

OVERVIEW

STAR ANISE & CASSIA (CINNAMON)

VIETNAM



THE FULL RESEARCH STAR ANISEED &
CASSIA BY PTEXIM CORP

WWW.PTEXIM.COM.VN

SPICES@PTXIM.COM.VN | HIENNV@PTXIM.COM.VN



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ith the desire to bring an overview, specific and latest on the material area as well as the market of two important spices of Vietnam, Cinnamon and Anise, Phuc Thinh Import-Export Investment Joint Stock Company (**PTEXIM**) has compiled, analyzed, and evaluated the data to prepare this report.



PTEXIM would like to sincerely thank the enthusiastic support from those who work at Departments of Agriculture Vietnam; The Forest Protection Department Vietnam belongs to many localities such as Lao Cai, Yen Bai, Lang Son, Quang Nam, Quang Ngai, Bac Kan, Thanh Hoa, Binh Lieu (Quang Ninh) and Que Phong (Nghe An)...

We hope this is a valuable reference source for the export of Cinnamon - Star Anise in particular as well as the spice industry in general, in order to make efforts to jointly promote and affirm the position of Vietnam's agricultural industry in the international markets.

The report certainly has some shortcomings and limitations. We look forward to receiving valuable contributions for PTEXIM to continue updating and perfecting.

Sincerely thank!



FOREWORD

Cassia and Star anise are two indigenous spices in Southeast Asia that have been grown for a long time by Vietnamese people, suitable for the climatic conditions of many provinces and cities, and are identified as key economic crops of the localities. With the desire to bring valuable information about the cinnamon - anise material area in Vietnam, PTEXIM hopes this report will be a useful reference.

PTEXIM RESEARCH



STAR ANISEED

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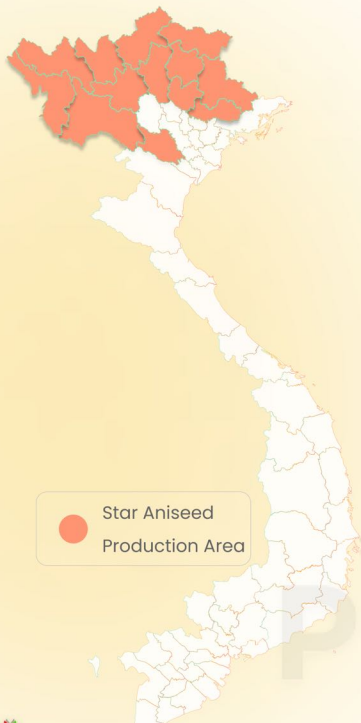
1 OVERVIEW OF VIETNAM STAR ANISEED

2 MAIN MATERIAL **AREAS**

3 **PRICE**
& INFLUENCING FACTORS

4 OUTSTANDING ANISE **PRODUCTS**

1 OVERVIEW OF VIETNAM STAR ANISEED



Over 100 years, STAR ANISEED concentrated in the Northern mountainous provinces in Vietnam - localities with cool climate and soil suitable for plant growth and best flower quality.

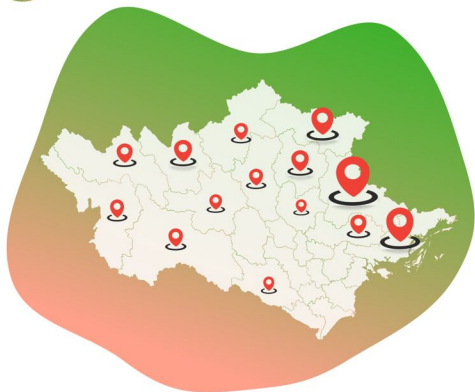


Anise forests are distributed mainly at an altitude of 300m to over 600m above sea level, the average annual temperature is about 18-22°C, the total annual average rainfall is over 1,500mm.



The anise growing area is directly affected by the Northeast monsoon. Every year, the air temperature drops to low (average 13.5 - 15°C) every year, often with frost and fog.

1 OVERVIEW OF VIETNAM STAR ANISEED



50,000 Ha



Production Area

18,000 Mt



Quantity

Main material area: Lang Son , Cao Bang and Quang Ninh, Bac Kan volume about 50,000 ha . A few are scattered in the provinces of Bac Kan, Lao Cai...



LANG SON



35,000 Ha



15,000 Mt



CAO BANG



4,500 Ha



1,400 Mt



QUANH NINH



8,600 Ha



550 Mt



BAC KAN



1,000 Ha



548 Mt



LAO CAI



62 Ha



30 Mt

1 OVERVIEW OF VIETNAM STAR ANISEED CROP SEASONS



Star Aniseed main season - **Autumn**

usually harvested around July - September

HARVEST TIMELINE

JAN FEB MAR APR MAY JUN **JUL AUG SEP** OCT NOV DEC



The Fourth Quarter Star Aniseed - **Spring**

from December and harvest after the Lunar New Year, around February - March

HARVEST TIMELINE

JAN **FEB MAR** APR MAY JUN JUL AUG SEP OCT NOV DEC

1 OVERVIEW OF VIETNAM STAR ANISEED

These Thing Not Yet Know About Vietnam's Anise



According to World Spice Organisation, Vietnam is 2nd country about star anise product quantity, China is largest country about star anise product quantity.



Although it is called "anise flower", it is actually anise seed. Since the flower shape, it is named Anise flower.



The best time to plant is spring or rainy season



Planting density from 400 - 500 plants/ha



Under 5 years old can't stand strong light, 20 years old and above need full lighting



At 8 - 10 years old, the tree begins to flower, can harvest



1 OVERVIEW OF VIETNAM STAR ANISEED

These Thing Not Yet Know About Vietnam's Anise

At 5-6 years old, the yield is only 0.5-1 kg/plant. Up to 10 - 20 years old, can reach 7 - 20 kg/plant. From 20 years old, the fruit yield is stable, about 20-30 kg/plant, the bumper can reach 50-80kg/plant. Good care for stable yield 20 - 80 years

Anise essential oil is mainly contained in the seed (3 - 3.5% in fresh fruit and 8 - 13% in dried fruit). The main component of the essential oil is trans - anethol (80 - 98%).

100 kg of dried anise fruit can extract 6.5-7 kg of shikimic acid - an important ingredient for the preparation of **Tamiflu** drug to treat **H5N1** chicken flu.

It has both economic value and forest protection function

average 1 ton needs about 4 hours of drying, about 3.5 - 4 kg of fresh anise will yield 1 kg of dried anise



1 OVERVIEW OF VIETNAM STAR ANISEED

MAIN PRODUCTION AREAS

 Lang Son



PRODUCTION AREA **35,000 Ha**

About 70% of the Vietnam Star Aniseed's production area



STAR ANISEED
DRIED QUANTITY **15,000 MT**

Focusing on the main autumn crop of about 10,000 tons, the spring crop reaching 40 - 50%, about 4,000 - 5,000 tons.



OLEORESIN QUANTITY **200-250 MT**



PRODUCT VALUE
IN 2020 **1.558** Billion Dong

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1 OVERVIEW OF VIETNAM STAR ANISEED

VAN QUAN District | Lang Son Province

In Lang Son Province, Van Quan district is largest area, where is farming star anise plant with :



PRODUCTION AREA

11,000 Ha



FRESH ANISEED QUANTITY

26,000 - 30,000 MT Yearly



DRIED ANISEED QUANTITY

11,000 MT Yearly



ORGANIC ANISEED AREA

300 Ha

LANG SON PROVINCE MAP

VAN QUAN
14,000 Ha

Others District plant Aniseed : Yen Phuc, Binh Phuc, Tan Doan, Trang Phai, Lien Hoi, An Son...

1 OVERVIEW OF VIETNAM STAR ANISEED

VAN QUAN District | Lang Son Province



In **2020**, the geographical indication of Lang Son star anise was **recognized and protected** in the European Union under the EU-Vietnam Free Trade Agreement (**EVFTA**).



PRODUCT QUALITY IS TYPICAL, SUPERIOR TO OTHER PROVINCES:



High essential oil content (average over 11%);



High trans - anethol content (average over 90%);



Essential oils are free of toxins and odors fragrant hot warm special display , average size of Star Aniseed is about 2.5cm.

1 OVERVIEW OF VIETNAM STAR ANISEED VAN QUAN District | Lang Son Province



IT IS A CROP THAT IS PRIORITIZED FOR DEVELOPMENT BY THE PROVINCE.

According to **Mr. Ly Viet Hung** - Director of the **Department of Agriculture and Rural Development** of Lang Son province:

“Since 2014, the People's Committee of Lang Son province has issued a decision approving the planning for the development of raw material crops associated with processing and exporting in the province until the year 2014. 2020, vision to 2030.”



DEVELOPING STAR ANISEED DRIED PLAN



STAR ANISEED
DRIED QUANTITY

15,000 MT
YEARLY

2021



STAR ANISEED
DRIED QUANTITY

19,000 MT
YEARLY

2026

2030

Fresh Anise quantity is about **57,387 MT**

Area: **22,150 hectares**

1 OVERVIEW OF VIETNAM STAR ANISEED

CAO BANG Province



CAO BANG PROVINCE MAP



PRODUCTION

4,500 Ha

AREA



Concentrated planting from 0.3 ha or more is 2,572 ha, the rest is a small area of less than 0.3 ha



FRESH ANISEED

4,000 ^{Yearly} **MT**

QUANTITY

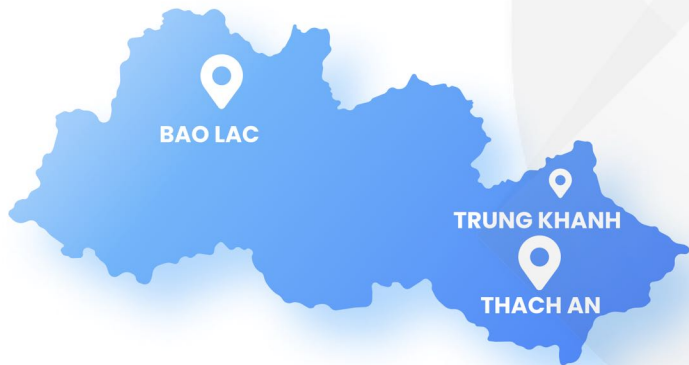


Equivalent to 1,000 - 1,300 tons of dried anise

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1 OVERVIEW OF VIETNAM STAR ANISEED

CAO BANG Province



CAO BANG PROVINCE MAP

	THACH AN	2,560 Ha
	FRESH ANISEED QUANTITY	3,500 MT
	EXPANSION AREA TO 2025	100 Ha

	BAO LAC	1,760 Ha
--	----------------	-----------------

	TRUNG KHANH	200 Ha
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POLICY




The government has carried out many propaganda activities, mobilizing anise growing households to take good care of their plants, improve the quality of star anise as well as provide technical support, fertilizers, seeds, and output. make sure people...

