

# 👑 Projects & Development



## **AQUAFRESH:**

Combined strategies for the optimization of water use in the Fresh-cut processing industry

# Combined strategies for the optimization of water use in the Fresh-cut processing industry

The horticultural and Fresh-cut industry needs to react to the growing demands for food safety, competitiveness and its environmental impact.

Washing with fresh water is the main post-harvest process carried out by this industry to eliminate dirt and reduce the microbial load of ready-to-eat fruit and vegetables.

## The aim of the project is to:

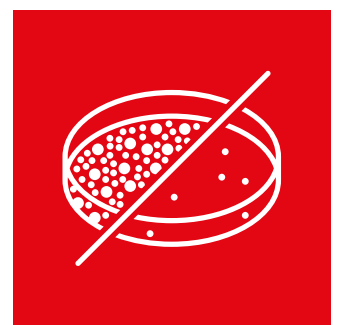
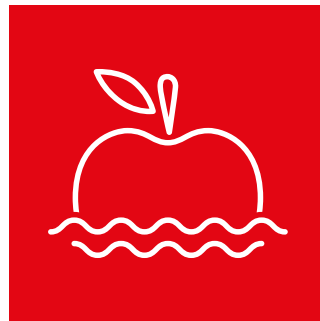
- Reformulate the current working system of the industry reducing both water and energy use during washing and disinfection, mitigating the environmental impact, and improving the food safety for end consumers.
- Provide the Fresh-cut industry with a new washing process offering an alternative to traditional chlorine-based disinfection systems.

## KRONEN active pre-wash system

A completely new kind of pre-washer will be designed by KRONEN. This pre-washer will integrate a number of features: bringing lettuce under water with the help of a water slide, separating insects with a removal drum, separating soil by mechanical washing, separating sand with a sand trap, separating product from water with an outfeed belt and filtering water before re-use.

As a design issue, it is important to consider hygienic design, avoid biofilm deposits during production, reduce water consumption by reducing the water to product ratio, and decrease energy consumption.

Finally, to guarantee a good washing and avoid cross contamination, the right combination regarding wash water re-use (and impact on COD), fresh water and Peracetic Acid (PAA) is required.



## Project partners:





### CITROSOL food safety assurance

A new sanitation strategy for water disinfection will be developed by CITROSOL in collaboration with CNTA. CITROSOL is leading the studies with the aim of:

- Evaluate the effect of the sanitation agent Citrocide, a Peracetic Acid (PAA) based formulation, on the quality of washing water and product.
- Determine the minimum effective dose and sanitizer residual to maintain water under hygienic conditions while ensuring product quality.
- Study the influence of COD, turbidity and organic matter accumulation in the washing water on the efficacy of the sanitation strategy.
- Eliminate chlorine Disinfection By-Products (DBPs) generation.

The final goal is to define the most efficient application of the sanitizer Citrocide to maintain wash water under hygienic conditions in order to avoid cross contamination while ensuring food safety and quality on Fresh-cut produce, offering to the industry an environmentally friendly solution.

Moreover, to guarantee the complete compliance of the process specification resulting from the mentioned studies, CITROSOL's Citrocide System technology will be adapted for the Fresh-cut processing industry. This advance technology will allow a fully automatic control and monitoring of the disinfection process.



#### Project details:

Time to completion: June 2017-December 2019  
More: [www.aquafresh.eu](http://www.aquafresh.eu)  
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#### Funded by:



Product range:



- **Belt cutting machines**  
GS 10-2, GS 20
- **Slice and wedge cutter**  
Tona S, Tona E, Tona S 180K
- **Special cutting and grid cutting machines**  
Tona Rapid, Tona Rapid 3D, Tona Rapid XL, Multicorer, TT 450
- **Cube and strip cutting machine** KUJ V
- **Spiral cutting machines** SPIRELLO 150, S 021
- **Multi purpose cutting machine** KSM 100
- **Cabbage cutting machine** CAP 68
- **Cabbage corer** KSB
- **Dicing, wedging and shaping machines** PGW, HGW
- **Vegetable and salad washing equipment**
- **Peeling machines**  
for citrus fruit, melons, apples, pineapples, potatoes, radish, carrots, turnips, beetroot, etc.
- **Spin dryers and de-watering systems**
- **Packaging machines**
- **Special machines**
- **Complete production lines**



We develop and manufacture stand alone and special machines as well as complete processing lines for the food processing industry.

We successfully implement production processes for you by effectively combining stand alone machines.

KRONEN - smart solutions and convincing technology for the food processing industry!

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