TREATING WATER WITH RESPECT

David Gaskill discusses how valuable water is within the food industry and why it is important to respect it as a precious resource.

Wastewater is generated through various processes, especially through the cleaning and rinsing of production vessels, pipework, storage tanks, bottles, and equipment. With this in mind, it is essential that all wastewater is treated before either being reused or released offsite, to protect the production process and the environment, respectively.

If a company discharges wastewater above discharge consent limits, it is likely to incur fines, as well as unwanted publicity and damage to the brand.

For some factories with smaller volumes of wastewater produced, instead of treating the wastewater onsite, it can be considered cost-effective for it to be tankered away. However, tankering relies upon space being available onsite, which is often in high demand to store wastewater and requires careful coordination of a frequent pick-up process. It's far from ideal but could be the most cost-effective way of disposing of the wastewater.

So, what other options do decision-makers within the food and beverage industry have when it comes to wastewater treatment?

Treating and reusing

Just because water has been used once in a certain process, it doesn't necessarily mean that it's no good for anything else. Certainly, some sites can save money by reusing water. This can happen in the vegetable processing industry, for example, where washwater can be used multiple times to rinse vegetables, before potable water is introduced for a final rinse.

To enable this cost-saving process, the washwater simply needs to pass through a water treatment system often consisting of Lamella Settlement Tanks or Dissolved Air Flotation (DAF) Units.

With the vegetable processing industry being largely seasonal, it can often make financial sense to hire the lamella or DAF to function onsite just for the few months of the year that it is actually required. This saves costs in the off-season and bolsters the site's performance when necessary.

Anaerobic technologies, followed by aerobic and downstream processes, are good ways for wastewater to be treated in larger production facilities. Also, valuable biogas is produced from the anaerobic stage. Once such solutions have done their job, it's often the case that water can be reused as boiler feed water or chemical make-up water.

In addition to weighing up the best water treatment systems to incorporate in plants, whether that be using a Lamella Settlement Tank, a DAF Unit, anaerobic technologies or aerobic processes, decision-makers in the food and drink industry must also consider their own individual capacities.

What manpower is available to run this treatment system? What are the contaminants that need to be treated? Where will the sludge that is produced be disposed of?

The answers to these questions will be different depending on the nature of the plant. This is why bespoke water treatment systems that consider the individualities of a facility provide the ultimate solutions.

It's also important to consider any future planned growth for a factory. If this is done properly, it ensures that treatment stages in a plant can be easily adapted to meet future loading and flow demands.

Hiring treatment solutions

The construction of a treatment plant can take several months, but water being used throughout the site will still need to adhere to the discharge consent limits in the meantime. With this in mind, temporary treatment plants can be hired to ensure that discharge compliance is met while not impeding the continual operation of a factory. Hiring in equipment also means that the temporary treatment process can collect data to optimise and inform the design of a full-scale plant.

Conclusion

The importance of water in the food and beverage industry must not be undervalued. It is a core part of the process of producing all of the food and drink that we enjoy, and so its treatment must never be neglected. ■

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