

EVERYTHING STARTS WITH WATER



PROTECTING BANANA ROOTS,
YIELD AND LONG-TERM PROFITABILITY

abc
A BETTER CHOICE

TABLE OF CONTENTS

Water Is the Foundation of Banana Production	3
From Irrigation Water to Risk	4
Water as a Disease Pathway	5
From Infection to Yield Loss	6
Protecting the Plantation at the Source	7
Tested, Validated and Field-Proven	8
Chlorine Disinfects, UV-C Protects	13
Clean Water, Healthy Roots, Profitable Production	14
Proven Systems – Directly Available	15
How does the ordering and delivery process work?	17
Global Support, Local Expertise	20
Everything Starts with Water	21

TABLE OF
CONTENTS IS
CLICKABLE



“Diseases don’t start in the field, they start in the water”





WATER IS THE FOUNDATION OF BANANA PRODUCTION

Banana plants depend on a shallow and highly sensitive root system. Every irrigation cycle directly affects root health, plant strength and final yield.

Water is not just an input. It is the foundation of productivity, continuity and long-term profitability.

FROM IRRIGATION WATER TO RISK

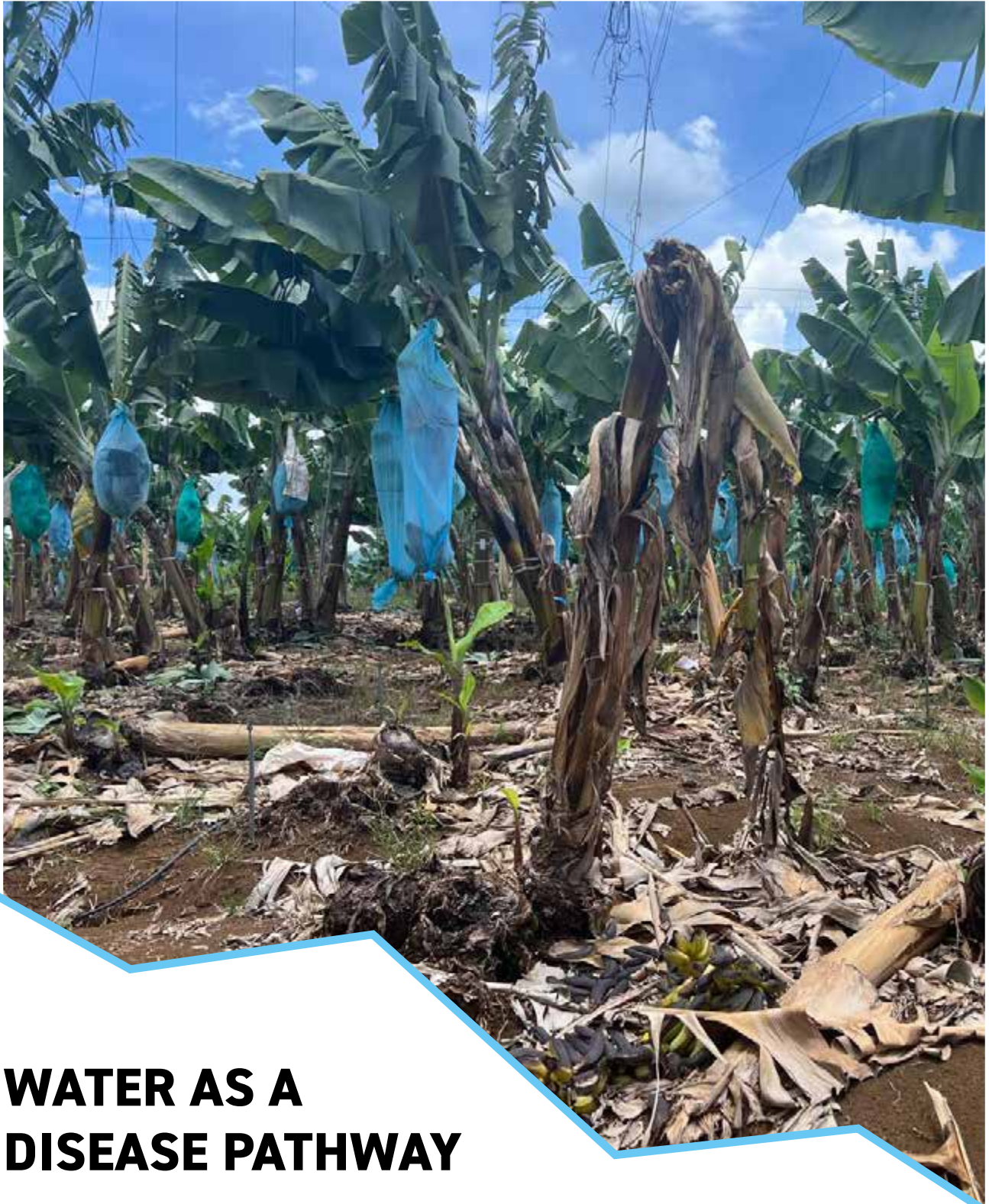
Banana plantations rely on irrigation water from rivers, open canals and groundwater wells.

