

Wine Filtration

Food and Beverage, Italy

Customer:	Wine bottler
Application:	Food and Beverage
Products:	Polyfil™ and Biofil™
Primary Motive:	Quality improvement
Location:	Italy
Project Date:	2018 - 2020
Division:	New Milton



Customer Overview:

A leading Italian cellar that vinifies, sparkles and bottles its own high quality wine grapes and also works with among others that it outsources.

Production can vary between 5 and 12 million bottles per year, depending on the specific vintage.

Customer's Problem:

The existing process line used an alternative competitor product range for their pre- and final filtration products.

The system had an hourly flow rate of 3000÷5000L/h according to the type of wine being produced. The cellar decided to pass from the former clarification steps to use Tangential Flow Filtration (TFF)

The winemaker wanted to improve the quality of wines and, concerning the microfiltration steps, respectively

- mechanical resistance
- thermal stability
- pre-filter testability.

Porvair Solution:

For the two prefiltration steps, Porvair's Italian distributor supplied the end-user with two steel adapters which allowed the insertion of nine cartridges of 30" each into the existing housing.

Project Overview:

After carrying out microbiological tests, the TFF technology was discussed with the winemaker and it was agreed to upgrade the system to use Porvair's Biofil™ II 0,65µm as final stabilization step (final filter).

This microfiltration line has proved successful for the following aspects:

- mechanical resistance
- thermal stability
- chemical compatibility: regenerations with an alkaline detergent have been made periodically
- duration: the cartridges have been replaced after approximately 18 months of use and over 6 million microfiltered bottles.

The winemaker acclaimed the Porvair products for the following reasons:

- for more structured red wines and with malolactic fermentation done, microfiltration was limited to P01 and BT120. BT120 was chosen because it was testable.
- for white, rosé and red wines, the transition to BT65 has made the wines less "stressed".
- the filtration yields were considered higher than expected, given that the replacement of the cartridges was previously necessary once a year, but with Porvair it was approximately 18 months.

System Information:

- Polyfil™ 1µm (P01S3BB) Absolute rated pleated Polypropylene cartridge filters
- Biofil™ II 1,2µm (BT120S3BB) Polyethersulphone membrane cartridge filters
- Biofil™ II 0,65µm (BT65S3BB) Polyethersulphone membrane cartridge filters

Other Opportunities:

- Wine bottlers
- Breweries
- Dairies