



Wakayama Budo Sansho Pepper

**Nature and Humans Grow
Fragrant Berries**

The Story of
Wakayama
Premium Foods

Local People and Climate
Vol.5

Wakayama – The Birthplace of Budo Sansho Pepper and the Largest Production Area of Sansho Pepper in Japan

There is a Japanese proverb “Even though a berry of sansho pepper is small, it is piquant”, which illustrates a small person who is so talented and powerful. This proverb best describes the characteristics of sansho pepper.



Sansho pepper is said to be native to East Asia and Japan, and its special refreshing aroma and taste have attracted Japanese people since ancient times. According to the “Engishiki”, a collection of government regulations completed in 927 during the Heian period, sansho pepper naturally grown in fields and mountains and planted in gardens, was used as medicine or spice.

Two major cultivars of sansho pepper are ‘Asakura Sansho’ that is native to Asakura in Yoka Town, Yabu County, Hyogo Prefecture, and ‘Budo Sansho’ that is originated in Wakayama Prefecture.

‘Budo Sansho’, which literally means “grape sansho” in Japanese, produces berries like grape clusters as its name suggests, and each berry is larger than that of the other cultivars. It has thick flesh and a small seed. It smells remarkably fresh and tastes piquant.

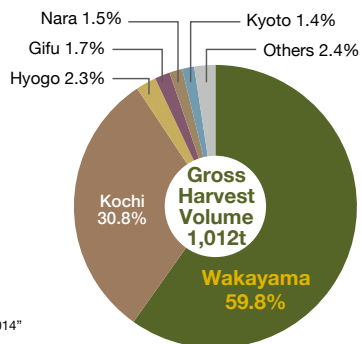
In Shimizu District, Aridagawa Town, Wakayama Prefecture, sansho pepper was grown for medicine in the Edo Period (1603-1867). The variety at that time is thought to be ‘Asakura Sansho’.

According to the first volume of Shimizu Town History, ‘Budo Sansho’ is believed to have originated from the fact that a wild sansho tree was transplanted to the garden of Kanemon Ioki, a villager of Toi, in Tenpo Era (1830-1844). Since then, this variety has been widely produced in Aridagawa Town and its surrounding areas along Nagamine Mountains, such as Kainan City and Kimino Town, but it is quite rare outside Wakayama Prefecture even now.

The annual amount of harvest of sansho pepper in Wakayama is over 600 tons and the largest in Japan. Above all, Aridagawa Town, the birthplace of ‘Budo Sansho’, is the large production area accounting for about 67 % of the total yield of Wakayama Prefecture.

Sansho Harvest Volume in 2014 (t)

| | | |
|---|--------------|---------------|
| 1 | Wakayama | 605.5 |
| 2 | Kochi | 312.1 |
| 3 | Hyogo | 23.6 |
| 4 | Gifu | 17.5 |
| 5 | Nara | 15.0 |
| 6 | Kyoto | 13.9 |
| | Others | 24.4 |
| | Total | 1012.0 |



Source: “The Survey for the Trend of Special Fruits Production in 2014” by Ministry of Agriculture, Forestry and Fisheries



Best Climate and Environment for Producing Sansho Pepper

The shape of Aridagawa Town, located in northwestern area in the Kii Peninsula, is long from east to west. The western edge of Kii Mountainous Area is in the town. Nagamine Mountains extend from east to west in the north, and Shirama Mountains in the south. In the central part of the town, the Arida River rising in Mt. Koya meanders from east to west. 76



% of the surface is covered with forest. The forest industry is developed in the upstream area surrounded by mountains, and the production of mandarin orange, one of the regional specialties, is the major industry in the downstream area.

Aridagawa Town belongs to the Setouchi and Nankai Climatic Regions, and its climate is relatively warm. However, Shimizu District where 'Budo Sansho' was born is located in the upper stream and mountainous area, and it snows every winter though the climate is rather warm in the town as a whole.

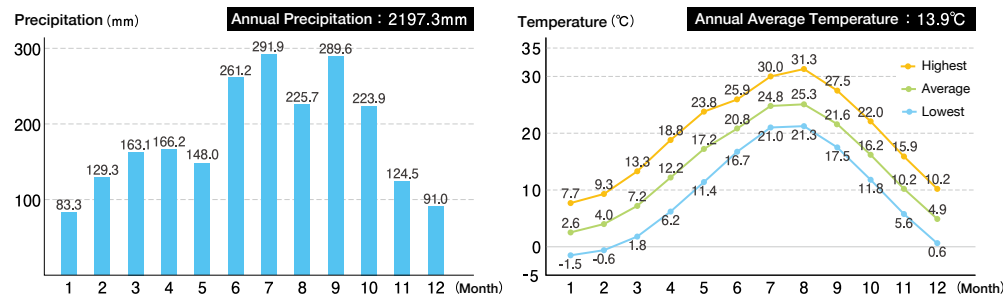
Shimizu District is a farming village on the river terraces. In flat farmlands, rice is mainly planted, while sansho pepper grown in sloping mountainous fields because the arable land is limited.