These sources are rarely controlled at origin and are often contaminated with harmful microorganisms. Once inside the irrigation system, water reaches the root zone directly.

Water becomes a direct risk factor.



FROM IRRIGATION WATER TO RISK

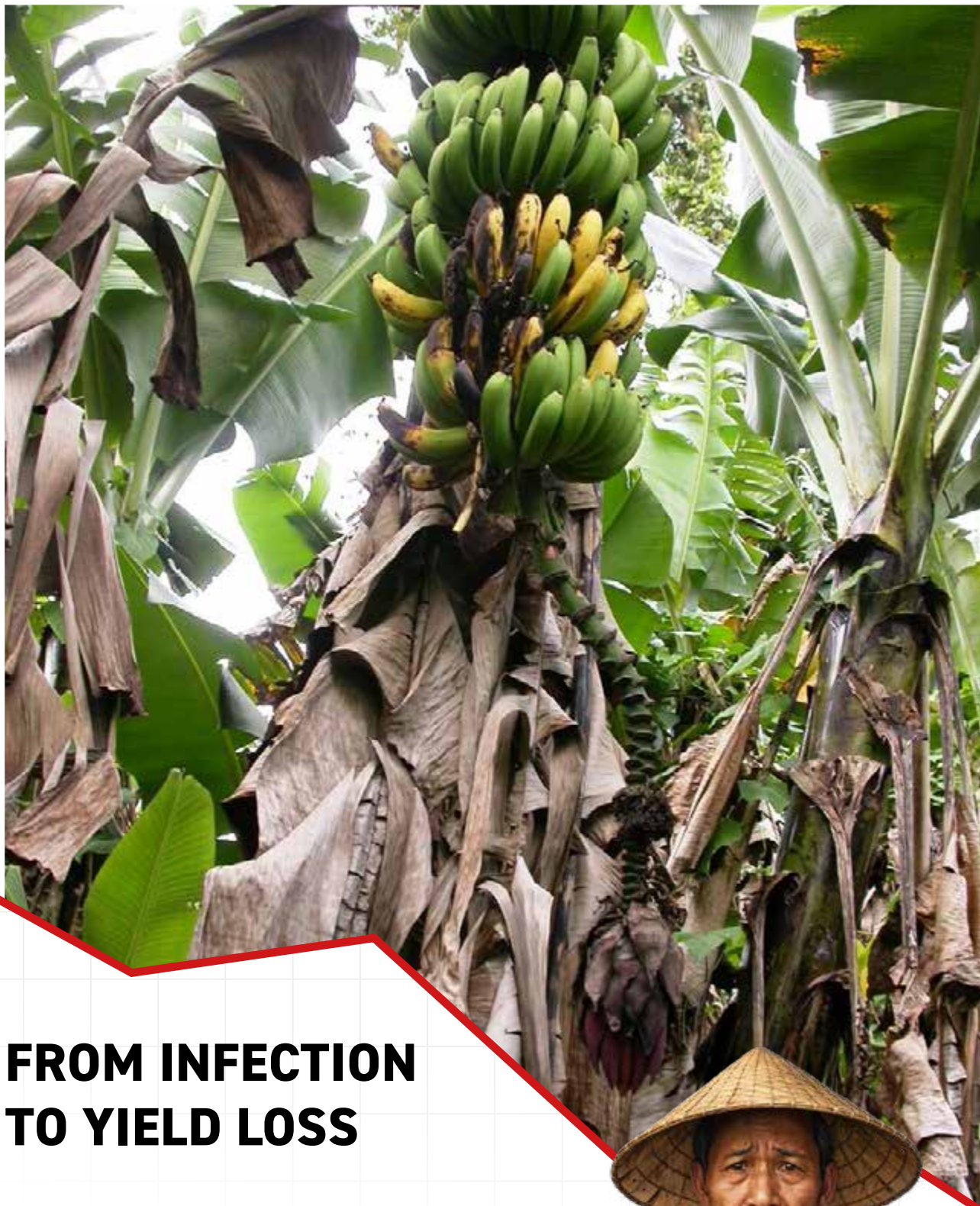


WATER AS A DISEASE PATHWAY

Several destructive banana diseases are known to spread through contaminated irrigation water, including:

- ⊖ ***Fusarium oxysporum* f.sp. *cubense* (TR4)**
- ⊖ ***Ralstonia solanacearum* (Moko disease)**
- ⊖ ***Erwinia* species (bacterial soft rot)**
- ⊖ ***Pythium* and *Phytophthora* species affecting root health**

Once introduced, these pathogens are extremely difficult to control and may impact fields for decades.



FROM INFECTION TO YIELD LOSS

The consequences of waterborne infection are severe:

- ⊖ Plant collapse and uneven growth
- ⊖ Empty planting rows
- ⊖ Replanting costs
- ⊖ Loss of production continuity

Disease pressure continues to increase, while margins are under constant pressure.



PROTECTING THE PLANTATION AT THE SOURCE

UV-C water disinfection was developed specifically for agricultural irrigation systems.

By treating irrigation water before it reaches the field, UV-C removes a critical infection pathway from banana production.

UV-C instantly neutralizes fungi, bacteria and viruses without chemicals and without residues.

*“If Moko travels through water,
UV-C is the roadblock”*

PROTECTING THE PLANTATION AT THE SOURCE

TESTED, VALIDATED AND FIELD-PROVEN

2022

- **Pilot Study*:** Wageningen University & Research examines the efficacy of UV technology against TR4 and the Ralstonia bacteria highlighting its potential as a remedy against widespread plant infections in banana farming.

2023

