

Chapter 6

Chili Peppers in the Islands of Kagoshima

Sota YAMAMOTO

1. Introduction of chili peppers into Japan

Chili peppers (genus *Capsicum* spp.), consisting of approximately 25 species belonging to the Solanaceae family, are native to the Americas. Two species, *C. annuum* and *C. frutescens*, are distributed in Japan, and there are several hypotheses on the introduction of chili peppers into Japan; in 1542 by Portuguese (“*Soumoku Rokubu Kousuhou* [草木六部耕種法] (1832)”), in 1592-1595 from the Korean Peninsula during Hideyoshi’s invasions there (“*Kahu* [花譜] (1694)”), and in 1596-1615 or 1605 with tobacco by “*Namban*” or the European Merchants (“*Honchou Shokukagami* [本朝食鑑] (1697)”). The entry for February 18, 1593 in the “*Tamon-in Nikki* [多聞院日記]” (a diary written by

monks in Tamon-in temple in Nara) includes a description of chili peppers. There is a note in “*Jibong yuseol* [芝峰類説] (1614)” written by Yi Su-gwang that Japanese introduced chili peppers into the Korean Peninsula. It is considered, anyhow, that chili peppers were introduced into the Far East before the seventeenth century and traversed countries with people and/or other trades.

2. Local names for chili peppers in Japan

Local names for chili peppers in Japan are mainly divided into four categories; 1: *tougarashi* (*toogarashi*, *tongarashi* etc.; *tougarashi* is a most common name for chili peppers in Japan now and also a scientific name) in central Japan, 2: *nanban* (*nanba* etc.; *namban* means the European Merchants) in northern and northeastern Japan, 3: *koshou* (*kosho*, *kusho*, *kushu*, *kuusu* etc.; these names also imply *Piper nigrum* or black pepper) in western and southern Japan, and 4: *karashi* (*karase* etc.; these also imply Japanese mustard) in especially Shikoku (Fig. 1). “*Seikei Zusetsu* [成形図説] (1804)” directed by Shigehide SHIMADZU describes that chili peppers are called “*nanban*” in Tohoku and “*koshou*” in Kyushu.

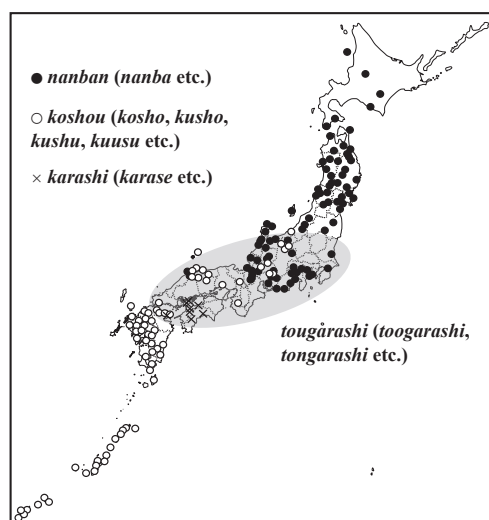


Fig. 1. Local names for chili peppers in Japan (data from “*Nihon Shokubutsu Hougen Shusei* [日本植物方言集成] (2001),” “*Ryukyu Retou Shokubutsu Hougenshu* [琉球列島植物方言集] (1979),” “*Nihon no Shokuseikatsu Zenshu* [日本の食生活全集] (2000),” and results of the author’s field survey).

Table 1. Local names for chili peppers in islands of Kagoshima Prefecture

Island	Local name for chili peppers
Tanegashima	<i>kosho, koshoo</i>
Amami-Oshima	<i>kushu, kusho, kosho, koshoo, too kushoo</i> (<i>too</i> : china)
Kikaijima	<i>hushu, husu</i>
Tokunoshima	<i>kushu, kushuu, kuso</i>
Okinoerabushima	<i>kooreeguusu, hushu</i>
Yoronjima	<i>aa gushu</i> (= (<i>aa</i> : red,), <i>hoohushi</i> (same as <i>too kusho</i> ?)

3. Chili peppers in the Islands of Kagoshima

A field survey was conducted in 2009 to study local names and usage of chili peppers on Amami-Oshima Is. (Table 1). People called chili peppers “*kosho*, *koshou*, *kusho*,” as same as people in other islands of Kagoshima (Table 2). Interestingly, there is a section of village (*aza* [字]) named “*kuso*” in Tokuwase, Tokunoshima Is. (Fig. 2), which is called “*kushu*” or “*kushu-bate* (=chili pepper field)” by local people there.

People on Amami-Oshima Is. added fresh fruits to *miso* soup, sprinkled them with soy sauce on rice, and squashed them in soy as dipping sauce for *sashimi* (raw fish) (Table 1). People soaked fruits in vinegar, which is called “*ku'shouzu*,” and used it as dipping sauce (Fig. 3A-C). This condiment was also used as a pesticide. Products of fruits soaked in vinegar made from sugarcane were sold as a souvenir (Fig. 3D). In Yoronjima Is., there are local products of hot sauces made from chili peppers (Fig. 3E).

