

IQF Freezing berries: The challenges of dehydration

Detail Introduction :

Dehydration of a product is a vital aspect to consider during the freezing process. The reason is that the loss of water directly impacts the quality and weight of the product. As a result, dealing with dehydration is one of the most important issues food processors have to face, as it can lead to lower yields and profitability. The same can be said for suppliers of freezing solutions.

Sana Rehman, the marketing coordinator of OctoFrost, states that dehydration is an especially important factor when freezing berries: "When it comes to berries, this issue can become even more critical, as these products consist of 85 to 92% water. And so, it is most important for food processors to know how proper dehydration works since that is where gaining control over the entire process starts, which in turn ensures that losses of profit or damage to the quality of the product are minimized. As the product is frozen, it is exposed to a low-temperature airflow. As there is a difference between the humidity in the product and the humidity of the airflow, this will cause moisture loss, as the product releases it through its membranes."

The OctoFrost IQF Freezer allows for the moisture to be locked inside the product, Rehman explains. Several factors are involved in the freezing process, leading to dehydration. As a start, the freezing time itself; the shorter this as short as possible will achieve rapid crust freezing. This immediately locks any moisture inside the product, preventing its loss. Next, the aerodynamics created inside the freezer is determined by temperature, air pressure, airspeed, and air humidity. It is vital to control these values to avoid any snow-formation, which is a direct symptom of high levels of dehydration."

REHMAN STATES THAT the IQF Freezer can minimize dehydration drastically compared to other solutions. "OctoFrost clients have stated that the dehydration levels of their products range between 0.1 and 0.5% on average, depending on the type of product. For comparison, other solutions on the market reach between 1% and 5% of dehydration. Our line can limit the dehydration due to the IQF OctoFrost freezer's fans. The OctoFrost freezer creates unique aerodynamics stipulated for each type of product. As a result, each application can be processed under the optimal and required combination of airspeed, air pressure, and relative humidity. Dehydration is reduced to a minimum with the right balance of continuous airflow and airspeed."

"As berries consist of a high percentage of water, it remains pivotal that food processors control water loss; otherwise, this will seriously affect the product's quality, appearance, and weight. Customers claim that fluidized bed freezing is more efficient than static freezing when processing berries. It doesn't compromise on quality and allows for a larger quantity to be processed in a shorter time. The challenge is to optimize the settings of airflow and airspeed. Thanks to the adjustable airflow of the OctoFrost IQF Freezer, optimal conditions can be met for each type of berry, thus achieving energy efficiency and increasing the yield." Rehman concludes.