- **Dynamic Test*:** Wageningen University & Research conducts a dynamic on-site test at a facility of a manufacture. Water contaminated with TR4 is treated and the practicality and effectiveness of UV technology is demonstrated.



2024

- **First Installation:** In February the first successful field trials take place in the Philippines, on our compound in Padada.
- **Field Validation*:** In March Wageningen University & Research validates UV-C technology during experience days, which is overseen by partners and customers. Three independent labs confirm a 100% eradication rate of TR4 and the Ralstonia bacteria.

Watch the video report of the tests below.



- **Orders:** By August the first UV-C units are operational in the banana sectors of the Philippines and Ecuador.
- **Technology Update:** Due to growing demand, enhancements for online monitoring, increased capacity, and energy efficiency lead to a second version development with a unique “flowplate”. This second version has been developed in cooperation with Van Remmen.

* All reports are available upon request

TESTED, VALIDATED AND FIELD-PROVEN

- **New Unit:** January marks the delivery of the first unit with a flowplate in the Philippines.
- **Additional Tests*:** February brings further evaluations of the new technology in the Netherlands with Wageningen University & Research concluding these assessments in March.
- **Successful Installation:** March sees the successful deployment and operation of new, higher capacity and energy efficient units in the Philippines.



TESTED, VALIDATED AND FIELD-PROVEN

- **Comprehensive Range:** By April five large units and fourteen smaller units are available. Each variant, matched to specific water quality needs, is tested and proven effective.

UV-C technology has been extensively tested under laboratory conditions, pilot environments and full-scale banana plantations.

