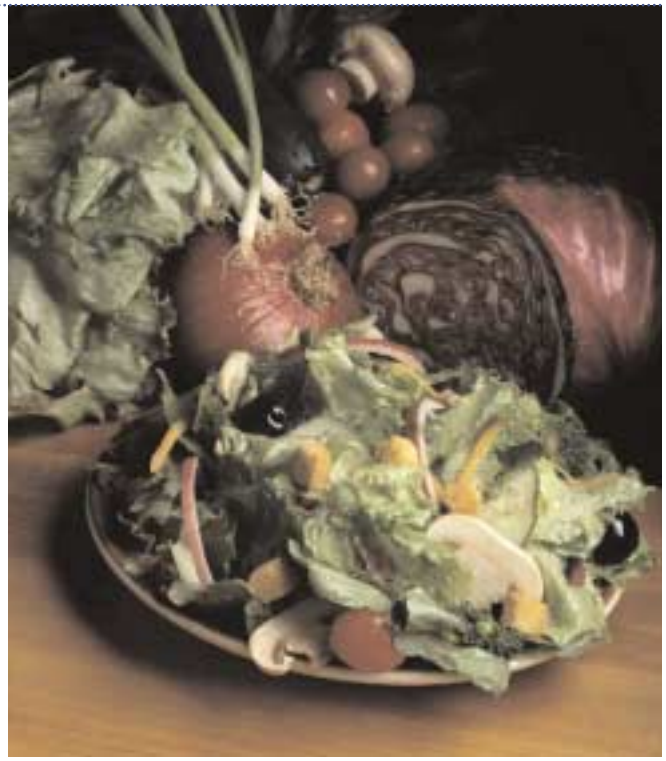
RPA Process Technologies

Produce Processor Selects Ronningen-Petter® DCF Filter for Innovative Sanitizing System

Higher Flow Rate
Uninterrupted Filtering
Unsurpassed Performance



A produce processing company in Tennessee, with assistance from an ozonation system manufacturer in California, has developed an ozonation system for cleaning and sanitizing water used to wash fresh-cut vegetables and lettuce. It is among the first of its kind to be successfully implemented in a fresh-cut processing plant, and the Ronningen-Petter DCF Mechanically-Cleaned filter is the processor's filter-of-choice.

- **Continuous filter:** Flume water is cleaned and recycled in an 800 liters-per-minute loop.
- **Fine filtering:** Improves the dissolution of ozone, resulting in dramatically cleaner water, longer run times, and reduced water consumption.
- **Labor savings:** Flume water replacement is required only once a day, instead of every two to three hours.

SITUATION

The company processes and packages fresh-cut vegetables and lettuce in bags for the ready-to-eat market. Produce is washed, sanitized and transported through the plant by flume water, which is recycled in a closed loop. Previous cleaning methods used chlorine to sanitize the flume water, however, the water quickly became discolored and contaminated with suspended solids and chlorine residue. As a result, the flume water had to be replaced every two to three hours.

To improve product quality and conserve water resources, the owner of the company and his team of consultants spent nearly five years developing an ozonated wash system that applied the known benefits of injecting ozone into water as a means of sanitizing the flume water. His goals were: 1) to obtain a longer shelf life, 2) fresher taste and lower bacterial counts for his product, as well as 3) reduce the plant's water consumption.

In the original system prototype, coarse suspended solids were removed from the flume water by a rotary screen with a two millimeter gap. It became apparent during initial testing, however, that fine suspended solids also needed removal before ozone was injected — to improve the dissolution of ozone in the flume water.

RPA PROCESS TECHNOLOGIES SOLUTION

After further design and testing, a new water cleaning and ozonation system was installed, which included two Ronningen-Petter DCF Mechanically-Cleaned filters equipped with 50 micron wedgewire screens. The DCF filters were placed immediately after the coarse rotary screen, to capture fine lettuce particles and prepare the water for ozone injection.

The DCF filters perform a self-cleaning action by mechanically scraping collected particles from the filtering screen with a patented disc that moves up and down the screen, parallel to the liquid flow. Particles are then purged from the collection chamber at the bottom of the filter. This self-cleaning action is performed without halting production, and provides the highest quality filtering under continuous demand. Because the screen is cleaned without interrupting production, a consistently high flow rate is maintained.

RESULTS

Ronningen-Petter DCF's continuous filtering capability means the flume water is cleaned and recycled in an 800 liters-per-minute loop without interruption. Its fine filtering improves the dissolution of ozone in the flume water, resulting in dramatically cleaner flume water, longer run times between water changes, and reduced water consumption. Now, flume water replacement is required only once a day, instead of every two to three hours. The company owner is also very pleased with the system's impact on product quality. His goals of longer product shelf life, fresher taste and lower bacterial

RESULTS *continued*

counts and decreased water consumption have been realized.

DCF also provides the additional benefit of improving the performance of a water chiller in the sanitizing system. Immediately after filtering, the flume water is pumped to a chiller where it is cooled to 5˚C by spraying the water onto heat exchanger plates. The high quality filtering provided by the DCF eliminates the risk of suspended solids clogging the sprayer nozzles, and keeps the water chiller at optimum performance.

RONNINGEN-PETTER **DCF MECHANICALLY-CLEANED FILTER**

The Ronningen-Petter DCF Mechanically-Cleaned filter is specifically designed to remove suspended solids from viscous fluids. The DCF filter has a patented cleaning disc that moves up and down the filtering screen, scraping debris from the screen and collecting it in a chamber at the bottom of the filter. Debris is periodically purged from the collection chamber by a discharge valve, in a process that takes less than seven-tenths of a second — with no interruption in production.

SELECTING THE RIGHT FILTER FOR YOUR PROCESS:
FACTORS TO CONSIDER

When selecting a filter for a particular application, the following criteria should be considered:

- How large is the process volume? What is the flow rate?
- Is it continuous or batch process?
- What are the material characteristics of the solids being removed? How large are the particles? Is the material hazardous? Can the material being removed be recycled back into the process?
- What are the waste disposal costs? How often do bags or cartridges need to be replaced? Can the waste volume be reduced or eliminated by switching to a different filtration method?
- What are the labor and downtime costs for filter or cartridge replacement? Can downtime be replaced or eliminated by switching to a different filtration method?

CONCLUSION

RPA Process Technologies is pleased that its Ronningen-Petter DCF Mechanically-Cleaned filters were chosen as a major component in the innovative sanitizing system developed by the produce processing company. DCF's continuous and high quality filtration make it the perfect solution for produce-washing applications, giving the company improved quality and, ultimately, making their company more competitive.

APPLICATION DETAILS

Filter model: (2) Ronningen-Petter DCF-1600s

Type of liquid: Wash Water

Pressure: 50 psi (3.4 bar)

Temperature: Chilled

Flow Rate: 211 gpm (47.9 m^3/h)

Contaminants removed: Fine vegetable particles and debris

DCF MODELS AVAILABLE

DCF-400	flow up to 30 gpm (6.8 m^3/h)
DCF-800	flow up to 60 gpm (13.6 m^3/h)
DCF-1600	flow up to 200 gpm (45.4 m^3/h)

INFORMATION

For more information visit us at www.RPAprocess.com, e-mail us at info@RPAprocess.com, or call us at +1 616 323 1313.

RPA Process Technologies
Ronningen-Petter • Aoustin • Filtres Philippe • Filtres Vernay • Malaxeurs Guittard

1-800-656-3344 (North America only) 1-616-323-1313 (worldwide)
www.RPAprocess.com info@RPAprocess.com