai.com/demo/en/

- Open access, no password, on a computer or a phone
- Aqualone, air and soil probe charts
- ETR modulation and rain condition settings
- Drainage: volumes and daily percentage

Sensors on the demonstration site are simulated; the portal and the gateway are the ones delivered to your sites.

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Let’s talk about your site

We review your installation and propose a pilot zone, to measure together the water saved.

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A detailed methodology booklet (physical principle, algorithms, validation protocol) is available on request.