Similar to “*ku'shouzu*,” “*bagun*” is made by soaking *C. frutescens* peppers in “*silam*” (vinegar made from sugarcane) in the Batanes Islands, Philippines (Fig. 4A). People in Chuuk and Pohnpei, Federated States of Micronesia, soak *Capsicum* fruits in the water of mature coconuts, which are placed in the sun for several days and allowed to ferment and then sour (Fig. 4B). In Cambodia one of the most important elements of soaking fruits in liquid seems to be the sour taste. It is unknown whether people in Asia and Oceania developed this spicy-sour flavor themselves or had widely adopted it after its introduction from Europe.

Some people on Amami-Oshima Is. soaked fruits in *shouchu* (Japanese spirit) and used it as a condiment and medicine. The liquid of fruits soaked in *shouchu* is applied to a talipes spasmodicus as an ointment and to a stomachache as an oral medicine (Table 1). In the Okinawa Islands, a special product called *kooreeguusu* is made by soaking fruits of *C. frutescens* in *awamori* (Okinawa spirit) and used to flavor noodles or other foods (Fig. 4C). Fruits soaked in liquor are also seen in Taiwan (Fig. 4D).

Leaves of chili peppers, which are rich in carotenoids and vitamins as well as fruits, are used as a vegetable in Japan; boiled down in soy, fried food, preserved in salt, preserved in *miso*, and added into *miso* soup. The usage of leaves is also well known to other regions of Asia and Oceania, but it was not confirmed on Amami-Oshima Is. in this survey. No one used chili roots as a spice or vegetable there.

Two people on Amami-Oshima Is. said that people should swallow fruits of chili peppers when they have a stomachache. Scientific studies have demonstrated that certain extracts and essential oils of *Capsicum* have negative effects on the growth of some bacteria. Moreover, it is known that capsaicin, the pungent ingredient in hot peppers, has a long-lasting suppressive effect on sensory neuron activity, and this compound is used to relieve pain caused by arthritis and pruritus in modern medicines.

In Tokunoshima Is., it is reported that 1: people eat fried egg cooked with chili peppers when they have a stomachache, 2: people drink liquid of fruits soaked in *shouchu* if they have stomach diseases, and 3: pregnant women should not eat chili peppers,

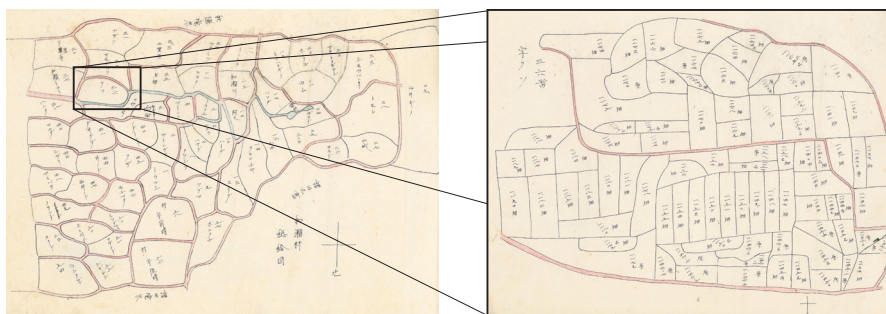


Fig. 2. A section of village (*aza* [字]) named *kuso* in Tokuwase, Tokunoshima Is., which is called *kushu* or *kushu-bate* (=chili pepper field) by local people there (“*Azaezu Tokunoshima-cho Ooaza Tokuwase*” [字絵図徳之島町大字徳和瀬], of which the original maps would be drawn in 1879, offered by Tokunoshima Town Museum [徳之島町郷土資料館]).

otherwise the eye sight of an unborn child would become weak. In Han Chinese traditional medicine books, there are descriptions that consumption of too many chili pepper fruits could cause poor eyesight. However, people in seventeenth-century Spain reportedly ate two roasted chili peppers after every meal to improve poor eyesight. Other medicinal usage of chili peppers, such as fruits for chilblains and dried or fresh flowers and seeds for diuresis, is known in Kagoshima.

4. Were some chili peppers introduced into Asia from the Americas via Oceania?

Bird pepper (*Capsicum frutescens* L.) is widespread throughout tropical and subtropical regions in the world, and it is only distributed in the Nansei (below the Amami Islands) and Ogasawara (Bonin) islands in Japan. It is found that *C. frutescens* in the Nansei Islands possesses a rare isozyme pattern in Southeast and East Asia (YAMAMOTO 2010, YAMAMOTO *et al.* 2011). It is assumed that this

Table 2. Local names and usage of chili peppers in Amami-Oshima Is. (data from a field survey conducted by the author in 2009)