1 OVERVIEW OF VIETNAM STAR ANISEED

QUANG NINH Province

 **Binh Lieu** is the only district of Quang Ninh province that can grow star anise.

 The average annual output is still low, not commensurate with the planted area.
The annual output is not uniform, there is an error phenomenon every year.



QUANG NINH PROVINCE MAP

 **QUANG NINH 8,600 Ha**

 **FRESH ANISEED**
QUANTITY **500-550^{MT}**

1 OVERVIEW OF VIETNAM STAR ANISEED

QUANG NINH Province

ALLOTMENT



POLICY

Anise considered a **non-timber forest product** with **high economic value**, **Binh Lieu district** has had and is having many **policies** on **research** and application of techniques on fertilizers, pest control, improvement, and additional planting. new varieties of anise; Promotion of forestry seedling production facilities...



DONG VAN

HOANH MO

DONG TAM

LUC HON

BINH LIEU TOWN

HUC DONG

VO NGAI

TOTAL

CURRENT CROP
AREA BY **2020**

2420,3

2541,4

721,7

899

469,2

1544,3

4,5

8600,4

DEVELOPMENT
TO **2030**

2300

2200

600

500

200

1200

-

7000 (HA)

1 OVERVIEW OF VIETNAM STAR ANISEED

OTHER Province

BAC KAN

DISTRICT

BA BE	45,74
BACH THONG	262,35
CHO DON	13,95
CHO MOI	576,99
NA RI	2.627,48
NGAN SON	34,71
PAC NAM	3,51 (HA)
TOTAL	3.564,73

CURRENT CROP AREA BY 2020

 **PRODUCTION AREA** **3,565 Ha**

In which, nearly **99%** of the planted area before **2011** is being **harvested**.

 **DRIED ANISEED QUANTITY** **2,000-2,300 MT**

POLICY

In the near future, the province's agriculture sector will focus on promoting, calling and attracting investment in the field of anise processing according to the policy of encouraging investment in agriculture and forestry to improve the value chain and build local brands.



1 OVERVIEW OF VIETNAM STAR ANISEED

OTHER Province

LAO CAI

THE AREA IS EXPECTED TO **EXPAND**
IN NEXT 5 YEARS.

500 HA

IN 03 COMMUNES



 **Ta Ngai Cho**

 **Pha Long**

 **Tung Chung Pho**



PRODUCTION AREA **62 Ha**

 In **Ta Ngai Cho** commune, Muong Khuong district.

 Harvesting Anise area is about 20 hectares.



DRIED ANISEED QUANTITY **15** MT



About **20** **dominant trees** have been **selected** (trees are several decades old) for breeding

1 OVERVIEW OF VIETNAM STAR ANISEED PRICE AND IMPACT FACTORS



IMPACT FACTORS

90% due to Chinese market demand. A small part due to **shipping costs, weather...**

According to **Deputy Director of Bac Can Department of Agriculture and Rural Development** Mr. Nguyen Ngoc Cuong

The price flower The recovery is seasonal because there is no stable consumer market, depends on private traders to export to China, and has not been deeply processed locally.



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PTEXIM is one of the leading reputable Star Aniseed exporters in Vietnam. Many Star Aniseed products meet strict criteria depending on the customers's demand.



STANDARD STAR ANISE



SUPERIOR STAR ANISE

CASSIA

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3 MAIN MATERIAL AREAS



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2 OVERVIEW OF CASSIA MARKET

TOP 3 COUNTRY PRODUCTION CASSIA



INDONESIA



CHINA



VIETNAM

Vietnam is one of the five countries in the world that cultivate cassia, ranking third in output after China and Indonesia with a total area of about **150,000 hectares** and an average output of **70,000–80,000 tons** of dried cassia bark/year.

ORGANIC CERTIFICATE

Ptexim is a **member** of a **Cooperative** specializing in growing cassia with the current area of nearly **300 hectares** and **has completed the Organic project.**





EU STANDARDS

PTEXIM are now able to produce ground cassia / cassia broken with **low coumarin content** and guaranteed **lead content** below **2ppm** according to **European standards**.



COUMARIN
CONTENT



2ppm

LEAD
CONTENT

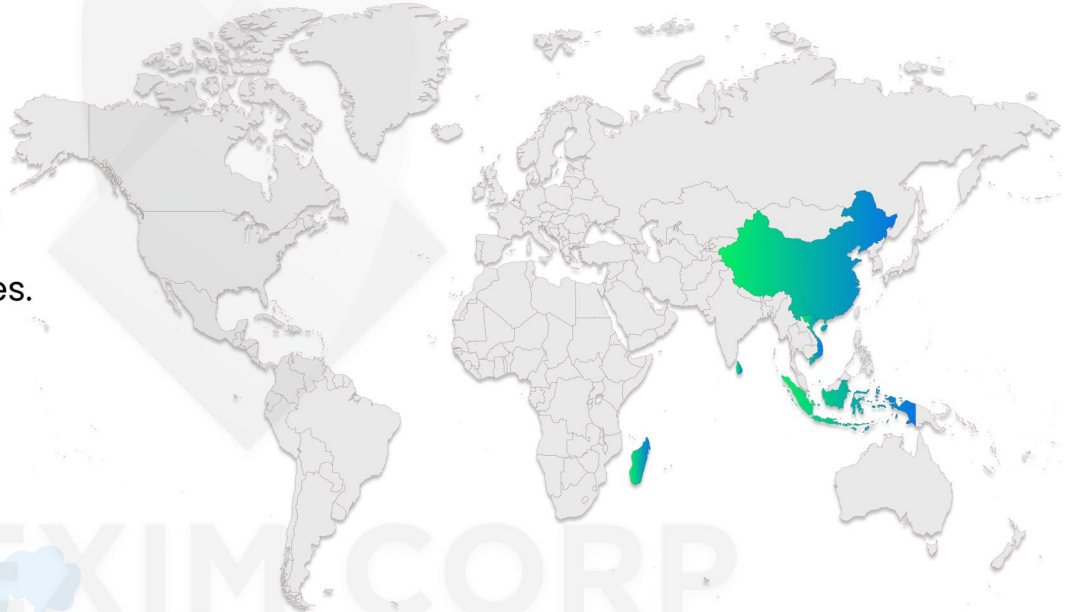
2 OVERVIEW OF CASSIA MARKET



AREA

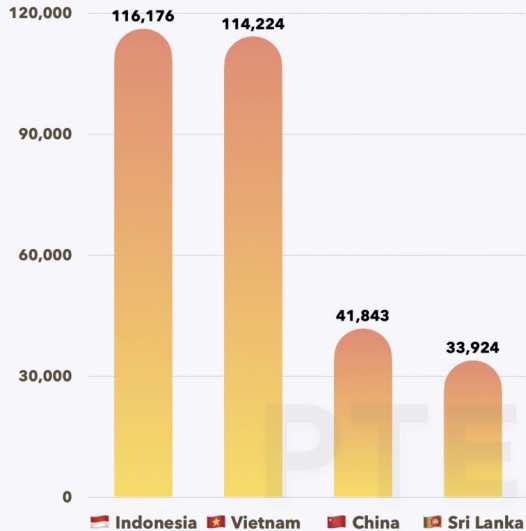
For four years, **China's** planted forest area was stable at **41,000** hectares.

While **Indonesia** only increased the area by about **5,000** hectares.



COUNTRY PRODUCTION CASSIA MAP CHART

2 OVERVIEW OF CASSIA MARKET



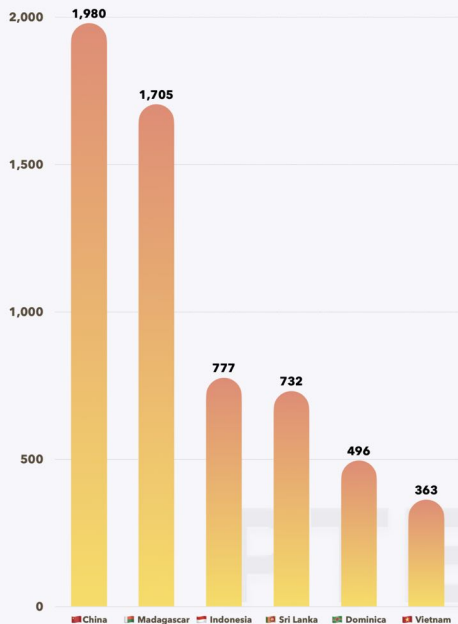
INDONESIA
VIETNAM
CHINA
SRI LANKA
MADAGASCAR
SEYCHELLES
SAO TOME AND PRINCIPE
DOMINICA
TOTAL

	CROP AREA 2016	CROP AREA 2017	CROP AREA 2018	CROP AREA 2019
INDONESIA	111,465	111,755	114,670	116,176
VIETNAM	96,697	102,544	108,387	114,224
CHINA	41,348	41,521	41,686	41,843
SRI LANKA	30,130	29,415	33,094	33,924
MADAGASCAR	1,602	1,961	2,021	2,073
SEYCHELLES	630	670	595	578
SAO TOME AND PRINCIPE	230	231	233	234
DOMINICA	104	107	104	113
TOTAL	282,206	288,204	300,796	309,165

