REMOVES PATHOGENS FROM DRAIN WATER

For optimum crop protection

KATHARI
ULTRAFILTRATION

EFFICIENT WAY TO CLEAN DRAIN WATER

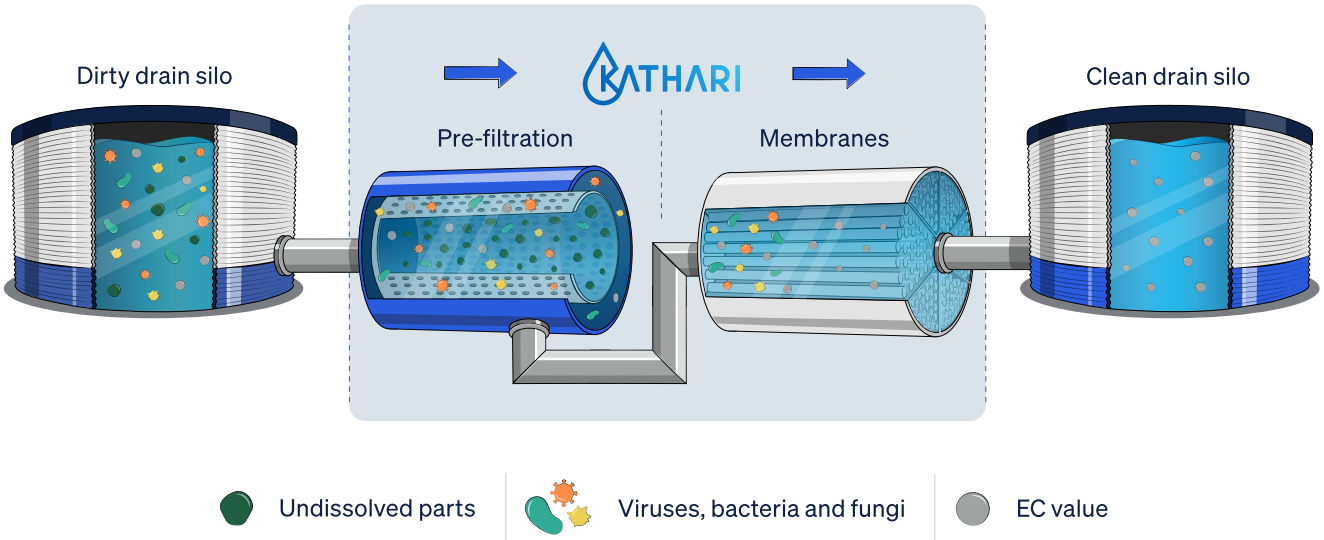
Re-using drain water in the correct way allows growers to save on expensive nutrients and water, with the additional advantage of reducing the environmental burden. Because drain water can contain pathogens, effective treatment is essential.

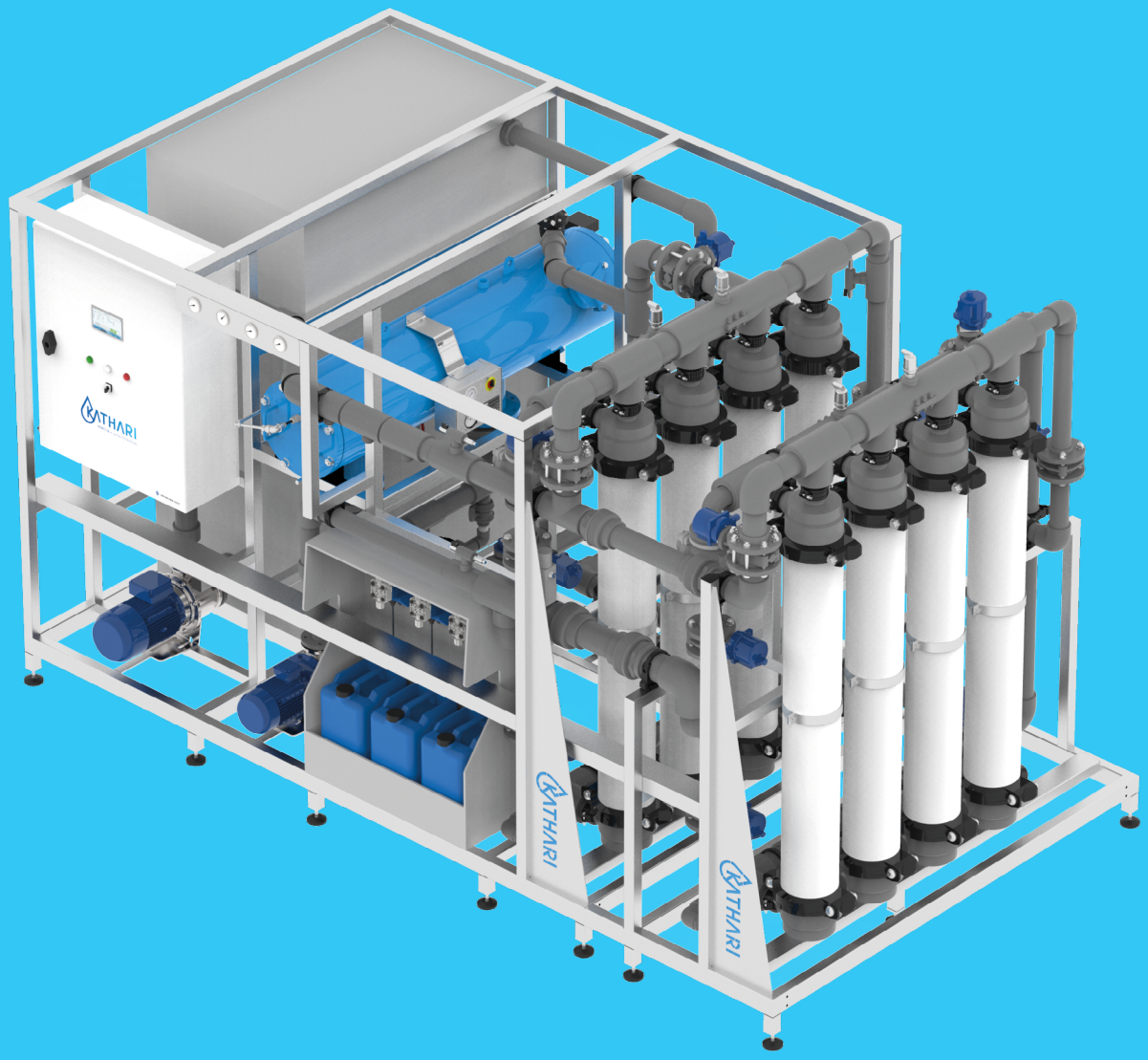
The Kathari gives your crops optimum protection against viruses, bacteria and fungi – with high removal certainty and low operating costs. It achieves a high Log reduction of viruses, bacteria and fungi by means of ultrafiltration (UF). And as UF is a low-energy technique and uses no antimicrobial products, it is very cost-efficient. The Kathari therefore offers a wide range of benefits.