Field tests and comparative evaluations in the Philippines, Ecuador and the Netherlands confirm that UV-C:

- Operates more stable than chlorine systems
- Is independent of manual dosing
- Delivers consistent performance under variable water quality
- Results in lower energy use and lower total cost of ownership

UV-C has been proven to provide structurally good, safe and efficient water disinfection, thus preventing the spread of diseases.

“Up to 50% Less Energy | Up to 50% Lower Total Cost of Ownership Validated against TR4 & Ralstonia”

Q1
2026

Q1 – 2026 | Introducing UV-C+

The Next Generation of Irrigation Water Disinfection

Smarter Technology. Lower Costs. Higher Efficiency.

UV-C+ has been developed to deliver the same — or even better — disinfection performance while significantly reducing operational costs. Through intelligent engineering, fewer lamps, and optimized UV efficiency, UV-C+ substantially lowers both energy consumption and total ownership costs.

Why UV-C+ Changes the Game

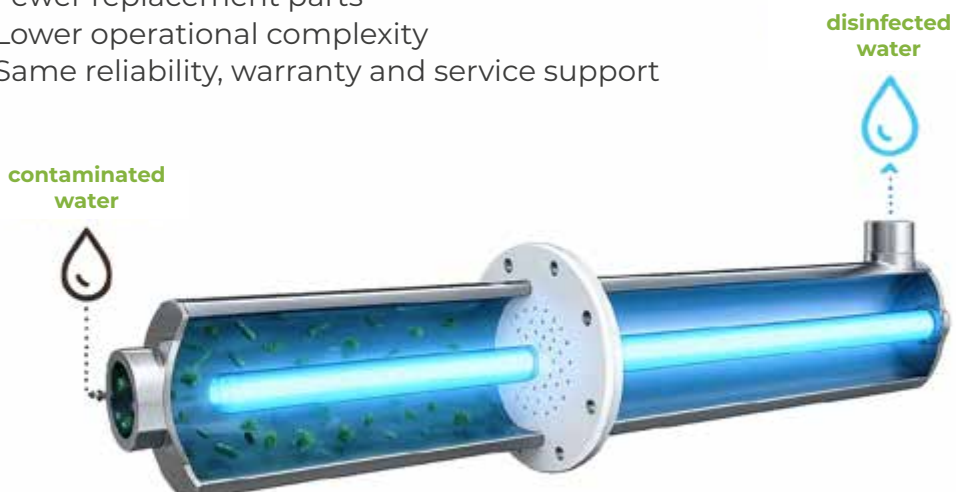
Traditional UV systems require large numbers of high-power lamps to achieve the required dose. UV-C+ takes a different approach.

By combining high-efficiency **325W lamps** with our unique **FlowPlate technology**, water is actively guided toward the UV-C source rather than simply passing through it. This increases effective UV exposure, enabling superior performance with fewer lamps and less energy.

More performance from less energy.

Key Benefits

- ⊕ Up to **50% lower energy consumption**
- ⊕ Up to **50% lower Total Cost of Ownership**
- ⊕ Fewer lamps required
- ⊕ Reduced maintenance requirements
- ⊕ Fewer replacement parts
- ⊕ Lower operational complexity
- ⊕ Same reliability, warranty and service support