2 OVERVIEW OF CASSIA MARKET



PRODUCTIVITY



CHINA
MADAGASCAR
INDONESIA
SRI LANKA
DOMINICA
VIETNAM
SAO TOME AND PRINCIPE
SEYCHELLES

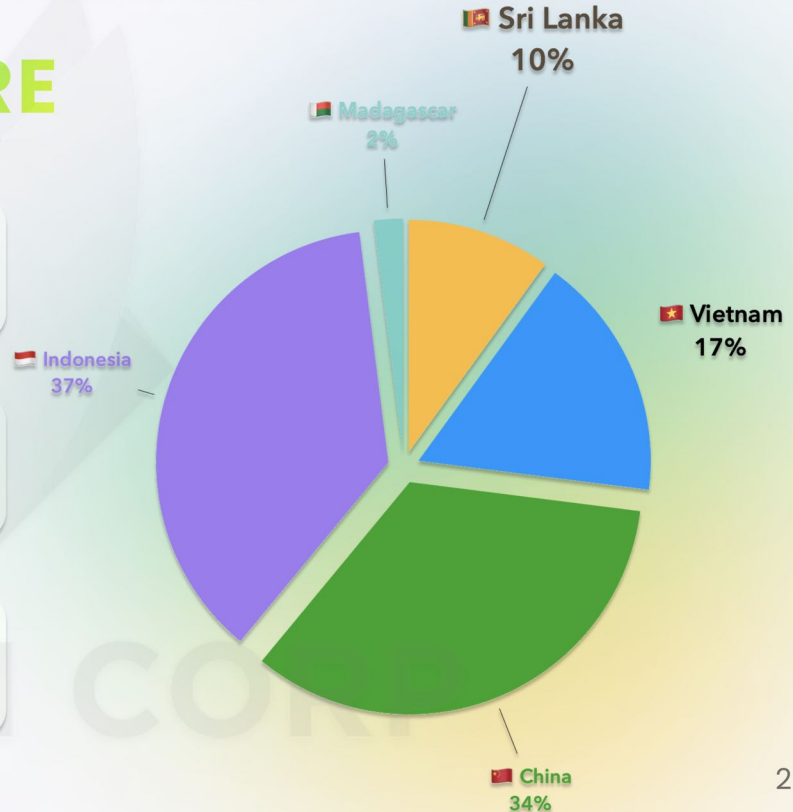
	CROP AREA 2016	CROP AREA 2017	CROP AREA 2018	CROP AREA 2019
CHINA	1843	1889	1934	1980
MADAGASCAR	1748	1734	1719	1705
INDONESIA	826	820	786	777
SRI LANKA	813	839	726	732
DOMINICA	539	523	509	496
VIETNAM	362	363	363	363
SAO TOME AND PRINCIPE	252	251	249	248
SEYCHELLES	48	60	54	43

2 OVERVIEW OF CASSIA MARKET

MARKET SHARE



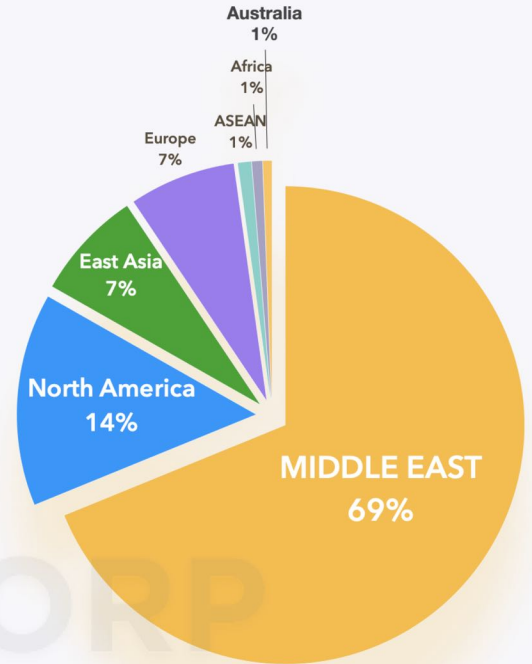
DATA 2019



2 OVERVIEW OF CASSIA MARKET

MARKET SHARE

REGION	EXPORT(KG)	MARKET SHARE OF VIETNAM
ASEAN	373,414	0.9%
EUROPE	2,967,972	7.2%
MIDDLE EAST	28,526,093	68.9%
NORTH AMERICA	5,962,913	14.4%
EAST ASIA	3,048,629	7.4%
AUSTRALIA	230,432	0.6%
AFRICA	299,110	0.7%
TOTAL	41,408,563	100%

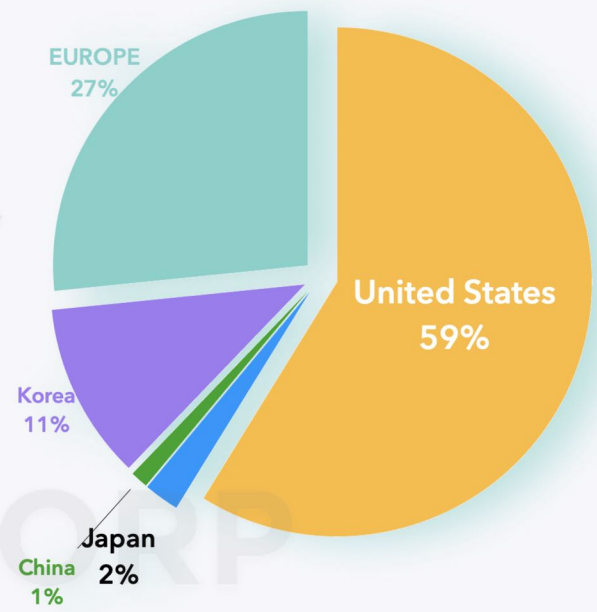


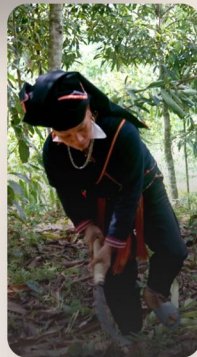
2 OVERVIEW OF CASSIA MARKET



VALUE & EXPORT MARKET

Cassia export value in 2020 reached **245.4 million USD** in some main markets such as:
United States 36.7; Japan 1.4; China 0.7;
Korea 7; EU 16.6 million USD
In 2021, the export value of cassia will reach about \$291.8 million, an increase of nearly 20% compared to 2020.



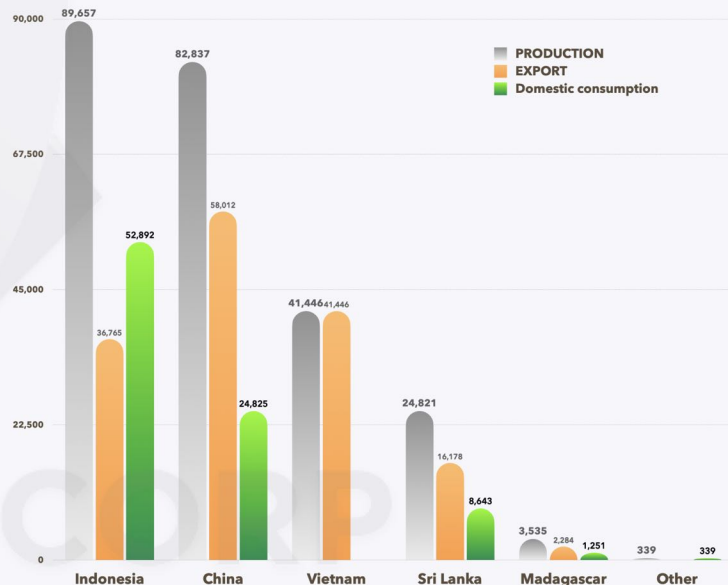


2 OVERVIEW OF CASSIA MARKET



PRODUCTION, EXPORT & DOMESTIC CONSUMPTION OF CASSIA PRODUCING COUNTRIES

PRODUCTION COUNTRIES	PRODUCTION	EXPORT	DOMESTIC CONSUMPTION
INDONESIA	89,657	36,765	52,892
CHINA	82,837	58,012	24,825
VIETNAM	41,446	41,446	EST.0
SRI LANKA	24,821	16,178	8,643
MADAGASCAR	3,535	2,284	1,251
OTHER	339	-	339
TOTAL	242,635	154,685	87,950 (MT)



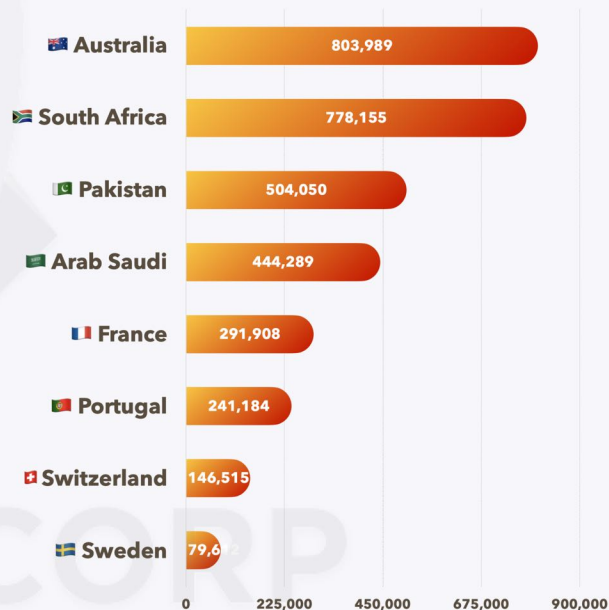
Source: FAO

2 OVERVIEW OF CASSIA MARKET



EXPORT VALUE OF VIETNAM BY YEAR

IMPORTING COUNTRIES	2016	2017	2018	2019
AUSTRALIA	422,475	656,986	838,906	803,989
SOUTH AFRICA	131,130	329,633	595,029	778,155
PAKISTAN	20,489	15,479	112,402	504,050
ARAB SAUDI	-	38,562	1,021,546	444,289
FRANCE	53,529	56,251	190,864	291,908
PORTUGAL	52,778	61,606	63,251	241,184
SWITZERLAND	14,701	119,734	128,196	146,515
SWEDEN	3,467	1,054	103,922	79,612
TOTAL	63,583,342	77,840,583	105,439,930	127,530,043



(MT) Source: COMTRADE

2 OVERVIEW OF CASSIA MARKET



IMPORT VALUE OF VIETNAM BY YEAR

IMPORTING COUNTRIES	2016	2017	2018	2019
INDIA	41,047,844	43,628,357	54,627,533	71,543,050
USA	10,074,449	16,474,068	22,428,897	23,630,002
SOUTH KOREA	4,965,270	4,232,146	5,578,420	7,227,846
CANADA	1,405,551	2,642,724	3,295,138	3,901,320
TURKEY	69,804	886,536	1,106,622	2,307,646
JAPAN	1,092,530	1,333,702	1,433,257	2,161,016
GERMAN	1,089,834	1,833,697	2,693,253	2,140,146
SPAIN	346,787	802,446	1,465,501	1,995,092
EGYPT	218,537	621,691	1,377,942	1,924,492
ENGLAND	1,104,177	1,383,668	2,107,135	1,632,057
MALAYSIA	96,847	443,652	1,803,621	1,524,258
NETHERLANDS	706,675	1,470,156	2,000,294	1,372,503
U.A.E	422,566	356,985	961,333	1,191,855
GREEK	-	373,152	822,137	849,455
POLAND	246,902	78,298	684,731	839,603

“

The impact of the COVID-19 pandemic in 2020 does not have much impact on Vietnam's cassia market. Moreover, the EU's cassia imports in 2020 increased 13% in volume and 20% in value. US imports also increased from \$41 million to \$71 million.

