

PRESS RELEASE

19 June 2018

Innovative approach to hygienize the process water for ready-to-eat salads

KRONEN GmbH, together with partners, is currently developing a new solution for reducing germs in the process water used during the washing cycle of Fresh-cut salads. The goal is to increase the microbial safety of packaged ready-to-eat products without using chemical additives. The project named SiMoHyP is one of three research projects KRONEN is conducting at the moment.

The demand for ready-to-eat leaf lettuce has been increased massively over the last years. All bigger retail chains have completed their fresh food assortment by offering these kind of products. Microbial innocuousness is one crucial quality criterion when it comes to consumer safety and has to be guaranteed when producing Fresh-cut products.

During the production process for packaged leaf lettuce the salad is cored and tired leaves are removed, then it is cut, washed, dried and packaged in plastic films. The washing process is usually organized in two steps. The first washing cycle makes sure that heavy dirt is removed, such as adherent soil as well as liquids leaking from the damaged salad cells after cutting the salad. The second cycle is made for thorough cleaning.

Washing vegetables with potable water leads to a reduction of microorganisms from tenfold to hundredfold only. Since, depending on the kind of product, it must be assumed that the number of germs is up to 10^7 KbE/gFM at the beginning, the washing result has to be evaluated as critical considering these high germ numbers at the beginning. And the washing cycle implies the risk of cross-contaminations whenever microbial safe salad batches follow on batches contaminated with pathogens. Adding chemicals is one way to meet this problem, but this is sometimes rejected.

The project KRONEN is working on together with its partners ATB Leibniz Institute for Agricultural Engineering and Bioeconomy, aquagroup AG und Havita Berlin Frischgemüse GmbH is answering this fact. The so-called SiMoHyp project targets to develop an innovative method to hygienize the process water for ready-to-eat salads without using additives. For that reason, the partners want to make use of the fact that bacteria are killed within seconds, when the redox potential is higher than 650 or 700 mV. Concretely, this means that an electrolysis cell is developed and implemented in a salad washing plant, which can cope without any additives. Using the ingredients of the potable water only, a redox potential is realized in the process water which is high enough to decontaminate it. Besides, the water can be returned to the washing cycle without any risk of cross-contamination.

Hence, several benefits for the producers of Fresh-cut products are to derive:

- **Increase consumers' safety** due to a new method of hygienization **without additives**
- **Reducing potable water consumption** and thus **decreasing costs**, which is due to an optimized water use during the washing process by deploying cycle management.
- **Improvement of hygiene** and **reducing the danger of cross-contamination** during washing process

“In February 2017 we started the project SiMoHyP together with our partners ATB, aquagroup and Havita. When you look at the project stage we are around half-time. We are very confident to reach the planned targets by the beginning of 2019” tells Eric Lefebvre, Technical Director and responsible person for the project at KRONEN.

“The project is a worthwhile contribution for increasing safety and quality of food products and for saving resources at the same time. Our motivation is to develop innovative solutions for our customers. So, currently two other research projects are ongoing at KRONEN: Aquafresh and DEKONWA. The three projects deal with very different approaches to contribute to one and the same target: improve food safety without using chemical additives”.

The project SiMoHyp is funded by the Federal Ministry of Food and Agriculture by decision of the German Bundestag.

With support from



by decision of the
German Bundestag

More about the current research projects at:

www.kronen.eu/projects-development.

About KRONEN GmbH

KRONEN develops and manufactures stand alone and special machines as well as complete processing lines according to the customers' requirements – high-duty machinery for washing, cutting, dividing, peeling, de-watering, drying, and packaging food.

Today, KRONEN has 100 employees and is a globally operating supplier of machines and systems for the Fresh-cut, convenience, catering, specialty food and food industry with representations in over 80 countries and is selling its solutions in over 100 countries worldwide.

Due to the close co-operation with our customers and international partners, we consider it our commitment to keep traditional values such as quality awareness but also to react creatively and actively to the challenges of the global market.

Wherever crisp salads, fine vegetables and appetizing fresh fruit are beautifully prepared in quantity – KRONEN machinery is there, around the world.
In 2018 the company celebrates a 'double' anniversary: 40 years of KRONEN and 20 years of Zillgith/KRONEN. In 1978 KRONEN GmbH was founded and in 1998 KRONEN was taken over by Rudolf Hans Zillgith as the Managing Director.

Further information: www.kronen.eu

Contact person:

KRONEN GmbH Nahrungsmitteltechnik
Römerstrasse 2a
77694 Kehl am Rhein

Esther Müller

Phone. + 49 (0)7854 9646-161
Fax: + 49 (0)7854 9646-5161
Email: esther.mueller@kronen.eu

Christina Maier

Phone. + 49 (0)7854 9646-160
Fax: + 49 (0)7854 9646-5160
Email: christina.maier@kronen.eu

Pictures KRONEN GmbH:



Increasing consumers' safety by hygienizing the process water used during the washing cycle of Fresh-cut salads – without additives, this is the goal of the SiMoHyP project



Eric Lefebvre, Technical Director and Authorized Signatory at KRONEN is KRONEN's contact for research projects



R&D and Project Management team at KRONEN: Johannes Guenther, Eric Lefebvre, Andreas Ell, Stephan Zillgith and Robert Lankhart