TESTED, VALIDATED AND FIELD-PROVEN

Real-World Performance Comparison

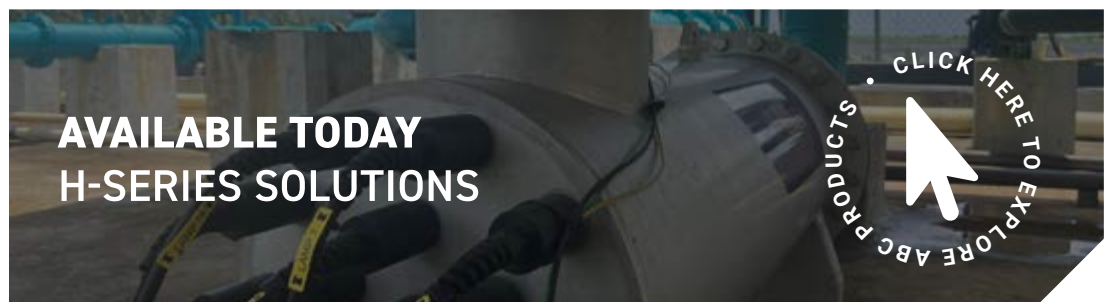
UV-C+ vs Traditional UV-C Systems

Unit	UV-C+	Traditional UV-C
Model	H330	H13.6
Capacity	441 m ³ /h	441 m ³ /h
Number of lamps	23	34
Power per lamp	325W	400W
Total power consumption	7.48 kW	13.60 kW
Energy reduction	45%	–

The Result

- ⊕ 11 fewer lamps (-32%)
- ⊕ 6.12 kW lower power consumption
- ⊕ Fewer maintenance interventions
- ⊕ Significantly lower Total Cost of Ownership

The result is a system designed not only for performance, but for long-term profitability.



Available Today – H-Series Solutions

All H-Series systems have been developed based on extensive field validation and real commercial applications and are available for immediate deployment.

Included:

- ⊕ Complete irrigation water disinfection solution
- ⊕ Physical and online training programs
- ⊕ Five-year warranty coverage
- ⊕ Service and maintenance support
- ⊕ Replacement of wear components
- ⊕ Lamp replacement after 16,000 operating hours
- ⊕ Quartz replacement after 32,000 operating hours
- ⊕ Operational protocols and technical support
- ⊕ Optional online monitoring and dashboard integration

Q3–Q4 2026 | Next Development Phase

Integrated Irrigation & Fertigation

Building beyond disinfection toward a fully connected irrigation ecosystem:

- ⊕ Fertikit nutrient integration
- ⊕ Irrigation system connectivity
- ⊕ API integration with field sensors
- ⊕ API integration with weather stations
- ⊕ Centralized dashboard and monitoring platform

2027 | Intelligent Irrigation Management & AI

Moving from disinfection toward predictive irrigation intelligence:

- ⊕ Digital irrigation planning
- ⊕ AI-powered analysis and predictive models
- ⊕ Data-driven optimization
- ⊕ Increased automation of irrigation decisions

Water Disinfection as a Service (WDaaS)

We are also developing a flexible service model that allows access to advanced water disinfection without major upfront investments.

Included:

- ⊕ Fixed monthly pricing based on capacity and usage
- ⊕ Complete supply and installation
- ⊕ Maintenance and service included
- ⊕ Replacement parts included
- ⊕ Software updates and monitoring included
- ⊕ Fully managed solution



**More Protection | Less Energy | Lower Costs |
Lower Investment | Smarter Irrigation**

CHLORINE DISINFECTS, UV-C PROTECTS

Chemical disinfection focuses on killing pathogens in water.
UV-C focuses on protecting crops and production continuity.



CHLORINE SYSTEMS:

- ⊖ Require continuous chemical dosing
- ⊖ Introduce chemical stress to plants and soil
- ⊖ Depend on human operation
- ⊖ Have recurring operational and safety costs



UV-C+ SYSTEMS:

- ⊕ Work physically, without chemicals
- ⊕ Operate fully automatically
- ⊕ Deliver consistent results
- ⊕ Offer predictable long-term costs

CHLORINE DISINFECTS. UV-C PROTECTS.

UV-C turns water protection into a controlled, reliable process.



CLEAN WATER, HEALTHY ROOTS, PROFITABLE PRODUCTION

*“UV-C transforms
water from a
risk factor into a
strategic asset”*

Water is the foundation of banana production and the primary pathway for disease.

UV-C water disinfection makes pathogens in irrigation water harmless by damaging their DNA, so they cannot spread or infect the roots. It works without chemicals, residues, or impact on water quality.

The result:

- ⊕ Healthier roots
- ⊕ Stronger plants
- ⊕ Stable yields
- ⊕ Lower risk
- ⊕ Predictable costs

CLICK HERE TO WATCH
OUR EXPLAINER VIDEO:



PROVEN SYSTEMS - DIRECTLY AVAILABLE

Our UV-C+ systems are available directly from stock and are divided into four proven series:

- ⊕ **H-Series** High-capacity systems for pumping stations and large plantations
- ⊕ **W-Series** Designed for low water transmittance
- ⊕ **P-Series** Optimized for medium transmittance conditions
- ⊕ **V-Series** High efficiency systems for high transmittance water

In total, **19 different units** are available, allowing precise matching to water quality, flow rate and plantation size.



