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 broc
spinach accounting for the most significant increase. Demand for frozen spinach is growing in Japan; its ex
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 nutrient-
However, this is rarely the case. Fresh vegetables often require long-distance transportation. On average,
vegetables take 1-4 weeks to reach grocery stores. During transportation, fresh vegetables remain packag
can easily bruise and rot, losing nutrients and appearance. A delicate and highly perishable leafy green lik
will likely spoil and become slimy, thus losing its market value. Fresh spinach often sits in stores for days b
someone buys it. Fresh vegetables can be exposed to various conditions and improper storage temperatu
can change their quality, including loss of nutrient content before consumption. Research has shown that t
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 B, 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
freezing but also to perform the correct processing steps before IQF freezing. When spinach is harvested,
texture, and aroma change rapidly because enzyme activity continues unabated. As a result, the nutritiona
spinach decreases, and by the time it reaches people's plates, it's questionable how much of it remains. O
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 fresh
quick blanching is a crucial step that must be done. Water blanching provides more precise temperature c
than steam for consistent product quality. OctoFrost IF Blancher allows for a second temperature zone to l
temperature in the final blanching stage for delicate produce such as spinach to prevent over-blanching. T
shower system on the OctoFrost blancher provides 5 to 10 times more water volume, infiltrating the spinac
for even and fast blanching.

To achieve the best possible texture and color, spinach is chilled immediately after blanching to stop the b
process and prevent overcooking. The OctoFrost IF cooler ensures rapid and uniform cooling due to the c
gently falling on the product through the rain shower system. The temperature in the IF Chiller OctoFrost™
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.
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. How
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 smoothes and separates drained sp

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
deactivates the enzymes in conjunction with rapid freezing at a very low temperature that stops microbial
development. With slow freezing methods, the larger water crystals that form at the cellular level of the pro
destroy their cellular structure. Therefore, the product loses its shape when thawed, which also means a lo
liquid and nutrients. However, IQF quick freezing only forms small water crystals inside spinach cells witho
damaging the cell walls preserving the natural shape of the leaf. The result of high-quality IQF freezing is a
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
use asymmetrical motions to create gentle fluidization, therefore gently separating the IQF spinach leaves

speed of the OctoFrost™ fans is adjustable to prevent the spinach from flying into the coil.
OctoFrost's in-depth knowledge of the complex processing of sticky, brittle, and delicate products like IQF makes the OctoFrost IQF Processing Line a unique solution for processors aiming to offer the best quality discerning consumers. Today's consumers.