

Best Practices for Processing IQF Spinach

Detail Introduction :

In 2018, China's export of frozen vegetables to Japan increased by 7%, with stem vegetables such as asparagus and spinach accounting for the most significant increase. Demand for frozen spinach is growing in Japan. The export from China increased by 14% in 2018.

Why choose frozen spinach over fresh?

We typically choose fresh vegetables over frozen because we assume fresh vegetables are more nutritious and dense. However, this is rarely the case. Fresh vegetables often require long-distance transportation. On average, fresh vegetables take 1-4 weeks to reach grocery stores. During transportation, fresh vegetables remain packaged and can easily bruise and rot, losing nutrients and appearance. A delicate and highly perishable leafy green like spinach will likely spoil and become slimy, thus losing its market value. Fresh spinach often sits in stores for days before someone buys it. Fresh vegetables can be exposed to various conditions and improper storage temperatures that can change their quality, including loss of nutrient content before consumption. Research has shown that the number of vitamins and minerals in frozen spinach may be higher than in fresh spinach. Frozen spinach is especially rich in vitamin E and vitamin C, which help cells grow and function.

Best Practices - Spinach Processing

IQF is the best way to process spinach. The imperative to preserve the good quality of spinach is not only IQF freezing but also to perform the correct processing steps before IQF freezing. When spinach is harvested, its color, texture, and aroma change rapidly because enzyme activity continues unabated. As a result, the nutritional value of spinach decreases, and by the time it reaches people's plates, it's questionable how much of it remains. On-site processing of freshly harvested spinach reduces the number of nutrients lost.

Blanch and chill: keep nutrients

To deactivate the enzymes and preserve the spinach's dark green color, nutrients, crisp texture, and aroma, a quick blanching is a crucial step that must be done. Water blanching provides more precise temperature control than steam for consistent product quality. OctoFrost IF Blancher allows for a second temperature zone to lower the temperature in the final blanching stage for delicate produce such as spinach to prevent over-blanching. The rain shower system on the OctoFrost blancher provides 5 to 10 times the water volume, infiltrating the spinach leaves for even and fast blanching.

To achieve the best possible texture and color, spinach is chilled immediately after blanching to stop the blanching process and prevent overcooking. The OctoFrost IF cooler ensures rapid and uniform cooling as the cold water gently falling on the product through the rain shower system. The temperature in the

OctoFrost™ is always kept below the critical 6°C to inhibit bacterial growth.

Drainage (drainage) - Maintain good product separation

After blanching and cooling, the spinach should be dewatered to avoid clumping at the IQF freezing stage.

There are two common methods for draining wet spinach.

The first is to press the product under a spring-loaded cylinder, and the second is to use a centrifuge.

However, these methods typically form spinach lumps that must be loosened before freezing. To solve this

challenge, OctoFrost developed a new piece of equipment - a Tedder that gently smooths and separates

drained spinach.

IQF freezing: the final touch

IQF frozen spinach can be stored for a long time; Its nutritional value is preserved thanks to a good blanch

that deactivates the enzymes in conjunction with rapid freezing at a very low temperature that stops ripening

development. With slow freezing methods, the larger water crystals that form at the cellular level of the

products destroy their cellular structure. Therefore, the product loses its shape when thawed, which results in

means a loss of liquid and nutrients. However, IQF quick freezing only forms small water crystals inside the

spinach cells without damaging the cell walls preserving the natural shape of the leaf. The result of high-

quality IQF freezing is a great-looking thawed spinach leaf packed with nutrients and flavor.

A couple of features make the IQF OctoFrost achieve a high-quality result. The plates in the OctoFrost IQF

Freezer use asymmetrical motions to create gentle fluidization, therefore gently separating the IQF spinach

leaves. The speed of the OctoFrost™ fans is adjustable to prevent the spinach from flying into the coils.

OctoFrost's in-depth knowledge of the complex processing of sticky, brittle, and delicate products like

spinach makes the OctoFrost IQF Processing Line a unique solution for processors aiming to offer the best

quality products discerning consumers. Today's consumers.