PROVEN SYSTEMS - DIRECTLY AVAILABLE

High Capacity Systems

H-Series for Pumping Houses

- Designed for large scale operations, the H-Series offers robust disinfection capabilities across different connection sizes. The systems can handle capacities ranging from 30 m³/hour to 441 m³/hour, accommodating varying levels of water transmittance (T10).

Unit	Connection	T10 75%	T10 80%	T10 85%
H030	DN100	30	36	43
H080	DN150	69	85	107
H160	DN200	126	157	202
H240	DN250	199	248	320
H330	DN300	266	335	441

Small Capacity Systems

W-P-V Series

- These systems cater to smaller operations, offering varying capacities based on water transmittance levels. Each series (W, P, V) is optimized for low to high transmittance conditions, ensuring efficient disinfection in diverse environments.

W - Series (low transmittance) – Capacity in m3/hour at a doses of 800J/m2

Unit	Connection	40%	45%	50%	55%	60%
W3	1,5"	0,9	1,0	1,0	1,1	1,2
W5	2"	1,8	2,0	2,1	2,2	2,3
W8	2"	2,7	2,9	3,1	3,3	3,5
W11	3"	3,4	3,8	4,2	4,6	5,1
W30	DN100	8,6	9,8	11,3	12,8	14,7

P - Series (medium transmittance) - Capacity in m3/hour at a doses of 800J/m2

Unit	Connection	60%	65%	70%	75%	80%
P7	2"	2,3	2,4	2,6	2,7	2,8
P11	2"	3,5	3,6	3,8	4,0	4,2
P19	2"	5,1	5,6	6,1	6,6	7,1
P27	3"	6,1	7,0	7,9	8,9	10,1
P30	DN100	6,4	7,5	8,6	10,5	13,2

V - Series (high transmittance) - Capacity in m3/hour at a doses of 800J/m2

Unit	Connection	80%	85%	90%	95%
V140	1,5"	1,9	2,3	2,8	3,6
V160	2"	3,9	5,0	6,5	8,2
V180	2,5"	6,5	8,8	12,5	17,9
V190	3"	13,5	18,0	23,0	30,0



HOW DOES THE ORDERING AND DELIVERY PROCESS WORK?

Step 1 – Assessment and System Requirements Analysis

Together we assess and define your exact disinfection requirements. To ensure reliable UV-C performance, three critical factors must be evaluated and correctly combined. UV-C disinfection is only effective when these three parameters are determined:

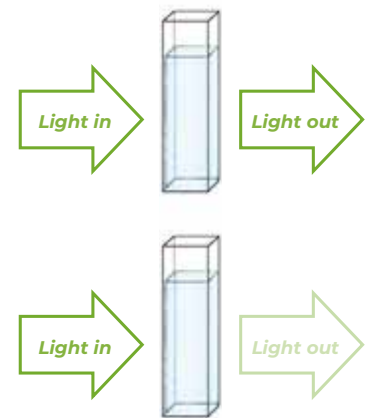
1. UV Transmission – How much UV light passes through the water

UV transmission determines how effectively UV-C light can penetrate the water.

Key points:

- ⊕ Expressed as the percentage of UV light remaining after passing through 1 cm of water → **T10 value**
- ⊕ Transmission cannot be determined visually and must always be measured
- ⊕ It is affected by dissolved substances that absorb UV light
- ⊕ Transmission is not the same as turbidity:
 - **Transmission** measures dissolved substances that absorb UV light
 - **Turbidity** measures suspended particles in the water

High transmission = more UV light reaches microorganisms.



2. Capacity – How long the water is exposed to UV light

Capacity refers to the water flow through the UV reactor.