Growth of import probably due to widespread lockdown measures which have spurred higher demand for prepared goods and home cooking, thereby boosting spice consumption in general.

Source: **COMTRADE**

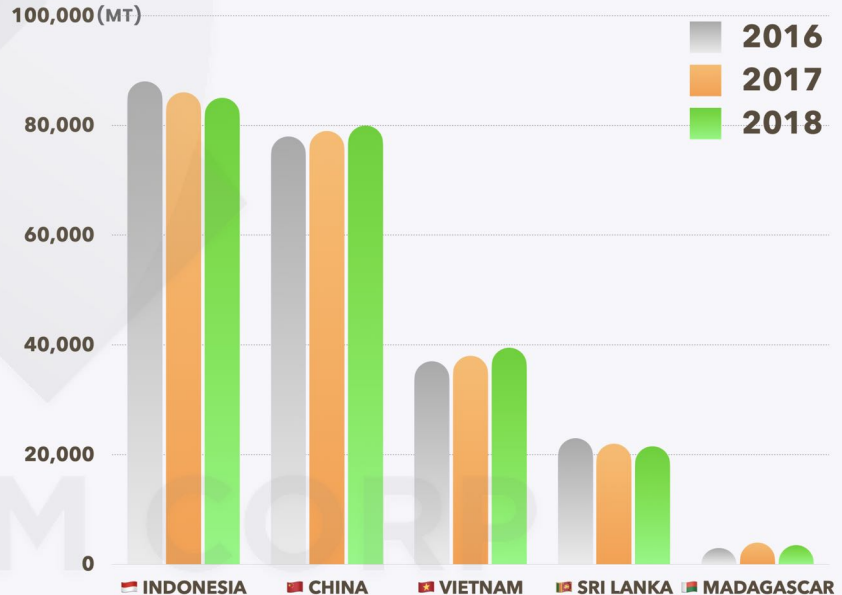
2 OVERVIEW OF CASSIA MARKET



SUPPLY GROWTH GLOBAL

1.63%

Growth in cassia's quantity global at 1.63% compound annual growth rate (CAGR) from 2016 to 2019



2 OVERVIEW OF CASSIA MARKET



IMPORTING CASSIA TO EUROPE

COUNTRY	QUANTITY (MT)			VALUE (Thousand \$)		
	2019	2020	Growth	2019	2020	Growth
China	1,363	1,033	-24% ▼	5,378	3,933	-27% ▼
Indonesia	6,169	7,725	25% ▲	21,610	28,060	30% ▲
Madagascar	2,188	1,578	-28% ▼	7,039	4,870	-31% ▼
Seychelles	40	7	-83% ▼	133	27	-80% ▼
Vietnam	3,046	3,455	13% ▲	8,012	9,637	20% ▲
TOTAL	12,806	13,797	8% ▲	42,172	46,525	10% ▲



Source: **Analysis of European statistics**

2 OVERVIEW OF CASSIA MARKET



VIETNAM'S EXPORT SITUATION



VALUE

127 Million^{\$}



PRODUCTION

40,000^{MT}



AVERAGE

EXPORT
PRICE

4^{\$/KG}



TOP 5 MAIN MARKET



India



U.S.A



Korean



Turkey



Spain



LOW ORGANIC
QUANTITY

5,000^{Ha}



CONTINUOUS EXPORT
GROWTH 2016-2019

26,000-41,000^{MT}



2 OVERVIEW OF CASSIA MARKET



FACTORS AFFECTING VIETNAM'S CASSIA



MARKET



DOMESTIC



INTERNATIONAL



CONSUMERS



PRODUCTION



PRODUCTION MATERIALS

Land, Labor



INPUT MATERIALS

Fertilizer, Plant protection products



PROCESSING

Pre-processing technical...



AGRICULTURAL COOPERATIVES



SUPPLY & SERVICE



LOGISTICS



QUALITY VERIFICATION



PROMOTION



DEEP PROCESSING



WAREHOUSE

2 OVERVIEW OF CASSIA MARKET



SWOT ANALYSIS VIETNAM CASSIA MARKET

SWOT

STRENGTHS



The raw material area is quite developed.



Support from local authorities.



organic

The area of organic cinnamon is small



Support from local authorities.

OPPORTUNITIES

WEAKNESSES



The supply chain is not well organized.



The practice of applying certification has not yet evolved.



There are many gaps in marketing capacity and market understanding.



Rapid production growth combined with traditional market share is approaching a breaking point.

THREATS

3 MAIN MATERIAL AREAS

Cassia is a tropical plant suitable for:



The climate of the regions is humid, with a lot of rain, the rainfall is more than 2000 mm/year.



Air humidity more than 80% .



Average annual temperature 22 - 24°C.



High mountains, 300 - 700m above sea level.



Prefers soil with medium to thick layer, cool, moist, rotten carpet, loose humus. Usually develops on igneous or metamorphic parent rocks.



It is a shade tolerant plant when young. From 5 years old and up, completely light-loving.

3 MAIN MATERIAL AREAS

Cassia is a tropical plant suitable for:



Since ancient times, cassia has been used by Oriental medicine as a precious medicine and an indispensable spice for many delicious and rich dishes. Currently, Cassia is a sustainable enrichment – poverty reduction crop, actively contributing to the movement of building new rural areas in many provinces and cities in Vietnam.



Should be planted in the rainy season from January to March of the lunar calendar or September of the lunar calendar. For the high cassia forest, after 15-20 years, the harvest begins. Low cassia forest only needs 3-5 years. Planting thickly, 3 years of autumn pruning young leaves and branches. After the 6th year, prune branches and leaves to make essential oils. From the 8th to 10th year, the cassia bark will be peeled off.



Especially, all parts from bark to trunk, leaves, branches... are valuable.

Cassia bark is the main product, accounting for 73% of revenue from cassia forest, essential oil distilled from leaves accounts for 20%, cassia wood accounts for 7%. Each hectare of cassia yields about 6 – 8 tons of dried cassia bark; 80 – 10 tons of leaves and branches used to distill essential oils; 80 – 100m³ of wood.

3 MAIN MATERIAL AREAS

Grade of Cassia



The tree between 8-20 years is the raw material for Vera A Sticks & Vera A/AA Cut.



The tree between 15-20 years is the raw material for KA Sticks & KABC.



The tree older than 20 years is the raw material for KA thicker Bark & KABC 3/ 3.5/4% SVO.

KB Broken Clean

KC Broken Clean

VERA A/AA STICKS

VERA A/AA CUT 6/8/10 CM

KA BROKEN CLEANED

KA STICKS

KABC (MIN 3/3.5/4 % SVO)

KA STICK THICKER BARK



3 MAIN MATERIAL AREAS

Application Of Cassia



Leaves and small branches: for extracting essential oils or soaking in alcohol, reaching 0.14 - 1.04% of essential oils.



Essential Oils



Alcohol



Body: Peeled bark, cassia sticks, cassia sticks, cassia chips, cassia powder... Cassia bark is rolled into a tube shape, 25 - 40cm long, 1.5 - 5cm in diameter, or pieces of the shell that are bent 3 inches wide. - 5cm thick 1-5mm. Aroma, spicy sweet taste, can reach 6% essential oil.



The core of the tree is taken for wood.



3 MAIN MATERIAL AREAS

CROP SEASONS

There are **02 crops** each year: Spring cassia peels in February - March and autumn cassia peels at the end of July - early August when the bark is firm, the tree has a lot of resin that is easy to peel, convenient for exploitation, transportation, and storage. Cassia from 15-20 years is the "ripe" age to harvest.



Cassia - Spring

HARVEST TIMELINE



Cassia - Autumn

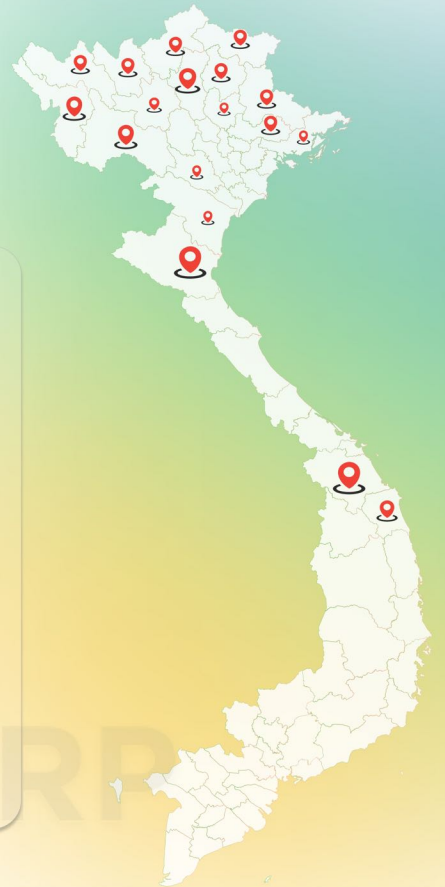
HARVEST TIMELINE



3 MAIN MATERIAL AREAS

AREA

“Cassia is widely distributed throughout Vietnam from the northern border to the South, but the cassia area is mainly concentrated in the regions of Yen Bai, Lao Cai, Quang Ninh, Quang Nam - Quang Ngai, Nghe An - Thanh Hoa. In addition, scattered in Thai Nguyen, Lang Son...



3 MAIN MATERIAL AREAS



SEEDING



Sources of cassia varieties nationwide include (in 2017): **390** recognized dominant trees (Lao Cai, Yen Bai, Thanh Hoa, Quang Nam and Quang Ngai), 89 hectares of recognized transformed forest, and seed forest newly planted, sexual and asexual seed gardens in the provinces: Lao Cai, Yen Bai, Thanh Hoa and Quang Nam.



Most of the cassia nurseries have a small capacity of less than 100,000 trees/year. There are only 4 nurseries (01 in Lao Cai; 02 in Yen Bai and 01 in Quang Nam) with a capacity of up to 300,000 plants/year.

3 MAIN MATERIAL AREAS



AREA & PRODUCTION



155,000 Ha
PRODUCTION AREA

In 2017 the whole country had 137,000 ha (Average new planting area 6,000 ha/year). By 2020, the total area will be about 155,000 ha.