Interviewees		Chili peppers		
Sex (date of birth)	Location	Local names	Usage	
			Condiment	Medicine Others
Female (n.d.)	Naze, Amami City	<i>kosho</i>	Fresh fruits for miso soup; fruits soaked in vinegar, which is used for <i>sashimi</i> etc.	— Feeding fruits to chicken
Female (n.d.)	Naze, Amami City	<i>kosho</i>	Sprinkling fresh fruits with soy sauce on rice; fresh fruits for <i>sashimi</i>	— —
Female (n.d.)	Naze, Amami City	<i>koshou</i>	Fruits soaked in <i>shouchu</i> (Japanese spirit) as condiment and also medicine	— —
Female (1931)	Chinase, Amami City	<i>kosho</i>	—	Fruits soaked in <i>shouchu</i> , of which the liquid is applied to talipes spasmodicus as an ointment —
Female (1926)	Chinase, Amami City	<i>kosho</i>	—	— —
Male (1950)	Tone, Yamatoson	<i>koshou</i>	Dipping sauce (fresh fruits squashed in soy) for <i>sashimi</i>	Swallow fruits when you have a stomachache —
Male (1926)	Toen, Yamatoson	<i>kosho</i>	Dipping sauce (fresh fruits squashed in soy) for <i>sashimi</i>	Soaking fruits in <i>shouchu</i> , of which the liquid is applied to a stomachache as an oral medicine —
Female (1919)	Naon, Yamatoson	<i>koshou</i>	Dipping sauce (fresh fruits squashed in soy) for <i>sashimi</i>	— —
Female (1934)	Imazato, Yamatoson	<i>kosho</i>	Fruits soaked in vinegaer, which is used as dipping sauce for <i>sashimi</i>	Soaking fruits in <i>shouchu</i> , of which the liquid is applied to a stomachache as an oral medicine Fruits soaked in vinegar, which is used as pesticide
Male (1931)	Imazato, Yamatoson	<i>koshou</i>	Dipping sauce (fresh fruits squashed in soy) for <i>sashimi</i>	— —
Male (1938)	Imazato, Yamatoson	<i>koshou</i>	Fruits soaked in vinegaer, which is used as dipping sauce for <i>sashimi</i>	— —
Female (n.d.)	Imazato, Yamatoson	<i>kusho</i> , <i>kosho</i> , <i>takano-tsume</i>	Fruits soaked in vinegar, which is called “ <i>ku'shouzu</i> ” and used as dipping sauce for <i>sashimi</i>	— Fruits as pesticide
Male	Yanma, Sumiyouchou	<i>koshou</i>	Fresh fruits for miso soup; dipping sauce (fresh fruits squashed in soy) for <i>sashimi</i>	Fruits applied for a stomachache —
Male	Agina, Setouchicho	<i>koshou</i>	Fruits soaked in vinegaer, which is used as dipping sauce for <i>sashimi</i>	— —



Fig. 3. Condiments of chili peppers in the Amami Islands (A-B: Fruits soaked in vinegar, which is called *ku'shouzu* as dipping sauce for *sashimi* on Amami-Oshima Is.; C: a small and erect fruit type of *C. annuum* on Amami-Oshima Is.; D: local products of fruits soaked in vinegar made from sugarcane on Amami-Oshima Is.; E: hot sauces made from chili peppers on Yoronjima Is; and F: fruits of *C. annuum* sold on Yoronjima Is. as “*shimatougarashi*”).

phenotype was introduced to the Philippines from the Americas via Oceania by the Manila galleons (Spanish trading ships) in the mid-sixteenth century through to the early nineteenth century, and thereafter dispersed into insular regions of Southeast and East Asia (Fig. 5).

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Fig. 4. Condiments of chili peppers in other insular regions of Asia and Oceania (A: *bagun* made by soaking *C. frutescens* fruits in *silam* (vinegar made from sugarcane) in the Batanes Islands, Philippines; B: fruits soaked in the fermented water of mature coconuts in Chuuk Atoll; C: *kooreeguusu* made by soaking fruits of *C. frutescens* in *awamori* on Taketomijima Is., the Yaeyama Islands; and D: fruits soaked in liquor with salt in Taiwan).

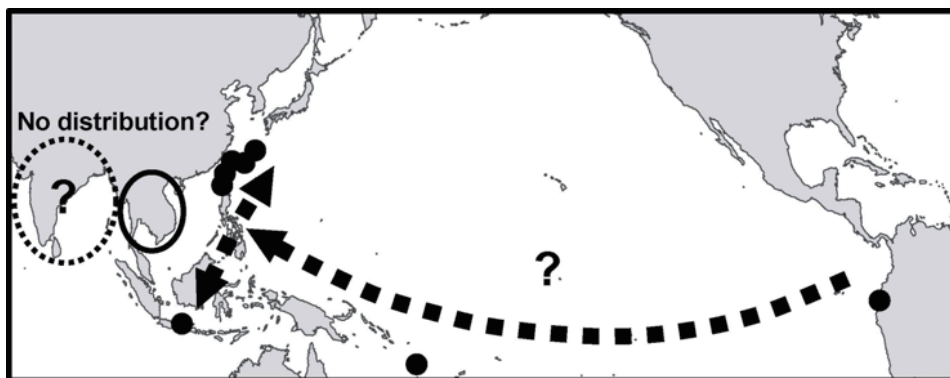


Fig. 5. Distribution of accessions possessing a rare isozyme pattern (shikimate dehydrogenase phenotype B; ●) of *C. frutescens* and its hypothetical dispersal routes.

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