How ultrafiltration works

UF works by physically removing pathogens, unlike the more standard techniques that focus mainly on killing them. UF uses membranes, which are actually filters with very small pores. These pores are just the right size to hold back the viruses, bacteria and fungi but still allow dissolved salts, such as nutrients, to pass through. This process is not affected by water turbidity. It is therefore an excellent technique for purifying water, and also makes it possible to re-use water and nutrients. The UF method has a great track record over many decades and is used in water treatment situations worldwide. We have now optimised this technique for use in greenhouse horticulture.

Viruses	0,02 - 0,1 µm
Bacteria	0,1 - 10 µm
Fungi	2 - 100 µm
Sand	100 µm - 1 mm





BENEFITS FOR YOU

Stable quality and quantity are guaranteed
With UF membranes, the water is physically cleaned. Anything larger than the pores simply cannot pass through. This means that the quality of the filtered water does not depend on the feed water, and stable quality and quantity are guaranteed. The Kathari achieves Log4 reduction of viruses and fungi and Log6 reduction of bacteria.

Low costs of energy and maintenance
The Kathari offers excellent energy efficiency. The power consumption of a 24 m^3/h unit, for example, is around 2.6 kWh. And the system only needs a maintenance inspection once a year. The operating costs are therefore very low, and the investment payback period is relatively short.

Applications
The Kathari can be applied to various sources, whether it is dirty drain water, basin water or large surface water.

Depending on the situation the desired configuration will be determined for you.

Complete product
The Kathari is suited for both new and existing situations. All functionalities required for effective operation are integrated. The Kathari can also be controlled by your horticulture computer and it includes, as standard, a data module for optimum service support.

Operational warranty
The advantage of the membrane technique is that all viruses, bacteria and fungi are physically retained. An automatic periodic integrity test is carried out on a regular basis to guarantee the correct operation of the membranes.