41,408 MT
PRODUCTION QUANTITY

The total production of the country is about 41,408 tons, accounting for **17% of the world production.**

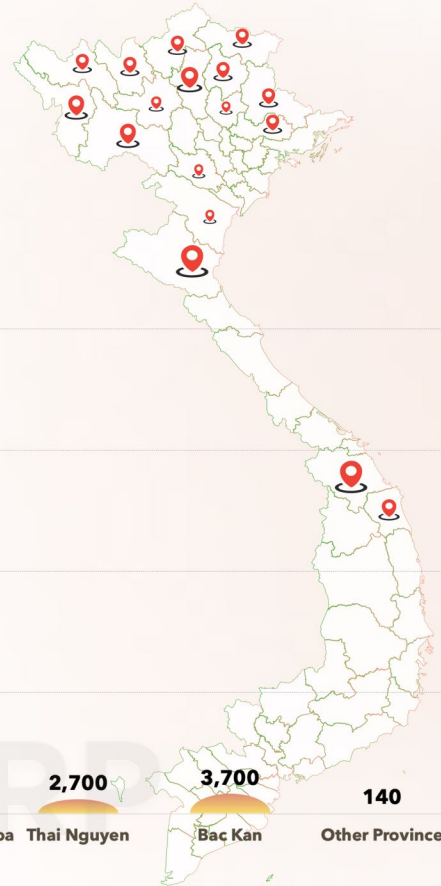
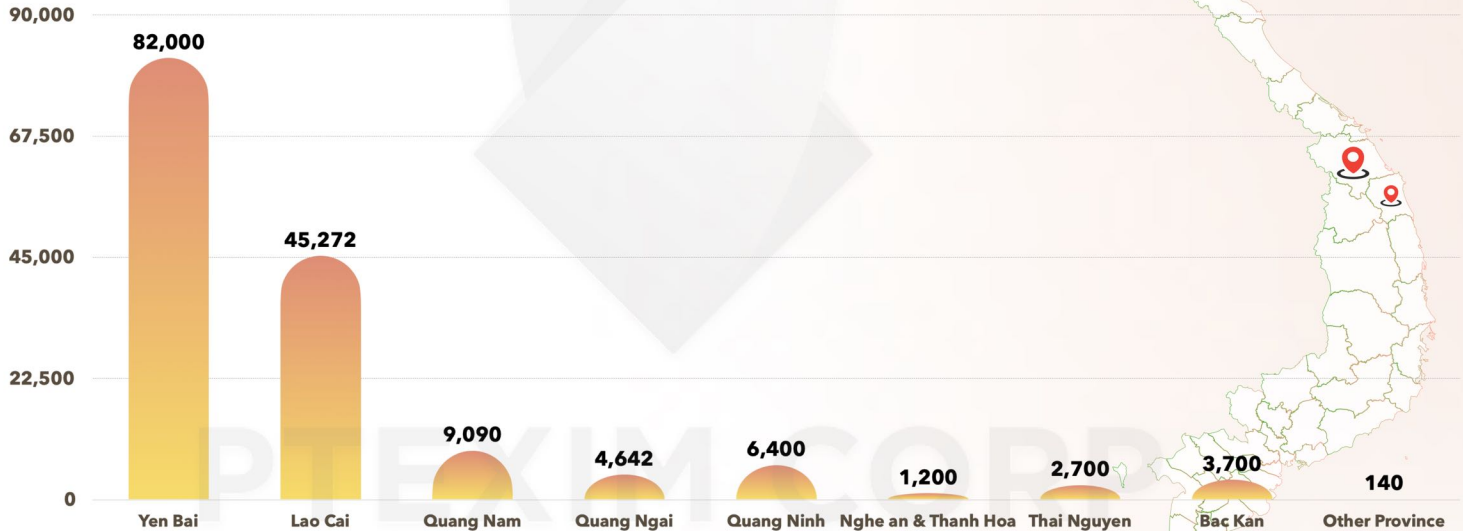


3 MAIN MATERIAL AREAS



AREA & PRODUCTION

Cassia area by Province in Vietnam (Ha)



3 MAIN MATERIAL AREAS



AREA & PRODUCTION



Cassia bark is the main product, **bringing 76% of revenue**. Production of dried cassia bark: an average of 1 ha of cassia from the time of thinning (4 - 5 years old) and white cutting at the end of the business cycle (13 - 15 years) is about 6 - 8 tons of bark/ha.



The shell reserves are about **900,000 - 1,200,000 tons**, the average output is 70,000 - 80,000 tons/year.

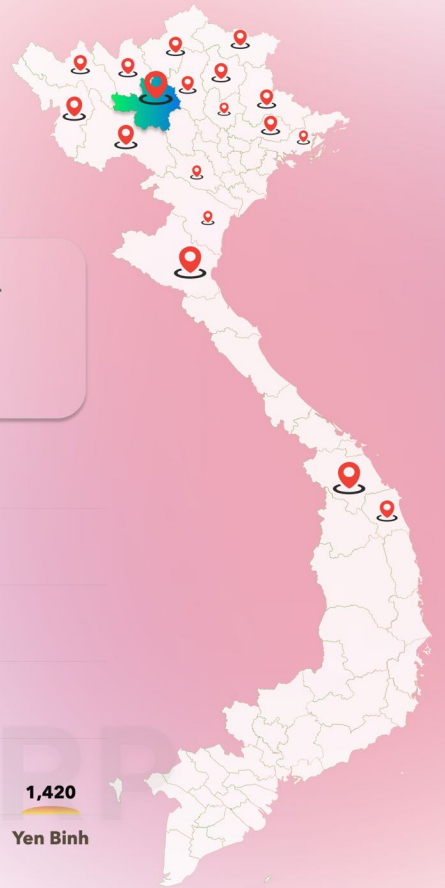
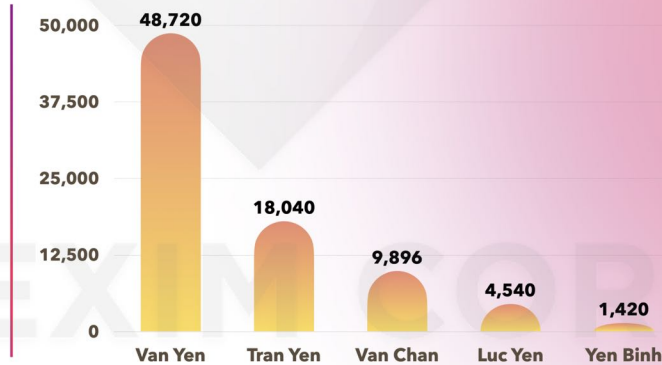
3 MAIN MATERIAL AREAS

YEN BAI PROVINCE



The locality has the largest cassia area in the country. Outstanding quality with high essential oil content on cassia bark.

Total area: more than 82,000 hectares, **7,000** hectares are certified **organic**. Allocation:



3 MAIN MATERIAL AREAS


YEN BAI PROVINCE

QUANTITY

 **75,000 MT**
FRESH QUANTITY

Equivalent to 21,000 –
26,000 MT dried
Cassia.

 **86,000 –
100,000 MT**
branches, leaves cassia

 **600 MT**
Essential Oils

**Diverse products: Cassia sticks,
cassia sticks, cassia powder...**

**Exported to many fastidious
markets such as EU, Canada,
Japan, Korea, USA...**

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3 MAIN MATERIAL AREAS

YEN BAI PROVINCE

Van Yen District – Vietnam's cassia capital

In 2010, the National Office of Intellectual Property – Ministry of Science and Technology established a geographical indication for the concentrated cassia area of 25,357 ha in 8 communes:



48,720 Ha
PRODUCTION AREA



65,500 MT
Branches and Leaves Cassia

1,000 – 2000 Ha/year

New & vacant planting area on the exploited area



Essential Oils **300** MT



6,500 MT
Production of dried cassia bark



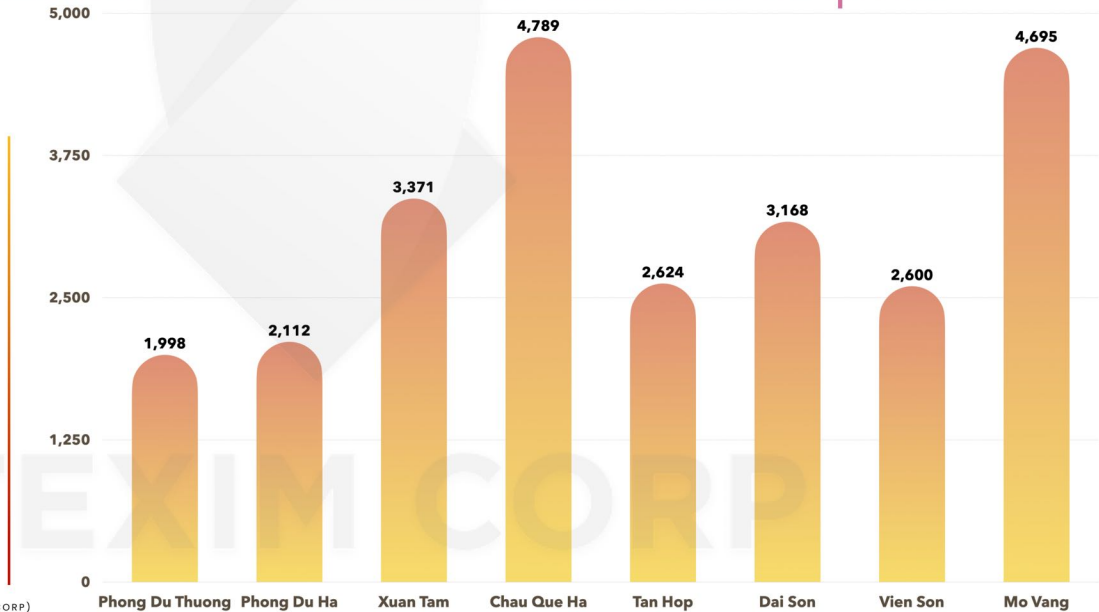
55,000 M³
Production of cassia wood

3 MAIN MATERIAL AREAS

YEN BAI PROVINCE

Van Yen District – Vietnam's cassia capital

In 2010, the National Office of Intellectual Property – Ministry of Science and Technology established a geographical indication for the concentrated cassia area of 25,357 ha in 8 communes:



3 MAIN MATERIAL AREAS



VAN YEN CINNAMON'S LOGO

YEN BAI PROVINCE

Van Yen District – Vietnam's cassia capital

Van Yen's cassia has a special quality.

SENSORY



The bark has small nodules, the outside is greenish-gray, there are lichen patches of light gray color, the inside of the cassia bark is light yellow to dark yellow.



QUALITY



MOISTURE

Different from many other regions in terms of low moisture content (14.06 – 15.74%).