Sansho is a Rutaceous shrub and shallow-rooted often damaged by excessive humidity or drought. It grows well in slope lands with avoidance of exposure to the afternoon sun, short hours of sunlight and good air circulation and drainage, so the production of sansho pepper has become popular around Toi in Shimizu District at altitudes between 500 to 600 meters.

The Climate of Shimizu District, Aridagawa Town (Average of 2008 to 2017)

Source: AMeDAS of Japan Meteorological Agency



A series of Agricultural Techniques Grows and Bears Fruits

'Budo Sansho' used to be planted in sloping areas and ridges between rice fields. With decrease in working-age population and aging of population, farmers have started to grow sansho pepper more efficiently and more easily in the fields, some of which are converted from terraced rice fields.



"Mi Sansho" is mainly used for tsukudani, processed food boiled down in soy sauce, and "Hi Sansho" for spice and natural medicine. In Shimizu District, the harvest of "Hi Sansho" is about nine times as much as that of "Mi Sansho".

In order to improve tree vigor, 'Fuyu Sansho' has been used as a rootstock resistant to disease for 30 years.

Five years after one-year-old trees of 'Budo Sansho' grafted on the rootstocks are planted in the field where is not so humid or dried, they start to bear fruits. Then in the tenth year, the harvest volume becomes stable. 10 to 15- year-old ones are at the stage of maturity. The height of a tall tree is as high as three meters. The productive age is as short as 20 to 25 years.

As 'Budo Sansho' is dioecious, one male tree as a pollinizer is planted per ten female ones.

The time of flower bud initiation and blossoming occurs from the late March to the middle and late of April the end of April, they start to make buds and flowers. The weather elements such as temperature and daylight whether honey bees can actively fly around for pollination causes a concern of farmers.

Also, weed management is a busy practice at almost the same time. Since sansho trees are shallow-rooted, farmers cut them off by a machine earnestly without using herbicides. Moreover, they have to frequently patrol the orchard to look for insects because the limited types of pesticides are permitted.

Fruits are harvested by hand during the two main harvesting seasons. In the former season, "Mi Sansho" (fresh sansho) is harvested. In the middle to end of May, when the seed of a fruit get hard, farmers harvest fruits in sunny or cloudy days. If harvested fruits get wet, their quality may become poor. In the latter season, "Hi Sansho" (dried sansho) is harvested. For about two months in July to August, farmers harvest fruits from lowland fields to highland ones gradually as their growth speed varies with altitude. The harvested fruits are shipped to markets continuously.



As fruits of "Mi Sansho" are fragile, farmers pick up whole clusters and remove leaves without touching each fruit. When fruits of "Hi Sansho" become yellowish, farmers pick up whole strobili, removing leaves if they can.

Pruning in winter is particularly important as it affects the harvest next year. The soil is kept in good condition by applying compost in winter.

Recently, wild boars and deers damage agricultural products in the surrounding fields. Above all, deer eat messily bark and buds of sansho trees, and lead them to death. Farmers set fences as high as two meters in order to guard trees from them.

Preserving 'Budo Sansho' and Passing down to Next Generation

Farmers have passed down the slope fields in the mountainous area as suitable location for 'Budo Sansho' from generation to generation. After World War II, the demand of spices increased as Japanese people changed their dietary habit. Moreover, a large volume of sansho for herbal medicine was in demand when Chinese medicine became popular. Therefore, farmers in Shimizu started to enlarge the area of 'Budo Sansho' fields and reach full-scale production around 1965.



In 1968, 20 farmers organized sansho producers association which has implemented quality management at the stages of producing, drying, and shipping sansho. They aimed at stable production and quality improvement.

'Budo Sansho' is shipped as "Mi Sansho" and "Hi Sansho".

In the early summer, farmers have to harvest each cluster of "Mi Sansho" by hand within about 10 days so quickly that they need extra seasonal workers. The thorns of sansho trees also bother workers. The harvested "Mi Sansho" fruits are gathered in the packing house in the town. After removing stems and leaves, sansho is shipped to markets.