Key points:

- ⊕ Determines the contact or residence time inside the reactor
- ⊕ Usually expressed in liters per minute (L/min) or cubic meters per hour (m³/h)
- ⊕ Can vary depending on the process and operational conditions

3. UV-C Dose – Ensuring every drop of water receives sufficient UV exposure

The UV dose (J/m²) is the amount of UV-C energy received by microorganisms, required for effective inactivation.

The UV dose is determined by a combination of:

- ⊕ **Transmission** → How much UV light can pass through the water
- ⊕ **Capacity** → How much water flows and at what speed
- ⊕ **UV intensity** → The amount of UV-C output generated by the lamps (wattage)

During this first step, we combine the results of these three parameters to determine the most suitable UV-C system configuration and reactor setup for your application.

To simplify this process, you may also complete our Water Questionnaire.





Step 2 – Preliminary Proposal and System Concept

Based on the assessment from Step 1, we prepare an initial system concept and indicative proposal.

This includes:

- ⊕ Recommended UV-C solution
- ⊕ Preliminary system layout
- ⊕ Initial performance calculations
- ⊕ Estimated investment indication

Once the concept is approved, we jointly evaluate the local requirements necessary for implementation.

Step 3 – Evaluation of Local Practical Requirements

We always aim to provide a complete solution, while working together with your local organization where this creates efficiencies and cost advantages.

Based on experience, local cooperation for logistics and installation activities often provides the most practical and cost-effective approach.

Typical considerations include:

- ⊕ Sea freight
- ⊕ Inland transportation
- ⊕ Local transportation
- ⊕ Port handling
- ⊕ Customs clearance
- ⊕ Insurance
- ⊕ Packaging costs
- ⊕ Import duties and taxes
- ⊕ Installation costs

The outcome of this step is a detailed implementation plan including all additional costs and responsibilities.



Step 4 – Approval of the Complete Solution and Project Planning

Immediately after project approval, we initiate the implementation process and start preparations together with your team.

This stage includes:

- ⊕ Project kick-off and planning
- ⊕ Technical preparation
- ⊕ Transfer of UV-C+ knowledge and operational procedures
- ⊕ Access to our:
 - Knowledge database
 - E-learning platform
 - Technical manuals and handbooks

Our goal is to ensure your team is fully prepared before installation begins.

Step 5 – Delivery, Installation and Commissioning

We, or one of our certified partners, are always physically present during delivery and installation.

The project handover always includes:

- ⊕ A fully operational UV-C disinfection system
- ⊕ Operational training and procedures
- ⊕ Monitoring guidelines
- ⊕ Service and maintenance agreements
- ⊕ Clear operational responsibilities and support structure

Our objective is not only to deliver equipment, but to provide a reliable, long-term disinfection solution with clear support and ownership.



*“UV-C protects yield today
and profitability tomorrow”*



GLOBAL SUPPORT, LOCAL EXPERTISE

GLOBAL SUPPORT, LOCAL EXPERTISE

*“Clean water,
no residues, no
compromises”*

Our UV-C+ Systems are supported worldwide.

Our team combines agricultural expertise, UV-technology knowledge and on-site experience to support growers throughout the entire process:

- ⊕ **System selection and sizing**
- ⊕ **Installation support**
- ⊕ **Commissioning and training**
- ⊕ **Long-term operational support**

Whether operating in Latin America, Africa, Asia or Europe, support is always within reach.

EVERYTHING STARTS WITH WATER

Protect your plantation at the source.

Discover how UV-C water protection can secure your banana production.

Turn clean water into a competitive advantage.

Receive a fast, obligation-free quotation, fully adapted to your irrigation water quality, required capacity and local conditions.

