

King Son Vanilla Curing Chamber 2.0

FOODTECH

KSDN

* King Son Vanilla Curing Chamber ferments Taiwan planted vanilla pods, its aroma is more layered than foreign imported vanilla pods, and its appearance is better, more brightness.

Revolutionizing Solutions with Pioneering Frozen Vanilla Pod Processing Technology

King Son Vanilla Curing Chamber 2.0

In addition to enhancing program-controlled performance for the traditional five vanilla processing steps (Killing, Sweating, Curing, Drying, Conditioning), this chamber is newly equipped with a "**frozen vanilla pod processing function**." With automated program control, it can address abnormal weather conditions, making vanilla processing more labor-saving and efficient.

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The traditional curing processing time for Vanilla pods requires 8 to 9 months. The lower rainfall rate in the equatorial is where vanilla mostly cultivated regions are relatively free of natural disasters. Although Vanilla can be planted in other regions, however, it's climatic conditions (too low or too high temperature, short sunlight hours, frequent rainy season, even snowing) are inconducive to the open-air environment curing processing for vanilla pods [Killing \rightarrow Sweating \rightarrow Curing \rightarrow Drying \rightarrow Conditioning].

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The Sky's Mood - The Climate Conditions Affect Every Details of Curing Processing in Traditional Open-air Environment



	Weather	Temperature	Humidity	Pollution	Manual labor	Time	Process Time	Loss
Killing		Water temperature management is crucial			Manual labor-intensive handling in a short period of time	Time-consuming for continuous operation (5 minutes required for each batch)	Completion required within 24 hours after all pods harvested	Not easily to be consistent (Over-ripening, lack of humidity)
Sweating	Rainy	Low temperature Insufficient sunlight		Heat insulating wool cover				Inconsistent level of sweating Get moldy
Curing	Rainy season	Low temperature Insufficient sunlight	High humidity	Heat insulating wool cover	Daily bursts of intensive physical labor handling (moving in and out)	The burst handling time is very concentrated every day (high temperature exposure under the sun shining)	Long processing cycle 7 to 45 days	Moldy, over-dry Not enough aroma
Drying	Typhoon	Easily exceeded average temperature	High humidity	Outdoor dust / PM2.5	Moving in and out daily	The burst handling time is very concentrated every day (high temperature exposure under the sun shining)	A long period of time Up to 2 months	Moldy or too dry
Conditioning		Inclined to be low/high temperature	High humidity				A long period of time Up to 2- 4 months	Poor flavor
Pollination	The tir demar	The time for curing processing in open-air environment "[Sweating Drying] and [Pollination] just overlaps, resulting in tight manpower demands (by Taiwan climate and Vanilla pods curing process schedule)						

enhanced

"Use The Equipment, King Son Vanilla Curing Chamber for Vanilla Pods Curing Processing, Free of Climate Impacts"

Perform the curing processing in King Son Vanilla Curing Chamber, free the worries and impacts from rainy days, rainy season and monsoon, which avoids climate-related issues caused cured quality down, such as excessive humidity, mold, and low temperatures, etc.. The five stages of curing processing for Vanilla pods - [Killing, Sweating, Curing, Drying, Conditioning] can be done completely by one person.



*The actual sales cases reference and performance, include in Japan (Kumamoto, Nagoya, Chiba, Okinawa) and in Taiwan (Taipei,Miaoli, Changhua,Puli, Guoxing Township,Yunlin, Tainan, Taitung)



*The manpower should be allocated to concentrate on the pollination of Vanilla orchids In the daytime; the curing processing by the chamber and Vanilla pod's quality inspection (sorting and grading) can be carried out in the afternoon or evening.

" 'Vanilla' is known as the Queen of Spices World, more than just an agricultural product, is able to concoct the local terroir aroma and create a smart route for the craftsman and Vanilla flavor production by novel FOODTECH - by using King Son Vanilla Curing Chamber and curing processing methodology realize professional distinctive craftsman Vanilla flavor for global growing market demands on natural Vanilla."