OILS CONTENT

High refractive index of cassia bark essential oil (1.6025 – 1.6048nD25), essential oil content (4.38 – 6.07%,v/w), the cassia aldehyde content in the essential oil is high (84.93 – 90.10%,v/w).

3 MAIN MATERIAL AREAS



YEN BAI PROVINCE

Tran Yen District - Organic cassia area

- The second largest cassia growing area in the province, with an area of more than 18,000 hectares
- Leader in clean cassia, organic cassia
- On average, over 1,000 hectares are planted and exploited each year, the output of dried cassia bark is 4,000 tons.
- The whole district has built 8,000 hectares of cassia produced organically, of which 2,000 hectares are up to international standards

POLICY

To increase the value of cassia, the government has implemented many solutions such as: implementing projects to link production in chains; develop a project to conserve cassia seedlings and concentrated cassia areas with 90 dominant cassia trees and 14.5 hectares of cassia to focus on serving eco-tourism; implementing many preferential policies to attract investment; registration for protection of names, origins as well as geographical indications...





3 MAIN MATERIAL AREAS

LAO CAI PROVINCE



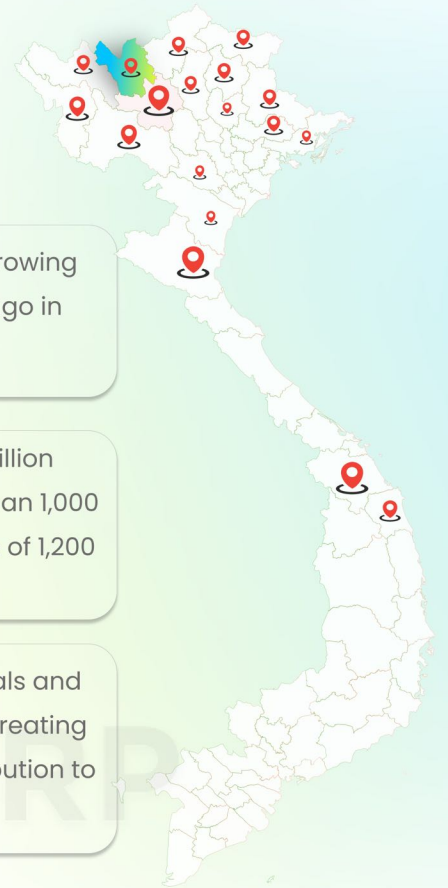
This is the second province in Vietnam in terms of cassia growing area. Cassia was planted into forests more than 40 years ago in Bac Ha, Bao Thang, Bao Yen and Van Ban districts.

600 BIL VND
VALUE

Each year cassia brings an economic value of about 600 billion VND, the income from cassia is estimated to reach more than 1,000 billion VND/year in the future. The goal is to reach the value of 1,200 billion by 2025 and 1,800 billion by 2030.

28,000 HOUSEHOLDS
JOB

The whole province has about 28,000 households, individuals and organizations investing in developing the cassia industry, creating jobs for at least 56,000 people, making a significant contribution to stabilizing social security.



3 MAIN MATERIAL AREAS

 **LAO CAI PROVINCE**

 **WAVE PROJECT**

1970-2010

LAO CAI CASSIA
APPEARS SCATTERED IN
**BAC HA, VAN BAN, BAO
THANG**, WITH AN AREA
OF ABOUT **4,000 HA**

2010-2013

**PEOPLE INTERESTS IN
FARMING CASSIA,
START PLANTING
CASSIA**

2013-2015

- **MARKET RESEARCH**
- **FORMING GROUPS**
- **LEARNING FROM EXPERIENCE**
- **THE FIRST STEP TO FORM A VALUE CHAIN**

2015-2020

- **TARGET: 20,000 HA CASSIA**
- **2020 : 42,000 HA;** ALREADY 3,500 HA OF ORGANIC CASSIA SUPPORTED BY SNV THROUGH 2 COMPANY.

3 MAIN MATERIAL AREAS

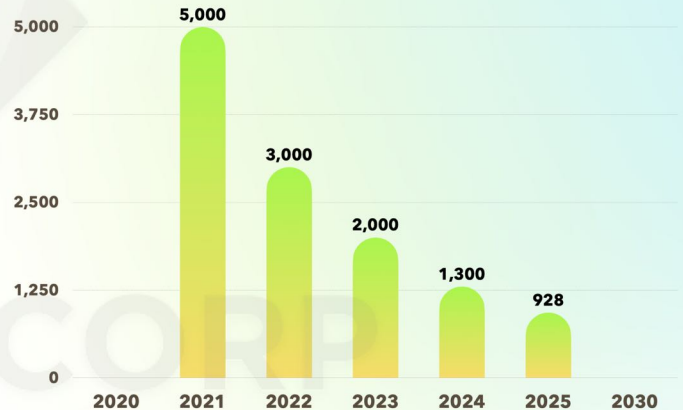
LAO CAI PROVINCE

PLANNED EXPANSION TO 2030

Current area and planned expansion: Target to reach 1,200 billion VND by 2025. Target to 2030 as bellow:

YEAR	TOTAL AREA (HA)	NEW PLANTING (HA)
2020	40,272	
2021	45,272	5,000
2022	48,272	3,000
2023	50,272	2,000
2024	51,572	1,300
2025	52,500	928
2030	66,000	
TOTAL		12,228

PLANNED EXPANSION TO 2030 CHART



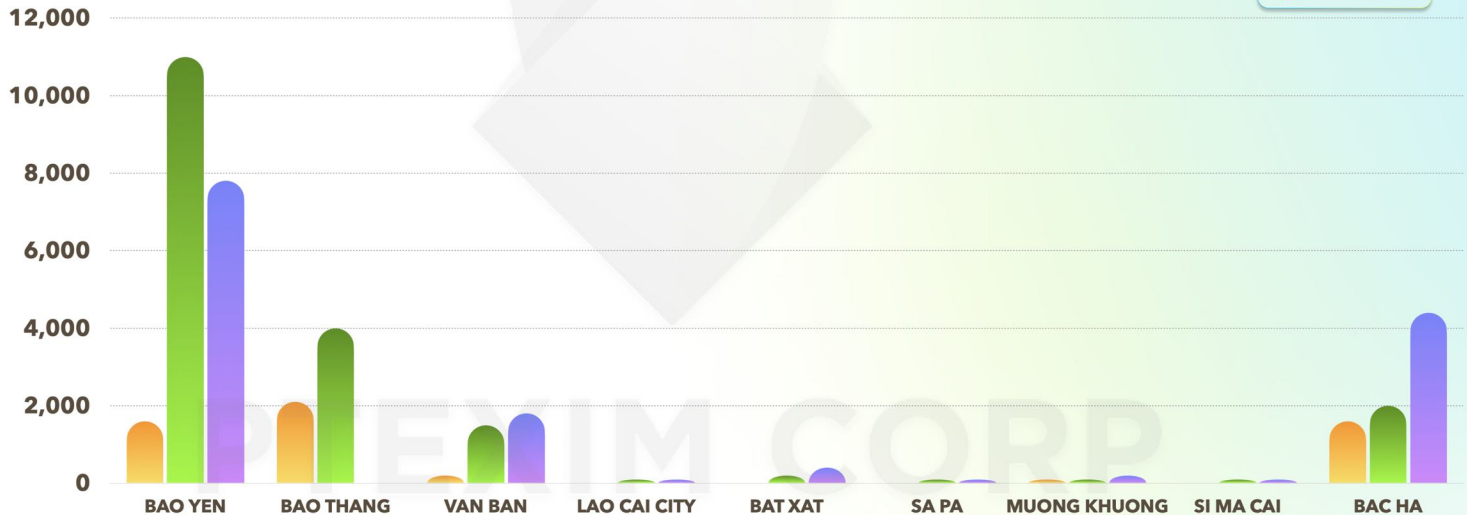
3 MAIN MATERIAL AREAS

LAO CAI PROVINCE



PLANTED AREA BY AGE AND DISTRICT IN 2020

- > 10 YEARS
- 5-10 YEARS
- < 5 YEARS



3 MAIN MATERIAL AREAS

LAO CAI PROVINCE

CROP QUANTITY



4.650 MT
Dried Cassia Bark



50.605 MT
Branches, Leaves



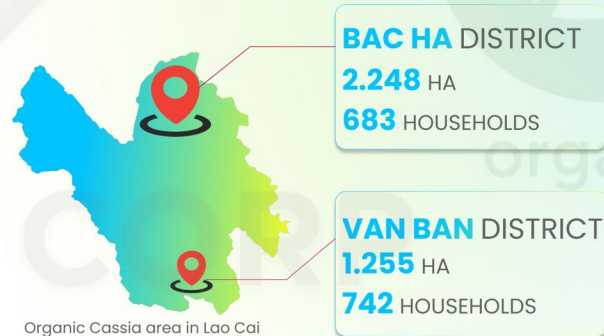
297 MT
Essential Oils



ORGANIC CASSIA AREA

organic

By the end of 2020, the area of Cassia certified organic is 3,503 hectares, accounting for 8.7% of the province's cassia area. The goal is that by 2025, the area of certified organic cassia will be 30%, equivalent to 15,750 ha, with an average of 2,500 ha more each year.



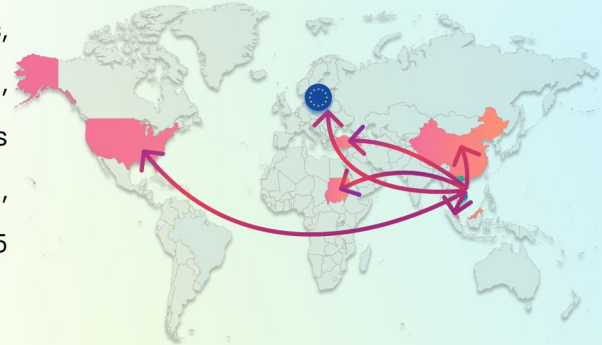
Organic Cassia area in Lao Cai

3 MAIN MATERIAL AREAS

LAO CAI PROVINCE



Stable export market, has exported directly to **9 countries**, including: Singapore, India, Thailand, Malaysia, Bangladesh, Qatar, Lebanon, Israel, Turkey. Essential oils are sold by export companies to China, Taiwan, Sri-Lanka, Europe, and the United States with a total volume of 315 tons, a part of essential oils serving domestic demand.



The National Office of Intellectual Property has granted a certificate of geographical indication for Cassia in Lao Cai.



