

DryExx SD



DryExx SD is a new water-based semi-dry lubricant containing amine acetates and surfactants. It has very good environmental properties, especially for the compatibility with anaerobic wastewater systems.



BACKGROUND

Heineken Gösser in Austria had concerns about the impact of chemistry in general and lubricants more specifically, on the wastewater treatment plant.

In the last years they did a continuous effort to reduce the water-to-beer ratio, and the lower consumption of water also resulted in higher concentration of some substances in the Wastewater Treatment Plant owned by the Municipality where the final effluent is sent. Consequently, the usage of DryExx GF was under scrutiny.

The plan was to replace DryExx GF by DryExx SD to have a much lower impact on the WWTP and avoid issues with local authorities. This new lube was e.g. tested up to 750ppm and even at that high concentration no toxic effect was detected on the anaerobic WWTP.

When any chemistry is having a high toxicity, it will impact on the WWTP and can kill most of the bacteria responsible of degradation of organic waste. If this happens, authorities will ask the plant to immediately stop production as the microbiological activity in the WWTP has to be recovered. Furthermore, as the WWTP is managed by the municipality, the brewery would also get a high penalty for the impact created by the effluent in the WWTP and the environment.

SOLUTION

DryExx SD replaced DryExx GF keeping the same settings we had for DryExx GF in a first stage. Later, settings were changed to keep good lubricating performance and exploring ways to reduce the amount of lubricant and water by extending pause times.

Concentration was initially the same in both cases, but with the plan to extend pause times in the different points of the lubrication system until affecting the lubrication effect. With a following concentration increase, we'll be creating a film on the conveyor, recovering optimal lubrication effect and extending pause times again until an optimal situation. Furthermore, this concentration increase ensures lubricant is also acting as a cleaner keeping the line in proper hygiene conditions. Total lubricant consumption was always below the initial consumption despite the concentration increase.

In this first stage, extended pause times achieved a significant reduction in the consumption of water and chemistry as can be seen in the data below:

Section	Lube	Pause Time	Pulse Time	Total Time	Consumption reduction
1	DryExx GF	65 secs	10 secs	75 secs	21%
	DryExx SD	85 secs	10 secs	95 secs	
2	DryExx GF	60 secs	20 secs	80 secs	15%
	DryExx SD	75 secs	20 secs	95 secs	
3	DryExx GF	30 secs	10 secs	40 secs	27%
	DryExx SD	45 secs	10 secs	55 secs	

Fig. 1.- Lubricant usage optimisation achieved by DryExx SD



RESULTS

The total value created for Heineken Gösser goes beyond the savings they can achieve with the reduction in lubricant and water consumption.

The biggest value is linked to minimizing the impact of the lubricant on the WWTP, which is handled by the municipality and has generated some warnings from local authorities regarding the quality of the effluent. By replacing the existing lubricant (DryExx GF) by the new DryExx SD, the effluent was more sustainable and authorities immediately detected the improvement in the WWTP reporting a better effect and function.

With the support of our Technical Excellence team, the customer was also able to optimize lubricant and water consumption ensuring the right lubrication performance in different conditions.

This full lubricant replacement and optimization process was done in 3 months.



Fig. 2.- DryExx SD being dosed by nozzles.

CONCLUSION

DryExx SD significantly reduced the risk of harmful impact of lubrication on the wastewater treatment plant managed by the authorities, avoiding previous issues with the quality of the effluent and also supported Heineken Gösser in their plans to keep on reducing water consumption.

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