

**For
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Results

The installation of continuous inline MIVI viscometers after beer fermentation tanks at a leading American brewer in the 1990's gave successful results in terms of beer consistency and beer quality. This design has been duplicated on 37 fermentation lines in several plants in the country. Some key results with the use of MIVI sensor matched with 9200 electronic, calibrated for 0 – 100 cP are:

Viscosity variation detection	0.1 cP
Corresponding yeast in beer quantity	0.25%
MIVI sensor repeatability	0.02% of the measurement
Beer quality and consistency	100%

Benefits

Inline viscosity monitoring in brewery process is an easy way to follow fermentation step and to detect consistency differences between yeast and beer. It provides the following advantages:

- Improves process control by securing and optimizing flow transfers
- Increased yeast recovering and consequent savings
- Ensures consistent quality of end-product: stabilization of yeast level in beer manufacturing batches
- Ensures customer loyalty to the brand

Return on Investment

A brewery process optimization with simple installation of MIVI inline viscometers on fermentation lines brings the following results to the manufacturing company:

- Reduces beer losses during yeast recovery
- Increases production capacity by eliminating or reducing costly filter cleaning or centrifugation times
- Improves yeast recovery

The MIVI helps to get the optimal interface detection between yeast in beer in order to save the maximum amount of beer while preserving a perfect cost ratio for filtration and centrifugation steps according to the proportional yeast level.

These benefits are difficult to translate into numbers but it can easily be said that it can solve a company's major productivity issues with one quick fix. For this specific brewing process, ROI is usually observed in only 1 month.

Food and beverage users:

Anheuser Busch, Nestlé, Purina, Unisabi (Mars Petcare), Gervais, Danone, Dairy Crest Foods, La Roche aux Féés, CECA (Rousselot), Bongrain, Elle & Vire, Orjan, Diepal, Rocamat, Sucrieries de Souppes, Bénédicte, Crista Union, Sodiaal, Sucre et raffineries de Bresles, Patisfrance, Ifremer, Watson Victor, Kraft General Food, Ezhai Pharmaceutical, Kavli, Chamtor, FMC Corporation Delaware, France Glace Findus, Firmenich, Institut Für Getreideverarbeitung, Red Star Bio Products, University College, Nippon Yushi Tokyo, Tiger Käse A.G., Bulldog Sauce K.K., Hijos de Ybarra, Sucrieries d'Artenay, Nothum Industries, General Mills Yoplait, Q.P. Corporation, Liebig, Taura, Gat Foods, Maruwa Yush, Rexim, Sacrofina-Sugab, Boursin, Fould Springer, Tetra Pack, Marie Surgeles, Fromagerie de Vihiers, Grenco, Ganir Ltd, Zelandia, Hilcona, Frieslandfoods, Punggi Premium Goods Agricultural Coop, Clextral, Laita, Voltrion, Koopmans, Relco, Sun river, IGV, Meura, Sodebo, FrymaKoruma Neuenburg, Yeo, Bel, Sodiaal, Waterford Co-op, Norske Meierier's, Générale Ultra Frais, Valio Ltd., 3A S.A. Emmi Fondue AG Suisse

Guide for identifying viscosity measurement needs

Topics and Key Points

When pumping the fermentation / maturation tank before filtering, how is performed the detection between the yeast phase and the beer phase?

Phase detection between beer and yeast can be a simple ratio between time and volume, or a visual human inspection. These controls are not precise and do not allow to optimize recovery and manufacturing. Precise phase detection thanks to sensitive consistency meter or viscosity meter allows better adjustment of the optimum set point between beer and yeast.

Are customer claims at a high level or have they increased?

The majority of customer claims stems from issues with the end product. If a packaged product is delivered to a store, customers return it and complain about quality, there are enormous consequences on sales and brand reputation. Using an inline viscosity control during the manufacturing process assures a constant beer quality.

Have you observed yeast quantity differences from one batch to another? Amongst the various suppliers, are there noticeable variations in the ingredients?

Even a minute difference in the ingredients must be detected and corrected and the MIVI is the ideal tool that provides such control.

How much maintenance is performed? What is the cost of each maintenance episode? Do you experiment filter clogging?

Frequent maintenance intervenes with production. Maintenance itself costs money, and production lapses generate loss.

Have you noticed irregularities in filtering time? Has it been increasing?

Uncertain or increasing filtering time indicates a process inconsistency. The root cause of inconsistency in the brewing process is the yeast behavior and its unstable presence in beer. Simply put, an inline viscometer can help reach optimal consistency in time and avoid increasing filtering times and consequent wastes.

Do you experiment difficulties in separating yeast from beer and determining the correct yeast level?

Your recipe is unique and must be recognizable amongst others. Only consistency in your yeast in beer level will guarantee final end product taste, flavor and quality.

Sofraser recommended solution

MIVI 9510 with sanitary design	Possibility to set up relays and alarms Can be combined with external controller
MIVI 9100 with sanitary design	Low price positioning Can be combined with external controller

Contact Sofraser for detailed sensor configuration

Competitors in this area:

Worldwide:

- Turbidity Meters (low cost)
- Vionec Technologies / Krohne

This system is also efficient in:

- Phase detection applications in pipelines, process flushing after production, yoghurt manufacturing
- Fermentation processes
- Food & beverage

