

# Healthier trees and fruit. De Nora solutions.

Technology originating from nature



NEXT CARE TECHNOLOGIES

AGRICULTURE & LIVESTOCK



# Treating trees

Out of experience De Nora, a team of specialists has been created capable of providing new solutions for the care of your trees and your integrated or organic fruit and vegetable production.



De Nora has a specific solution for trees in orchards and plants in vineyards and nurseries.

The application of electrolysed water solutions has demonstrated a greater plant resistance against **Valsa ceratosperma**, **Neonectria galligena**, **Erwinia amylovora**, **Venturia inaequalis** and they also act very effectively on fruit.



## Experimentation



Start of treatment in winter



Spring treatments



Treatments in subsequent Spings

### Effective against wood cankers

The effectiveness depends on weather conditions which may require extended treatment. An interesting case concerns the treatment of Fuji apple trees affected by *Neonectria galligena* canker and treated with a solution of potassium hypochlorite at 400ppm. The first cycles of treatment blocked the canker on the trunk and subsequently new wood was formed.



# Open fields and greenhouses



**De Nora solutions can reduce the risks to cut down infected trees, allow the recovery of orchards and increase the percentage of healthy products during and after harvesting. Environmental impact is significantly reduced.**



## **We analyse**

together with farmers the various needs associated with the type of crop and geographic area.

## **We assess the supplementary solutions**

we define the protocols for use, together with the producers; we instruct them on application procedures and dosages and also assess the results.

## **The production of active ingredients**

with our equipment is simple and has low operating and maintenance costs. All you need to do is load water and salt and switch the machine on. It consumes very little electricity and does not require particular maintenance.

## **Tests on tomatoes**



Untreated tomatoes



Treated tomatoes

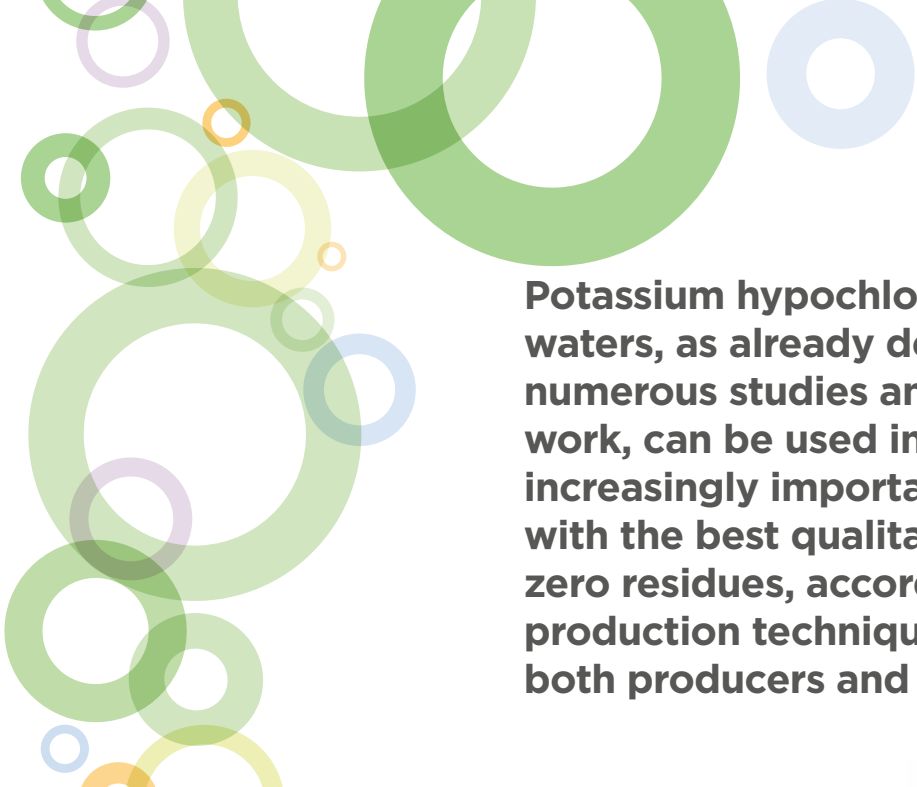
## **De Nora protocols**

developed during the experimental work with Verdenora<sup>®</sup>, allow plants to react more effectively against attacks from parasites. The beneficial effects are clear to see.