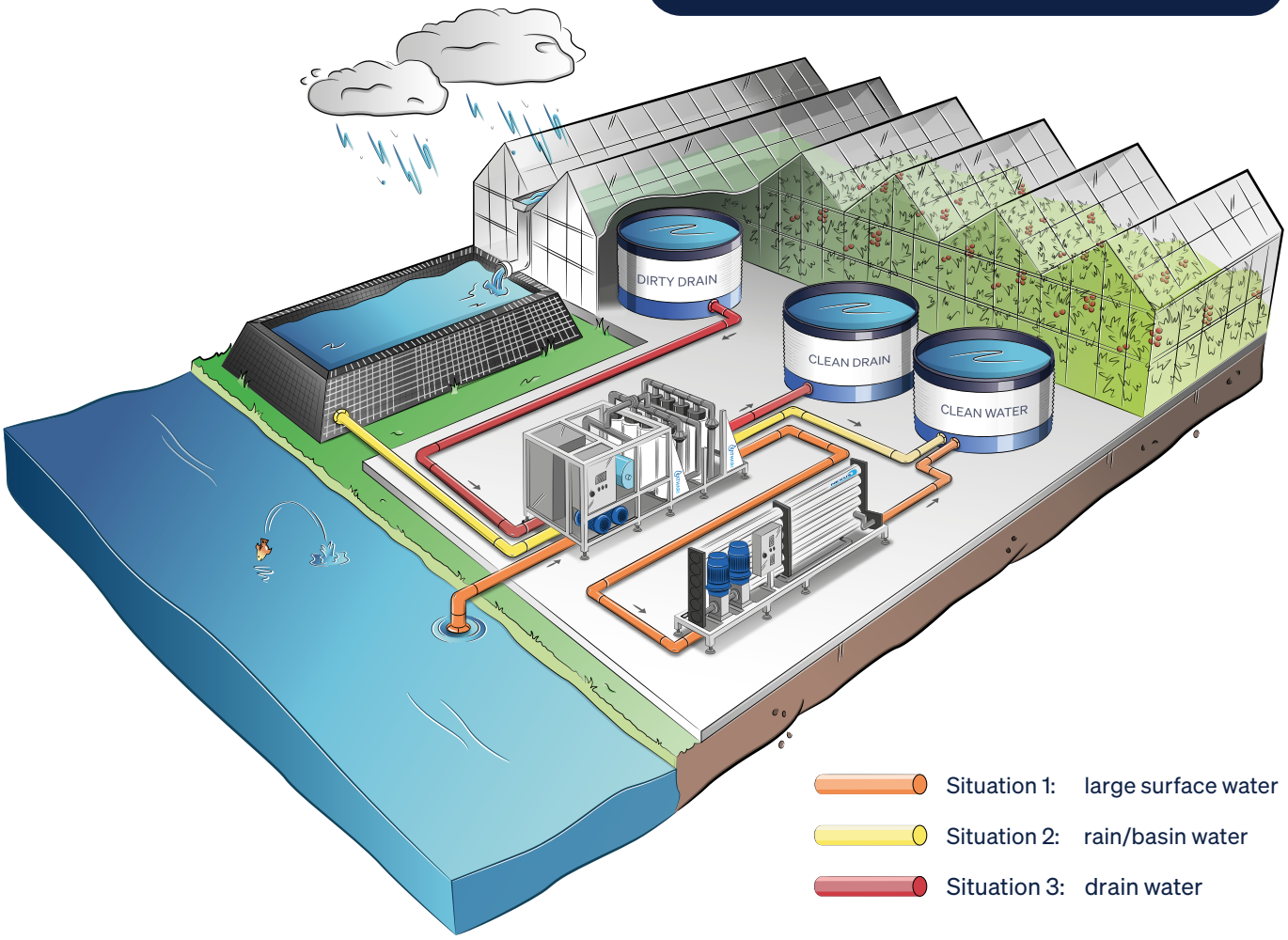
Suited for all situations
The Kathari is modular and therefore delivers any desired capacity.

Want to know more about the Kathari?
Simply contact your installation technician or one of our water treatment specialists via sales@vanderendegroup.com or +31 (0)174 51 50 50.

Watch the product video.

ADVANTAGES OF THE KATHARI

- Physical removal of:
  - viruses (Log4)
  - bacteria (Log6)
  - fungi (Log6)
  - organic pollution
- Less organic/biological pollution in the watering system
- Insensitive to water turbidity
- Very low operational/ energy costs
- Reduces environmental burden



PRACTICAL CASES

ResultsEurofins Agro Laboratories

	Before UF (cfu/ml)	After UF (cfu/ml)
Aerobic plate count 22°C cfu/ml	> 30000	< 1
Tot. number of fungi cfu/ml	109 *	< 1
Tot. number yeast and fungi cfu/ml	764	< 1

cfu: colony forming units

* The result represents an indicative value.

eurofins agro
LABORATORIES

Results Groen Agro Control

	Before UF (cfu/ml)	After UF (cfu/ml)
Pythium spp.	69	0
Fusarium oxysporum	4	0
Colletotrichum coccodes	10	0

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Application UF for ToBRFV removal

The Kathari UF is an excellent filtration technique for the removal of ToBRFV. This trial, conducted by Groen Agro Control, tested the effectiveness of UF of ToBRFV-contaminated drain water. After filtering ToBRFV-contaminated drain water with a UF filter, no contamination was found in a bioassay with two times five tomato plants. Therefore, in this test no virus was detected after ultrafiltration.

Results bioassay (number of ToBRFV-contaminated plants/number of inoculated plants)

	Before UF	After UF
Repetition A	5/5	0/5
Repetition B	5/5	0/5

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Improving Your Business

Van der Ende Group is an innovator, manufacturer and supplier of technical solutions in the area of climate, water, fluid technology and filtration technology. We produce and supply a wide range of pumps, water treatment systems, frequency converters, accessories, fans and industrial filter systems. We provide specialist advice and technical services for horticulture, construction, industry and the public and semi-public sector. Our many innovative and often patented products are sold worldwide. **Check our website for more product information.**

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