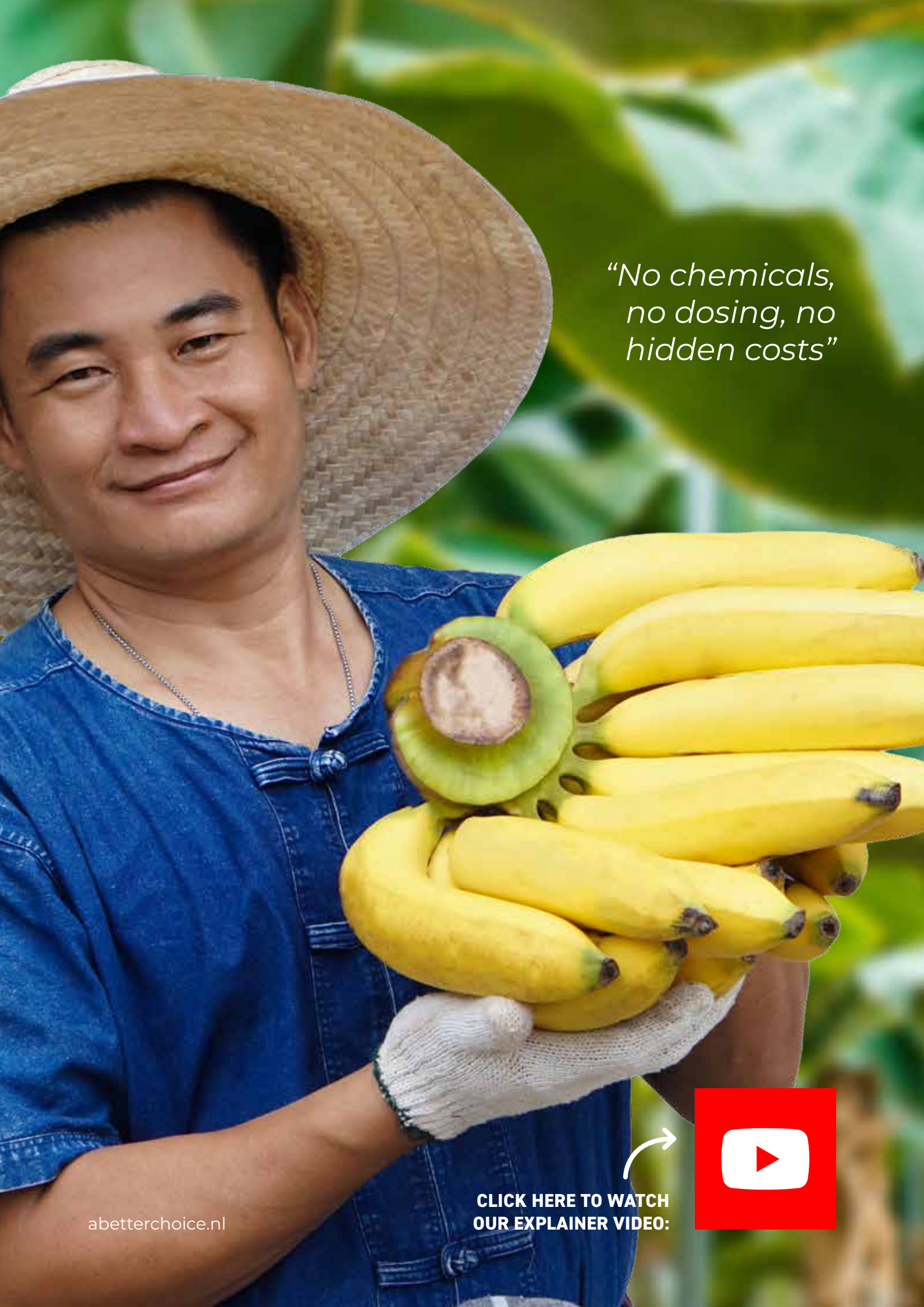
*“Lower risk, lower costs,
higher control”*



EVERYTHING STARTS WITH WATER

**ONE CONVERSATION
IS ENOUGH TO
UNDERSTAND WHAT
UV-C CAN DELIVER FOR
YOUR PLANTATION.**

**CLICK TO
CONTACT**

A smiling man wearing a wide-brimmed straw hat and a blue denim shirt is holding a large bunch of ripe yellow bananas. A single kiwi fruit, sliced in half to show its green flesh and brown core, is placed among the bananas. The background is a soft-focus view of green banana leaves.

*"No chemicals,
no dosing, no
hidden costs"*

abetterchoice.nl

**CLICK HERE TO WATCH
OUR EXPLAINER VIDEO:**