## **It counters fire blight**

Experimental work in nurseries, conducted at a research centre on Abbe Fétel pear trees for *Erwinia Amylovora*, led to a containment of the bacterial infection on flowers and on buds. The experimental work in the field over an observation period of 4 years led to good results in recovery and preservation of trees.





**Potassium hypochlorite electrolyzed waters, as already demonstrated in numerous studies and current experimental work, can be used in all sectors where it is increasingly important to obtain products with the best qualitative yields, with zero residues, according to sustainable production techniques that are safe for both producers and consumers.**



## For vineyards



An innovative contribution for producers of wine grapes and table grapes, who use production techniques geared towards reducing pesticides residues.



## For floriculture



A production factor capable of ensuring better plant growth conditions and better product shelf life.



## For nurseries



Technology providing support for an intensive production cycle that is heavily exposed to the risk of strong infection.



# EVA System<sup>®</sup>

## Potassium hypochlorite electrolyzed waters



### On site production

100 litres of active ingredient every 2 hours. Whenever and wherever it is needed. With no aggressive stabilizers.



### High yield

The potassium hypochlorite solution is normally diluted in a ratio of 1:10.



### Easy to use

Simple to set up, with automatic switch off at the end of the cycle.



### Economic

Low production costs, reduced maintenance, self-cleaning.



ELECTROLYZED WATER (POTASSIUM HYPOCHLORITE) EVA 100	PRODUCTION FOR CYCLE (equivalent grams of active substance)	VOLUME PRODUCED FOR CYCLE (litres)	KCI SALT (kg)	CONSUMPTION (kWh)	DIMENSIONS LxPxH (cm)	WEIGHT (kg)
	400	100	1,5	3	82x55x150	93

# After harvesting and storage

Sanitizing venues with Sodium hypochlorite electrolyzed water and ozone enables to limit contamination from pathogens. Ozone treatment enable to prolong product conservation both in storage and on the shelf, and to reduce pesticide residues, recycle process waters and wastewater. De Nora assists its customers at every stage: from problem analysis to finding the right application and technology solution.



## Cool storage rooms

To sanitize the air, prevent contamination, reduce the growth of bacteria, moulds and fungi while increasing the percentage of healthy products.



## Handling and selection lines

Contamination from bacteria, moulds and pesticides residues is reduced, preventing them from reaching people, operators and end consumers along the whole supply chain.



## Treatment of equipment

Boxes, bins, scales and tools can all be used without the risk of transmitting pathogens.



## Process waters and waste waters

Carefully treated with ozone, process waters can be recycled with a consumption reduction from 50% to 70% compared to traditional methods.





# A full range

The right equipment mix for all types of applications



### On site production

Whenever and wherever it is needed. With no need for storage.



### Easy to use

Simple to set up and with automated production.



### Economic

Low production costs and reduced maintenance.

### Sodium hypochlorite electrolyzed water

Produced by electrolytic process, it is effective against fungi, viruses and bacteria. Non-aggressive with materials and people.



### Ozone

It can be produced using corona technology, cold plasma or water electrolysis and can be used in a gaseous state or mixed with water.



ELETRYZED WATER (SODIUM HYPOCHLORITE)	PRODUCTION FOR CYCLE (equivalent grams of active substance)	VOLUME PRODUCED FOR CYCLE (litres)	NaCl SALT (kg)	CONSUMPTION (kWh)	DIMENSIONS WxDxH (cm)	WEIGHT (kg)
	400	100	1,5	3	82x55x150	93

OZONE	COOL STORAGE ROOMS	TRANSPORT PALLETS	WATER-COOLER	CALIBRATION WATERS	WASTE WATERS
Gas	•	•			•
Dissolved in water		•	•	•	
Combined gas/water		•		•	



# De Nora Next Care Technologies

For more than 90 years De Nora has been developing technologies and systems for electrochemical applications and it is today one of the international leaders.

De Nora has used all the expertise to create NEXT product portfolio, a full range of solutions aimed at the health and well-being of people, animals and the environment by developing dosage protocols and applications for a range of active principles as well as the machines that can produce them.

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AGRICULTURE & LIVESTOCK

FOOD INDUSTRY

PROFESSIONAL CLEANING

VETERINARY & ANIMAL CARE



**DE NORA**  
our research - your future

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