The content of essential oil is **4.6%** - in 100kg of Cassia, there is about 4.6kg of essential oil.

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3 MAIN MATERIAL AREAS

LAO CAI PROVINCE

“

Mr. To Manh Tien, **Deputy Director of the Provincial Department of Agriculture and Rural Development** assessed: *Cassia products in Lao Cai have quite good quality, ranking 3 in the country in terms of quality and essential oil content. Cassia is chosen by people as the main forestry tree in forest economic development, the annual cassia growing area is continuously expanding.*

POLICY

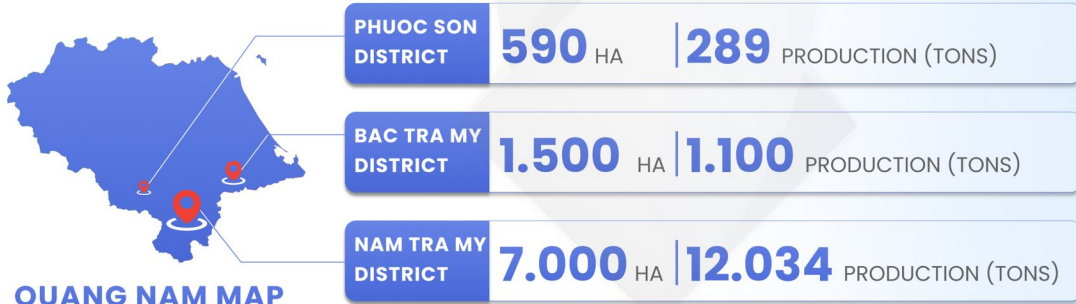
As one of eight products included in the list of key agricultural products by the province, encouraging investment linkages in production and processing - consumption, the government supports cassia growers to exempt and reduce land tax. .. Objective: To expand the scale to about 60,000 ha; 30,000 - 35,000 ha of cassia certified organic;

3 MAIN MATERIAL AREAS

📍 QUANG NAM PROVINCE

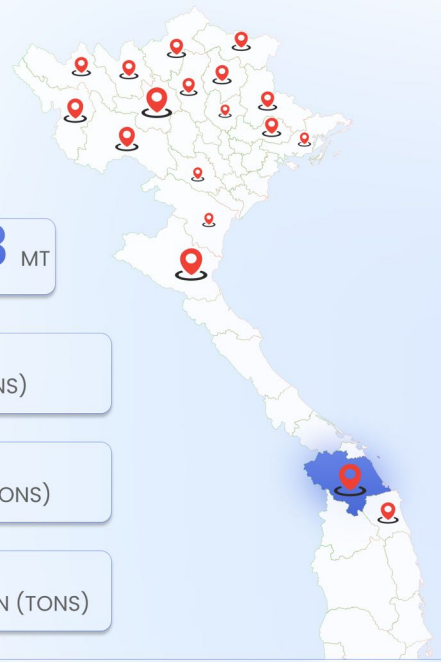
 **PRODUCTION AREA** **9.090** HA

 **QUANTITY** **13.423** MT
fresh quantity



QUANG NAM MAP

“ Quang Nam cassia is famous for its **thousands of years of history**, **geographical certification** and its own logo affirming product quality and prestige. Many cassia gardens here have a lifespan of tens to hundreds of years. In particular, Cassia Tra My is named **CINNAMONNUM CASIA** in scientists, belongs to the **innamonnium** family, is the leading family of 4 types of cassia growing in Indochina zone, **Cinnamic aldehyde content reaches 95%** in cassia essence.



3 MAIN MATERIAL AREAS

📍 QUANG NAM PROVINCE



**HIGHEST
QUALITY**

Cassia Tra My is known as "**Cao Son Ngoc Que**", it means Cassia is a precious treasure in the high mountains, is a type of cassia containing the amount of essential oil in the bark, stem and branches many times higher than that of cassia varieties grown in other regions of Vietnam.



3 MAIN MATERIAL AREAS

📍 QUANG NAM PROVINCE



QUANG NAM MAP

NAM TRA MY DISTRICT

10/10 communes grow cassia. The output and area are constantly increasing each year. Particularly, 1,000 hectares planted from 2020 to 2021. There are 1,700 hectares propagated by people themselves, the rest is from investment capital and support from government.



CROP QUANTITY



3.900 MT

**DRIED
CASSIA
BARK**



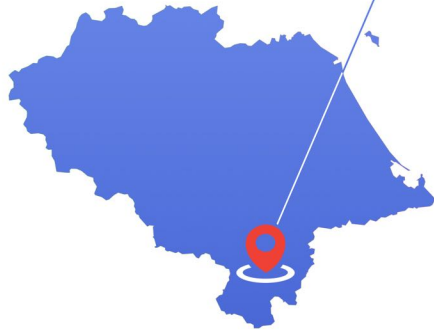
16.000 MT

**BRANCHES
& LEAVES**

3 MAIN MATERIAL AREAS


📍 QUANG NAM PROVINCE

NAM TRA MY DISTRICT



QUANG NAM MAP

DISTRIBUTION OF CASSIA IN NAM TRA MY BY COMMUNES

 COMMUNES	 PRODUCTION AREA (Ha)	 FRESH CASSIA BARK QUANTITY
Tra Don	817,0	1.434,0
Tra Leng	1.375,0	2.350,0
Tra Mai	1.358,0	2.516,0
Tra Tap	770,0	1.340,0
Tra Cang	640,0	1.080,0
Tra Don	610,0	1.020,0
Tra Nam	460,0	720,0
Tra Linh	52,0	84,0
Tra Van	535,0	870,0
Tra Vinh	410,0	620,0
TOTAL	7.017,0	12.034,0

3 MAIN MATERIAL AREAS

QUANG NAM PROVINCE

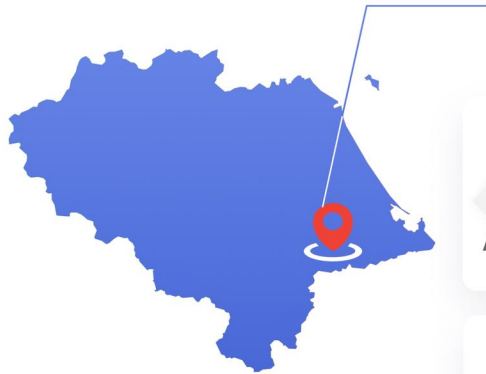
SEEDING



- Selected **30** leading cinnamon trees and built a **10 hectare** transformed cassia seed garden.
- Building the **original cassia seed garden** with a scale of **05 ha**.
- Worked with Hanoi Forestry Institute to continue deploying **97 dominant cassia trees**, preparing documents and submitting to the province for approval to be recognized. In addition, people collect seeds and self-seed **150,000–250,000 plants** annually.

3 MAIN MATERIAL AREAS

📍 QUANG NAM PROVINCE



QUANG NAM MAP

BAC TRA MY DISTRICT PRODUCTION AREA : 1.500 HA



100 Ha

AVERAGE HARVEST AREA YEARLY



100 – 300 Mt

AVERAGE DRIED CASSIA
BARK QUANTITY



1.700 Ha

EXPECTED NEW PLANTING AREA
FROM 2021 – 2025



> 400 Mt

DRIED CASSIA QUANTITY 2021

PRODUCT TYPE:



CASSIA TUBERS &



CASSIA ESSENTIAL OIL (DISTILLED FROM BRANCHES, BRANCHES, LEAVES).

3 MAIN MATERIAL AREAS

📍 QUANG NAM PROVINCE



QUANG NAM MAP

PHUOC SON DISTRICT

DISTRIBUTION OF CASSIA IN PHUOC SON BY COMMUNES

📍 COMMUNES	🌲 PRODUCTION AREA (Ha)
PHUOC KIM	147
PHUOC THANH	323
PHUOC LOC	120

DRIED CASSIA BARK



65 MT

BRANCHES & LEAVES



70 MT

 Average productivity of cassia at the age of 10 years is 10kg/tree, over 20 years there are trees over 100kg.



Select **30** dominant cassia trees for conservation and propagation - due to the impact of floods in 2020, only 20 trees remained and were handed over to the Agricultural Technical Center for management. On average, each year provides

33,000 seedlings of cassia for farmers to expand their area.

POLICY



Many documents have been issued to conserve and develop cassia: **Decision No. 1805/QĐ-UBND**, Decision No. 1218/QĐ-UBND, Decision No. 534/QĐ-UBND... Agricultural Technical Center to study and have a plan to organize the seeding of seedlings to ensure quality; capital support, seed ... for cassia growers.

HARVEST CASSIA IN VIETNAM



3 MAIN MATERIAL AREAS

📍 QUANG NGAI PROVINCE

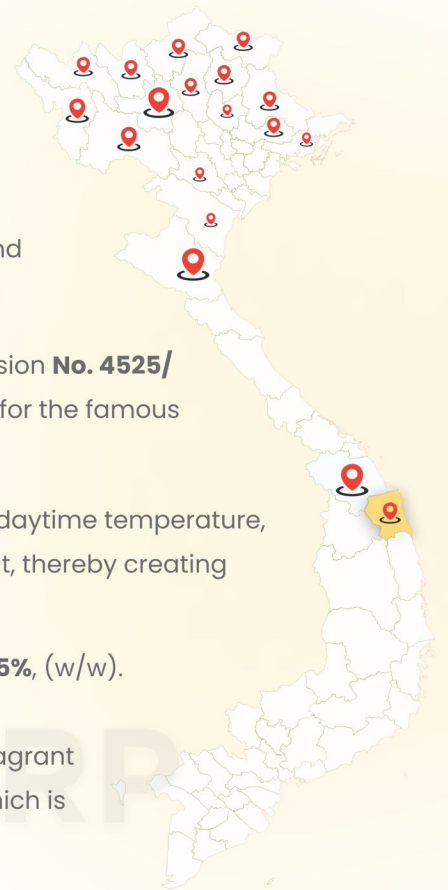
📍 Concentrated in **Tra Bong District**. Since the **6th century**, Arab, Portuguese and Chinese traders have come to this area to buy cassia.

📄 On November 23, 2020, the National Office of Intellectual Property issued Decision **No. 4525/QĐ-SHTT** on granting a certificate of registration of geographical indications for the famous "**Tra Bong**" cassia product.

🏔️ Grown in low **undulating hills** and **high mountains**, strongly separated, high daytime temperature, quite clear day and night temperature range, hot during the day, cold at night, thereby creating quality characteristics. of Tra Bong cassia.