To have Vanilla pods with characteristic flavor, the most important thing is to master the temperature and humidity changes in the curing processing. King Son has designed a King Son Vanilla Curing Chamber with professional temperature and humidity control capabilities, that can simulates and generates the natural curing conditions for Vanilla pods in the chamber, [the convection heated air for Killing, precise constant temperature for Sweating & Fermentation, variable temperature to remove humidity (dehumidify) for Curing processing, day and night variable temperature for slow Drying, constant temperature for Conditioning and Ripening] that is not affected by the climate, making it easier for the craftsman to produce worldwide class high-quality Vanilla pods and its flavor.



King Son Vanilla Curing Chamber cured processing Vanilla pods with Enchanting Terroir, Exquisite "Terroir" aroma and flavor represents the unique presentation of various agricultural and livestock products under a specific climate, terrain, soil, and cultural elements.

"The Novel Design, A Very Unique, Distinctive Equipment for Vanilla Pods Curing Processing"

Nine Secret Recipes to Concocting the Terroir

Built-in 5-stage programs for curing processing vanilla pods

The operation functions of King Son Vanilla Pods Curing Chamber can be setup for continuous (by the Program Link) or individual stage running , that perform Vanilla pods curing processing in each stage (Killing, Sweating, Curing, Drying, Conditioning) and visually display the processing temperature and humidity curves in each stage.

By using Program Link function, easily to perform the automatic and continuous curing processing operations in the stages of Killing and Sweating.





The convection heated air for Killing, precise constant temperature for Sweating & Fermentation, variable temperature to remove humidity (dehumidify) for Curing processing, day and night variable temperature for slow Drying, constant temperature for Conditioning and Ripening.

A record of monitoring the temperature inside the Vanilla pods throughout the curing process

During Curing processing, measure and record the internal curing temperature curve of Vanilla pods.

ummary temp		
名稱	數值	單位
Actual temperature	42.53	°C
Actual humidity	81.9	%RH ℃ %RH
Temperature setting	45.00	
Humidity setting	0.0	
Fermentation temperature one	42.98	°C
Fermentation temperature two	38.53	°C

Built-in two sets of temperature sensing probes that are inserted into the Vanilla pod to measure and record the internal temperature variation curves of cured Vanilla pods during curing processing.



Built in an app for easily access and monitor the Curing processing status of Vanilla pods in real time

The Curing App can continuously keep monitoring the Curing processing development of Vanilla pods and running status of the chamber through the mobile phone, when you are busy farming in the fields.







"Different varieties, different planting methods, and different curing processing conditions and methods will make the flavor of Vanilla pods different"

Vanilla pods flavor chart comparison by the origin

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King Son designed Vanilla Pods Flavor Wheel

csiges The aroma from vanilla pods Sweating Swer BJICO Tobacco-like Fruity KSDN Imber Floral Kyows ANOUIS Fuese A ungen NOOD UP)

King Son self-designed Vanilla Pods Grading Tool





One Chamber, Five Functions – Increased Processing Efficiency ↑ With a fully automated process, one machine completes the five stages: killing, Sweating, curing, drying, and conditioning.



Frozen Vanilla Pod Processing Function Through innovative technology by King Son, frozen vanilla pods can be processed at any time, without seasonal limitations, allowing flexible adjustment of processing schedules.



Consistent Processing Quality Eliminates issues such as unstable quality, variations, and mold formation caused by manual processing.

" Revolutionizing Solutions with Pioneering Frozen Vanilla Pod Processing Technology "

Challenge 1

Processing is limited to the harvest season

Challenge 2

Need to improve machine utilization rates

Challenge 3

Desire to increase processing capacity

Challenge 4

Aim to enhance processing efficiency

Solutions Delivered Through Frozen Vanilla Pod Processing Technology!

Free from climate and seasonal constraints: Processing available year-round. From single season to four seasons: Continuous year-round operation

Processing capacity increased 4x: From 200kg to 800kg Processing time reduced to one-third: From over 6 months to just 2 months



King Son's Frozen Vanilla Pod Processing: Unmatched Excellence in Results

1.Freedom from Climate and Seasonal Constraints: Processing is no longer tied to harvest seasons, enabling year-round operation with a stable supply unaffected by external conditions.

2.Enhanced Operational Efficiency: Transition from seasonal operations to stable year-round production, significantly boosting productivity.

3.Substantial Increase in Processing Capacity: Traditional one-season (two cycles) capacity is expanded up to four times, meeting higher market demands.

4.Reduced Processing Time: The entire process is shortened from over six months to as little as two months, saving time and enhancing market competitiveness.

