

A new way to handle your bottoms



Tank bottoms from juice settling can represent a major financial loss for any winery. With whole bunch pressed fruit, the lees after settling will be typically around 2%. This may not seem a lot but with grape prices of £2000 per tonne, this represents a loss of £40 per tonne. With crushed fruit this loss can rise to 5% and will be even higher with machine harvested fruit. The losses soon mount up. Traditionally, various methods have been employed to recover juice from lees to reduce this loss.

Rotary Vacuum Filters

This is a technology that was originally developed for sewerage treatment. The recovery rate is good and equipment cost is within the reach of a medium winery. However, the handling and disposal issues associated with perlite are problematic and operation labour intensive. In addition, the process is very oxidative and so the juice recovered is of limited quality.

Pressure Leaf Filters

This is the budget option and one which does not result in oxidation, but throughput is slow and cleaning a highly labour intensive and messy process.

Decanting Centrifuges

These are really only an option for very large wineries, due to the extremely high capital cost. Operating cost can also be high, especially service charges. The results are of good quality and the clarity can be controlled by regulating the product flow speed.

Crossflow Filters (hollow fibre)

Adapted units to treat wine, these typically have

spaghetti like hollow fibre membranes of 5mm diameter, to allow for high solids. The results are excellent with no oxidation products. However, throughput drops rapidly as the percentage solids rise. Above 20% solids, you quickly get a situation where the juice recovered does not justify energy consumed – or the time.

Rotary Crossflow Filters – enter stage left

Christened *Dynamos*, this new technology from TMC Padovan solves the above problems with an innovative design. Discs of a ceramic membrane rotate inside a housing through which the lees are re-circulated. A light trans-membrane pressure creates a flow of some filtered juice across the membrane to the outlet whilst the balance of the lees returns to tank. As with conventional crossflow filters, this sweeping motion helps to slow the fouling of the membrane surface. In addition, the rotation of the discs throws off solids and increases performance. Solids levels in the retentate of 70% are easily achievable with the 'economic' maximum at 80%.

During the 2020 harvest, trials were conducted at three English wineries with a small *Dynamos* unit. At two, the juice recovered was fermented separately and evaluated after fermentation. The results were excellent with very good fruit expression. In fact, the process achieves a type of 'stabilisation' effect due to contact on the solids and the wine produced is of very high quality; proving that you can indeed make a silk purse from a sow's ear.

In addition to representing TMC Padovan, BevTech has now purchased their own *Dynamos* unit and will be offering a contract service from harvest 2021. Both as a mobile service, and for lees brought to the BevTech premises.



> Lees at end of run



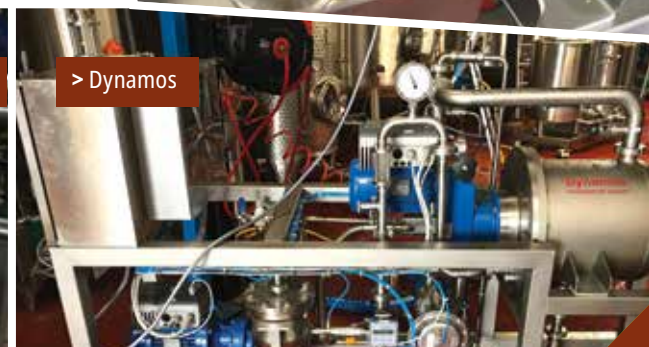
> Finished lees in tank



> After filtration and before



> Photo ceramic disc



> Dynamos