🧪 Cinnamaldehyde content is quite high. Most of the mean values are **above 85%**, (w/w). Especially, this content in peel and leaf **essential oils is over 89%**, (w/w).

🧴 The relative density has a low value, so the scent of Tra Bong cassia is very fragrant (**fragrant, intensely aromatic**) and has high pharmacological properties, which is considered the "four great medicinal herbs".



3 MAIN MATERIAL AREAS


📍 QUANG NGAI PROVINCE

NO.	COMMUNE	 PRODUCTION	 AVERAGE	 QUANTITY (MT)	 NEW PLANTING FROM
		AREA (HA)	PRODUCTION (MT)		2021-2025 (HA)
1	TRA SON	36,4	5,0	182	253
2	TRA GIANG	14,2	5,0	71	27,5
3	TRA LAM	257	4,0	1.028	367
4	TRA PHONG	856,7	5,0	4.284	225
5	TRA THANH	307	5,0	1.535	175
6	TRA THUY	163,7	4,5	737	250
7	TRA XINH	107	4,9	524	275
8	HUONG TRA	719	5,0	3.595	325
9	TRA HIEP	455,2	4,0	1.821	415
10	TRA BUI	207	5,0	1.035	100
11	TRA TAY	497	5,0	2.485	202
12	SON TRA	1.018,5	4,0	4.074	475
13	TRA TAN	3	4,5	9,135	0
	TOTAL	4.642	4,6	21.379	3.090

3 MAIN MATERIAL AREAS

QUANG NGAI PROVINCE

POLICY

-  District's government regularly provides seedlings to people to expand the area. In 2020, the number of trees supported is **284,600** trees.
- Huynh Thi Thanh Thuy, Head of Agriculture and Rural Development Department of Tra Bong district, said: *"The district is actively applying technology and scientific and technical advances from propagation, farming, exploitation and processing cassia"*.
- In particular, the unit has coordinated with the **Forest Protection Department** to conduct research on conservation of **Tra Bong native cinnamon varieties** in Tra Hiep and Tra Thuy communes. After 6 years of research, the project has selected **200 dominant cassia** trees to keep genetic resources for seeds, so far 10 hectares have been planted; at the same time, continue to research and create a successful nursery of nearly **40,000** Tra Bong cassia seedlings.

3 MAIN MATERIAL AREAS

📍 QUANG NINH PROVINCE

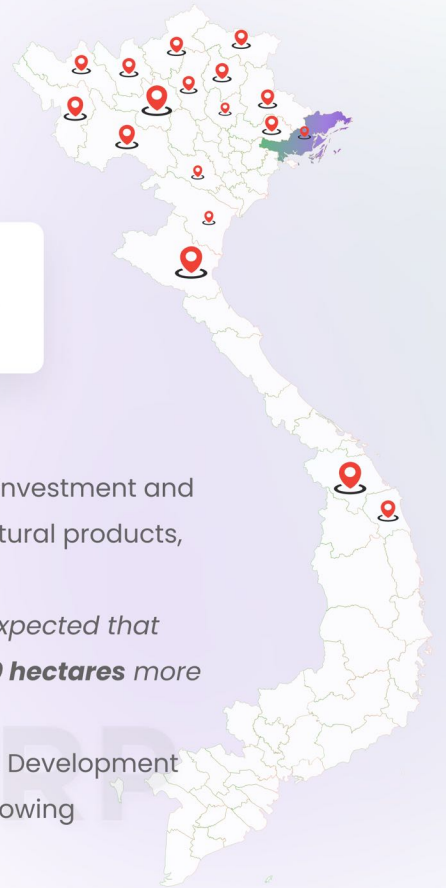


In Quang Ninh, cassia is concentrated in localities such as **Dam Ha (4,500 ha)**, **Tien Yen (900 ha)**, **Binh Lieu (700 ha)**, in addition, scattered in **Ba Che, Hai Ha...**

POLICY



- Quang Ninh has issued **Resolution 194/2019/NQ-HDND** to encourage investment and association in the production, processing and consumption of agricultural products, including cassia.
- Ms. Hoang Thi The, Deputy Director of Quang Ninh province said: *It is expected that Quang Ninh will build a concentrated cassia growing area of **150–200 hectares** more in **Dam Ha, Tien Yen and Ba Che districts** to serve export demand.*
- In the nearest future, Quang Ninh Department of Agriculture and Rural Development will organize training courses on science and technology for cassia growing households.



3 MAIN MATERIAL AREAS

📍 QUANG NINH PROVINCE



QUANG NINH MAP

DAM HA DISTRICT



The mountainous coastal district located in the east of Quang Ninh province is the locality with the largest cassia growing area in the province. The annual production of dried cassia is about **650-700 tons/year**, the highest is **1,200 tons/year**.



The district has built the **Organic Cassia Project** with the aim of building a material area that meets the **US and European Organic Standards**, services about **200 tons** of organic dried cassia in 2021 and maintaining the **expansion of 400-600 tons** of dried cassia in different areas in next years.



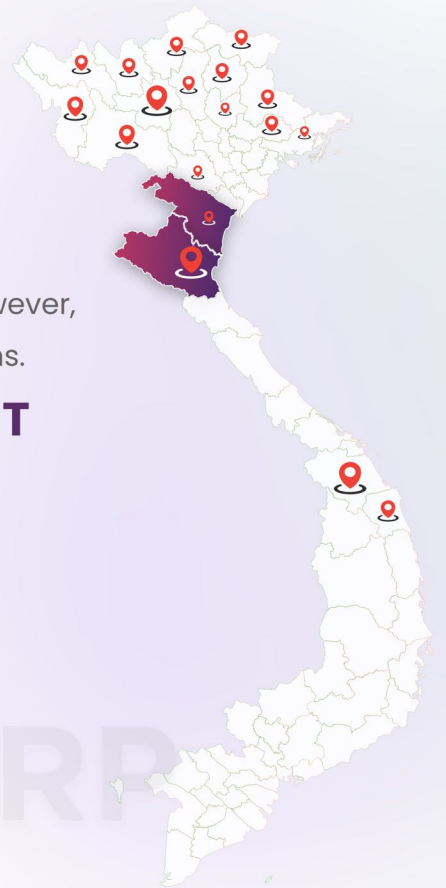
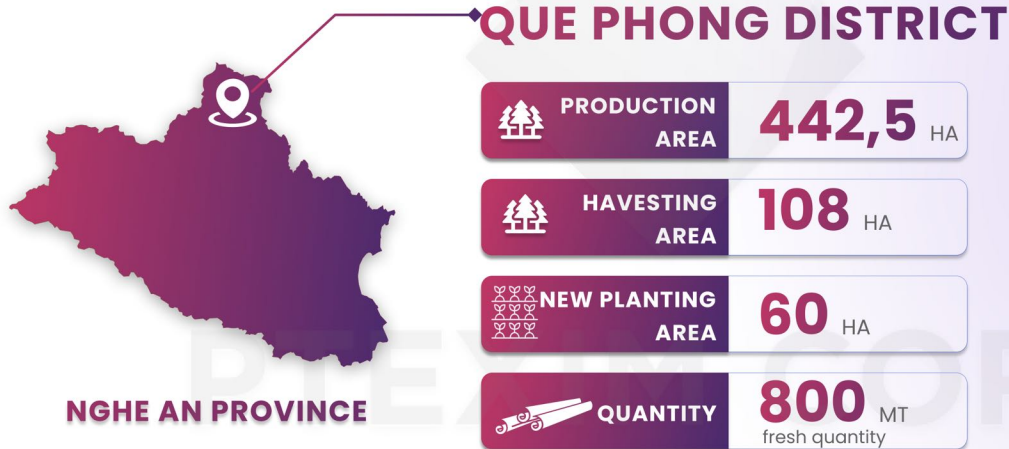
On March 16, 2021, **Control Union Certifications** has certified **329 ha/79 households** in Dam Ha and Tien Yen districts to meet **European (EU) Organic** standards.

3 MAIN MATERIAL AREAS

📍 NGHE AN – THANH HOA

📍 NGHE AN PROVINCE

Cassia in Nghe An is grown concentrated in **Que Phong** district, however, people grow it in small and fragmented areas in their home gardens.



3 MAIN MATERIAL AREAS

NGHE AN – THANH HOA

THANH HOA PROVINCE

Distributed mainly in **Thuong Xuan** district, small and insignificantly scattered in **Ngoc Lac, Lang Chanh** and **Quan Son** districts.



THUONG XUAN DISTRICT



Planted 1,479 ha of cassia interlaced with acacia (with a ratio of 20 to 50% cinnamon) - equivalent to about **700 ha** of cassia in **17 communes, towns** and **15 ha** of cassia varieties in **Xuan Lien Nature Reserve**.



The area of newly planted cassia in the district is nearly **200 ha**, but it is scattered and not concentrated. The plan is to plant another **1,000 hectares** of cassia by **2025**.

THANH HOA PROVINCE

POLICY



The government has many projects to preserve, expand and develop cassia trees, and mobilize people to plant cassia interspersed with other economic crops. At the same time, efforts to develop the "**jewel cassia**" variety as well as to expand the area, build a geographical indication to increase the brand name for cassia.

3 MAIN MATERIAL AREAS

OTHER PROVINCES



BAC KAN

In 2019, there were about **3,700 hectares** planted cassia.

LANG SON

Distributed in **Cao Minh commune, Trang Dinh district**. In 2020, the whole commune planted **60.3 hectares** of cassia trees, reaching 240% of the district's target. In the first 6 months of 2021, more than 50 hectares planted.

THAI NGUYEN

Planted in **Dinh Hoa district** on **2,700 ha** - some areas of 5-year-old cassia have begun to be exploited and trimmed, expected to **reach 10,000 ha** by 2030.

TAY NGUYEN

Trial planting from 2017 in **Gia Lai province**, expected to be harvested in next 6-7 years.



PTEXIM is one of the leading reputable cassia exporters in Vietnam. Many cassia products meet strict criteria

PTEXIM CORP depending on the customers's demand.



**CASSIA BROKEN
CLEAN**



CASSIA CHIPS



**CASSIA
CIGARETTE / VERA**



CASSIA POWDER



CASSIA SPLIT



WHOLE CASSIA

OVERVIEW

STAR ANISE & CASSIA

VIETNAM



 **HIEN, NGUYEN VU | C.E.O**

 **OFFICE**

43 Street17, Quarter 5, An Phu Ward, District 2, Thu Duc City, Ho Chi Minh City, VN

+84 902 222 295

spices@ptexim.com.vn | hienvv@ptexim.com.vn

www.ptexim.com.vn



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