Customer Success Case - The Role of Vanilla Processing Center



Vanilla Processing Center Expand Across Japan and Taiwan: A New Initiative Supporting Regional Industries

The Growing Wave of Vanilla Processing

Traditionally reliant on imports, the vanilla industry is experiencing a transformation thanks to advancements in domestic processing technologies and rising demand for locally grown vanilla. In Taiwan, regions like Taitung, and in Japan, areas such as Okinawa, are emerging as hubs for the establishment of vanilla processing center. These facilities concentrate on processing vanilla pods cultivated by local farmers, creating a new industrial model that supplies high-quality products to national markets.

The Role of Vanilla Processing Center

Vanilla processing center are central to efforts aimed at revitalizing regional agriculture. By introducing specialized "vanilla curing chamber," these facilities are revolutionizing vanilla processing and supporting local farmers.



frozen vanilla pods can be processed at any time, without seasonal limitations, allowing flexible adjustment of processing schedules.

Key benefits include:

1.Innovative Processing Technology:

The ability to process frozen vanilla pods year-round is a game-changer. Farmers can now freeze their harvest and choose optimal processing times, independent of seasonal constraints or labor-intensive schedules.

2.Support for Local Farmers:

Processing facilities relieve farmers of the burdensome curing and processing stages, enabling them to focus on cultivation and improving crop quality.

3. Establishing Regional Brands:

Processed locally, vanilla becomes a powerful tool for promoting "locally grown, locally consumed" initiatives. This strengthens regional branding and opens avenues for national and international market expansion.

New Value Created by Vanilla Processing Center

The expansion of vanilla processing center is creating significant benefits not only for farmers but also for entire communities. These facilities generate local employment opportunities and serve as a catalyst for economic development by positioning vanilla products as a valuable tourism resource. In Okinawa, for instance, vanilla processing center collaborate with local tourism initiatives to offer guided tours showcasing the processing stages. Additionally, products like vanilla-infused desserts made from locally grown pods are gaining popularity among tourists. Efforts to position vanilla as a new regional specialty are leading to innovative product launches aimed at the growing tourism market.

Ryukyu Harvest Co.,Ltd. Ms. Takaesu Ikuyo

> Since the era of the Ryukyu Kingdom, Kumejima has been called the "Island of Supreme Beauty," captivating countless hearts with its stunning natural scenery. Renowned for its abundant natural resources, Kumejima now introduces a new specialty—Kumejima-grown vanilla pods.

Anillin Monroe

Cumejima nilla Beans

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Vanilla pods, widely recognized as a key ingredient in ice cream and desserts, are almost entirely imported in the Japanese market (from regions such as Madagascar, Tahiti, and Indonesia). As a result, domestic vanilla cultivation is considered extremely rare. Kumejima-grown vanilla pods are cultivated, harvested, and fermented entirely on the island, in farmland certified organic under **JAS standards**. Thanks to Kumejima' s unique climate, which is ideal for vanilla cultivation, the island launched this cultivation initiative several years ago.

Through meticulous farming and time-intensive fermentation, Ryukyu Harvest Co., Ltd. delivers safe, reliable, and premium-quality Kumejima vanilla pods.



Kumejima Organic Vanilla Pods × Kume Island Kumesen Awamori Special Release for the 2024 Okinawa Industry Festival Presenting "Intersection Dryad", a masterpiece crafted by Kumesen Distillery on Kumejima.

Inspired by the mythical Dryad, a spirit of Greek legend, this exceptional creation unites the aged elegance of Kumesen Awamori with the rich, organic vanilla beans nurtured on Kumejima. The result is a harmonious blend of soft, sweet aromas and deep, refined flavors—a sensory journey to savor with every sip.