"Hi Sansho" is harvested in summer. The fruits dried by each farmer are carried to the packing house of JA Arida (Arida Agricultural Cooperative). The seeds and foreign objects are removed thoroughly, graded and finally shipped to markets.

Thanks to all the efforts, 'Budo Sansho' is highly evaluated as an excellent spice by traders and markets.

Forestry used to be a major industry in Shimizu, but has declined since 1980. Now, the production of 'Budo Sansho' has become a new profitable industry, and the sales amount of it accounts for 70 % of that of whole agricultural products in Shimizu where few industries prosper. Though the population in Shimizu is aging, sansho provides benefits to the rural area.

They are doing their best to pass down sansho to the next generation, to develop facilities that can reduce the burden of shipping operations and make the quality stable, and to get known all over the world as a producing area of premium 'Budo Sansho'.



Processing machine in the packing house



"Mi Sansho"



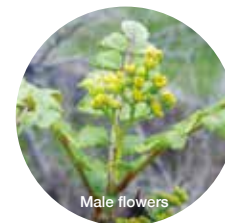
"Hi Sansho"

Various Flavors of 'Budo Sansho'

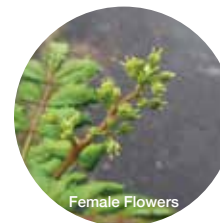
Since a long time ago, sansho has been used as a spice, seasoning, and herbal medicine, and is deeply rooted in our life and culture.

The special spicy taste and flavor of sansho make digestive organs active, cure anorexia, activate the metabolism, and enhance sweating. Sansho can also cut down the intake of salt, because it improve the sense of taste by paralyzing tongue and stimulating the gustatory area of the brain.

All the parts of 'Budo Sansho' are useful and have their best season respectively.



Male flowers



Female Flowers

Buds (Early April)

For suimono (clear soup), marinated leaf bud, etc.

"Hana Sansho" (Middle April)

Small yellow flowers on male trees. For clear soup, tsukudani (boiled in soy sauce), etc.

"Mi Sansho" (May to June)

Raw green fruits. For chirimen sansho (with dried baby sardines), tsukudani, etc.

"Kona Sansho" (After late August)

Milled "Hi Sansho". Useful for seasoning such as Shichimi Togarashi (the mixture of seven spices including chili pepper).



"Kona Sansho"

Tree

The trunk is very hard and tough, being useful for canes and pestles.

The local people have tried to develop new processed foods; seasoning (miso, soy sauce, dashi soup, flavoring oil, etc.), dishes (curry sauce, ramen noodle, etc.), jam and confectionaries.

In other countries, 'Budo Sansho' is highly evaluated especially in Europe where the usage of spice is very common. It is getting well-known to the spice makers, best restaurants, and big-name chefs.



Local Processed Products of 'Budo Sansho'

'Budo Sansho' was often used in Japanese dishes, but now new uses of it as the ingredients of cocktail and secret flavor in confectionaries have been found.

'Budo Sansho' is a worldwide product, and you should try it in harmony with various dishes.



Bon Bon Chocolat 'Budo Sansho'



Calendar of Operations for 'Budo Sansho' Cultivation

| January | February | March | April | May | June | July | August | September | October | November | December |
|------------------------------------|----------|---------------------|-------|--------------------------|------|------------------------|--------|--------------------------|---------|-------------|----------|
| Flower Bud Initiation and Anthesis | | | | | | | | | | Defoliation | |
| Pruning | | Basal Fertilization | | Additional Fertilization | | Harvesting "Mi Sansho" | | Harvesting "Hi Sansho" | | | |
| | | | | | | | | Additional Fertilization | | | |

For More Information on Foods of Wakayama Prefecture...

Wakayama Specialties Online Catalog

<http://www.pref.wakayama.lg.jp/prefg/071700/database/dbtop.html>

Wakayama Intermediate Product Catalog

<http://www.pref.wakayama.lg.jp/prefg/071700/proc/index.html>

<Wakayama Specialty Shop in Tokyo>

Wakayama Kishikan <http://www.kishukan.com>

<Online Shopping>

Furusato Wakayama Waiwai Ichiba (Yahoo shopping)

<http://store.shopping.yahoo.co.jp/waiwai071700>

To inquire about foods of Wakayama...

Wakayama Prefecture

Agriculture, Forestry and Fisheries Department Food Promotion Division

<http://www.pref.wakayama.lg.jp/prefg/071700/index.html>