

A photograph of a sugar mill's processing area, showing several large, cylindrical rollers and conveyor belts. The machinery is illuminated by warm, yellowish lights, creating a dramatic, industrial atmosphere. The rollers are arranged in a row, and the overall scene is dark with highlights on the metal surfaces.

Increasing profit while reducing product loss

Sugar production, USA



The demand for sugar continues to rise faster than supply, and the shortage has created a demand that requires sugar producers to be more efficient. The losses in the production process can be significant and require waste treatment downstream, so manufacturers must find ways to improve productivity while reducing losses.

With rising energy costs and sugar prices around the world, the sugar industry continues to seek innovative solutions to minimize product loss and increase process efficiency in order to become more profitable.

Find the answers in mist elimination

One Munters customer in the sugar industry uses two pre-evaporators and two evaporator trains, with a total of eight evaporators and seven pans. The evaporators are used to evaporate the water from the squeezed sugar cane to reduce the liquid content. This plant, which is based in the USA, was experiencing heavy losses of sugar to the barometric condenser which is used to flash cool the steam back to a liquid state for disposal.

The Munters engineering team, alongside the customer, worked together to look at the present evaporators with various installed types of mist eliminators to find a better solution which would help capture the lost sugar. After a full inspection of all the units, it was determined that the best way to enhance sugar capture would be to remove any older, less efficient mist eliminators (also known as catchalls) and install a Munters mist elimination system. After a trial period, it was determined that the mist eliminators were increasing the sugar capture by more than two times!

Case study:

Increasing profit while reducing product loss in sugar mill.

Advantages:

- Efficient recovery minimizing sugar loss
- Predictable performance
- No clogging design of the mist eliminator



DH 5000 droplet separator (mist eliminator).



DV 270 mist eliminator.

Optimizing the process

Due to the large amounts of energy required to operate an evaporator train, the loss of sugar equates to a significant loss of profits. Fuel consumption and treatment of discharged caustic materials contribute to these high profit losses. With an efficient mist elimination system, there will be less fouling of the mist eliminators and greater recovery of sugar. Also, a lower pressure drop across the evaporator contributes to improved output and saves the mill money.

Sugar refining, whether from beet or cane, also highlights the problem of viscosity. Concentration of product in the evaporation process requires efficient mist eliminator vane design to capture and return the product efficiently without clogging.

For the customer in the US, it was determined that a complete framed mist elimination system would be provided by Munters, with equipment being manufactured in its Fort Myers, Florida facility. The framing components were shipped to the sugar mill where plant personnel assembled and welded the parts into full face units that were installed on the outlet of the evaporator. They also installed sight glasses on the drains of each mist eliminator to view the sugar capture. The results are amazing, according to the customer. Munters has worked with various OEMs (Original Equipment Manufacturers) in the industry and has also worked directly with end users.

Would you like to find out if Munters has a solution for your company too? If so, please visit our website, www.munters.com/food

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