Purchase Organic Vanilla Pods from Kumejima Ryukyu Harvest Co.,Ltd. TEL: 098-851-4623 ADD: 966-33 Nakadomari Kumejima-cho, Shimajiri-gun, Okinawa-ken 901-3124 Japan Instagram:ryukyu_harvest

ng Son Vanilla Curing Chamber storage temperature = 28°C **"The Process and its** The total electricity bill for Vanilla pods curing processing is calculated based on the electricity charges from February to **Power Consumption**" May in 2020, 4 months by commercial electricity rate, about USD 19 (Taiwan NT Dollars 463). Hener * Climate in Puli, Taiwan Pod growth (6 to 8 months) Pods maturing The time available for other foods (cocoa, coffee, kombucha, dough) fermentation Harvesting ripe pods February April June January March May July August September October November December Coarse harvest Killing ating Curina Drying Washing Fine harvest and grading Softening for Reduce water contents Growth stop Aromatizing Ripening aroma enhanced & mold prevention

King Son Vanilla Curing Chamber FER-VA-785-4S Specification

External dimensions	121 (W) * 205 (H) * 84 (D) cm
Internal dimensions	103 (W) * 127 (H) * 60 (D) cm
Storage volume	785 liters
The number of stainless mesh trays used for curing processing	2 columns * 10 layer of mesh trays per column, 20 set of mesh trays in total (rails included in each mesh tray)
Stainless steel mesh tray dimension	49 (W) * 54 (D) * 4 (H) cm, weight 1.3 kg per mesh tray
Loading weight	5 kgs loading weight per mesh tray, 20 mesh trays totally can hold 100 kgs fresh Vanilla pods curing processing loading weight
The Operation Controller	King Son A7 Intelligent Food-Tech Controller 7" LCD full-color touch screen programmable control system
Vanilla pods curing processing programs	Built-in 5-stage programs (included Killing, Sweating, Curing, Drying, and Conditioning)+Frozen Vanilla Pod Processing Function
Vanilla pods curing processing monitoring	Built-in two sets of temperature sensing probes that are inserted into the Vanilla pod to measure and record the internal temperature variation curves of cured Vanilla pods during curing processing
Operating temperature setting range	7~65°C
The minimum unit of temperature can be set	0.1°C
Temperature accuracy	$\pm 0.5^{\circ}$ C (General drying oven $\pm 7^{\circ}$ C)
Humidity display range	$50{\sim}95\%$ R.H. (Displays humidity only, no control function)
The 5 stages of curing processing and operating mode	The operation functions of King Son Vanilla Pods Curing Chamber can be setup for continuous (by the Program Link) or individual stage running, that perform Vanilla pods curing processing in each stage (Killing, Sweating, Curing, Drying, Conditioning) and visually display the processing temperature and humidity curves in each stage
The number of curing processing programs available for operator's self-setup and configuration	Total 100 set of curing processing programs (included 7 sets default built-in and 93 sets can be setup and configured by the operator)
Program backup and download	Backup and download the curing processing program via USB interface
Wi-Fi remote connection	Built-in Wi-Fi communication module for internet remote connection
Mobile app remote connection and monitoring	The mobile app can continuously keep monitoring the Curing processing development of Vanilla pods and running status of the chamber through the mobile phone, when the operator is not available nearby the chamber, or busy farming in the fields
Other foods fermentation processing applications	The chamber is available for other foods (cocoa, coffee, kombucha, dough) fermentation processing application
Power	220 V / 7A / 50 ~ 60 Hz









Expert Knowledge x King Son Technology – Introducing the King Son Vanilla Curing Chamber 2.0

Using the expertise accumulated by industry professionals over 10 years, King Son collaborated with vanilla industry experts to develop the King Son Vanilla Curing Chamber. Equipped with an innovative frozen vanilla pod processing workflow, this is the industry's first fully integrated (5-in-1) system that completes all processing steps on a single machine. Every step of the process has been rigorously field-tested to ensure reliability, with a strong emphasis on user convenience!

King Son Vanilla Curing Chamber 2.0



Revolutionizing Solutions with Pioneering Frozen Vanilla Pod Processing Technology

- ① Industry-first 5-in-1 Functionality:
- Complete five processes with a single machine, reducing work time and labor costs.
- ② Frozen Pod Processing Capability: Flexibly adjust processing schedules without being constrained by seasons.
- ③ Freedom from Climate and Seasonal Limitations:

Processing is no longer restricted to harvest seasons, enabling year-round operations.

Increased Operation Efficiency:

Transition from seasonal operation to year-round usage, significantly enhancing processing efficiency.

(5) Higher Processing Volume:

Boost production capacity up to 4 times compared to the traditional one-season (2 cycles) operation.

⑥ Improved Processing Efficiency:

Complete all processes, which traditionally took over 6 months, in as little as 2 months.

⑦ AIoT Integration: Features preventive maintenance and remote diagnostic capabilities.

