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# Culture, History and Applications of Medicinal and Aromatic Plants in Japan

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Additional information is available at the end of the chapter

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## Abstract

Historically, the Japanese began to use aromatic and medicinal plants for ritual activities, food flavor, and treatment of their bodies. The exotic plants, new ideas, and culture associated with medicinal and aromatic plants were introduced to Japan from other countries, primarily via Korea. In this way, experience and knowledge of uses were accumulated, and applications of aromatic and medicinal plants were expanded. The oldest Japanese medicine “Wa ho” leads the way to folk medicine today, and traditional Japanese medicine (Kampo) has spread into modern use. The elegance tradition of “Kodo,” an incense ceremony of Japan, was developed because of the use of aromatic incensed wood in sixteenth century as recreation. Paired along with this ceremony is the Japanese sa-do tea ceremony that the spirituality and esthetic sense are inherited to Japanese today. Japanese green tea is becoming popular in many countries due to the constituent, catechins, that medically treats vascular disease, several cancers, and type II diabetes. Today, the Japanese medical system has new direction, integrating medicine with the adoption of modern western and alternative medicine. Scientific data must continue to be collected for interactions between the two medicinal systems for integrative medicine to be ideal for body, mind, and spirit of humans and nature.

**Keywords:** Kampo (traditional Japanese medicine), green tea, integrative medicine, body and spirit, phytotherapy

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## 1. Introduction

Aromatic and medicinal plants fill a significant role in human societies that have helped improve the lives of people since ancient times. Ancient people became aware of the value and attractiveness of aromatic and medicinal plants, and the significance of historical books is a guide for the use of the plant material (**Table 1**) [1]. Initial books on use on medicinal and

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Timeline	Book and author	Book about	Country
~500–300 BC	<i>Hippocratic corpus</i> written by Hippocrates; <i>De Causis Plantarum</i> and <i>Historia Plantarum</i> written by Theophrastis	Formalized medicine practices in diagnosis and treatments; list of medicinal plants and application	Greek
~150–100 BC	Huangdi Neijing (author unknown)	Theoretical foundation of Chinese medicine, diagnostic methods, and acupuncture	China
~100 BC–100 AC	Celsus wrote <i>De Medicina</i> ; Dioscorides wrote <i>De Materia Medica</i>	Alexandrian medicine; pharmacopoeia of herbs and the medicines	Greek
~200–300 AC	<i>Shennong Bencaojing</i> (author unknown); <i>Shanghan Lun</i> written by Shang Zhongjing	Agriculture and medicinal plants; 113 herbal prescriptions and six stages of disease	China
~750–800 AC	Lu Yu wrote <i>The Classic of Tea</i>	Tea tree, making tea, and tea ceremony	China
~800–1000 AC	Avicenna writes <i>Book of Healing</i> and <i>Canon of Medicine</i> ; Albucasis wrote <i>Kitab al-Tasrif</i> ; Hildegard of Bingen wrote <i>Ohysica</i> ; Averroes wrote <i>Kulliyat</i>	Clinical trials on medicines; Encyclopedia of medical practices; Scientific and medicinal properties of various plants; Medical encyclopedia	Arabic countries and Germany
~1000–1500 AC	Ibn al-Baitar wrote <i>Compendium on Simple Medicaments and Foods</i>	Pharmacopoeia listing 1400 plants	Arabic countries
~1500–1600 AC	John Gerard wrote <i>Herball, or Generall Historie of Plantes</i>	Heavily illustrated of 1000 plants	England
~1900–2000 AC	René-Maurice Gattefossé wrote <i>Aromathérapie</i>	Aroma and essential oil for Medicine	France

**Table 1.** Significant materials and books in history of medicinal plants and medicine [1].

aromatic plants were sourced in various parts of the world, such as the Middle East, Greece, China, and India, indicating that these ancient civilizations used indigenous aromatic and medicinal plants to improve lives in their own separate ways before ideas were shared. Japan is no exception; names of some local aromatic and medicinal plants were recorded in the oldest Japanese history book “Kojiki” written in 712 A.D. Aromatic and medicinal plants, however, continue to influence human life, culture, and history. Currently, an estimated 70,000 plant species are used in traditional medicine [2].

In Japan, most aromatic and medicinal plants have been used in the crude drug system, Kampo, the traditional Japanese medicine system, and in herbal tea as alternative or complementary medicines. The production value of Kampo was \$1.38 billion, accounting for only two percent of all Japanese pharmaceuticals in 2011 [3], and although a total of 83.5% of 684 medical doctors were using Kampo for their prescriptions, according to web survey by the Japan Kampo Medicines Manufacturers Association (JKMA) in 2008 [4], the market for Kampo medicines increased by 23% over 5 years (2007–2011). In 2008, the usage of crude medicine for Kampo was 20,000 metric tons, of which a total of 83 percent was imported from China [5]. Almost 250 kinds of crude (not processed) medicines are used as Kampo materials in 2008, and the top 20 are listed as example (**Table 2**) [5].

Ranking	Common name	Spices	Family	Parts used	usage (kg)
1	Licorice	Glycyrrhiza uralinsis	Leguminosae	Root	1,267,395
2	Chinese Peony	Paeonia lactiflora	Paeoniaceae	Root	1,164,126
3	Cinnamon	Cinnamomum cassia	Lauraceae	Bark	1,033,793
4	Indian bread, tuckahoe	Poria cocos	Polyporaceae	Fungus	996,311
5	Jujube	Ziziphus jujuba	Rhamnaceae	Fruit	675,997
6	Pinellia	Pinellia ternata	Araceae	Tuber	629,063
7	Oriental Ginseng	Panax ginseng	Araliaceae	Root	610,092
8	Angelica acutiloba	Angelica acutiloba	Apiaceae	Root	580,607
9	Ephedra	Ephedra sinica	Ephedraceae	Stem	568,686
10	glutinous starch syrup	Oryza sativa	Gramineae	Seed	555,718
11	Kudzu vine, Japanese arrowroot	Pueraria lobata	Papilionaceae	Root	553,999
12	Atractylodes lancea	Atractylodes lancea	Asteraceae	Rhizome	501,647
13	Job's Tears	Coix lacryma-jobi	Gramineae	Seed	449,253
14	Sickle Hare's Ear	Bupleurum falcatum	Umbelliferae	Root	443,811
15	Rhubarb	Rheum palmatum	Polygonaceae	Rhizome	439,590
16	Atractylodes	Atractylodes japonica	Asteraceae	Rhizome	427,357
17	Alexandrian Senna	Senna alexandrina	Caesalpiniaceae	Leaves, pods	426,230
18	Chinese foxglove	Rehmannia glutinosa	Scrophulariaceae	Root	397,512
19	Baikal skullcap	Scutellaria baicalensis	Labiatae	Root	383,969
20	Gypsum				380,348

**Table 2.** Usage of top 20 crude medicines for Kampo in 2008 [5].

## 2. Introduction and opening: medical systems and recreations

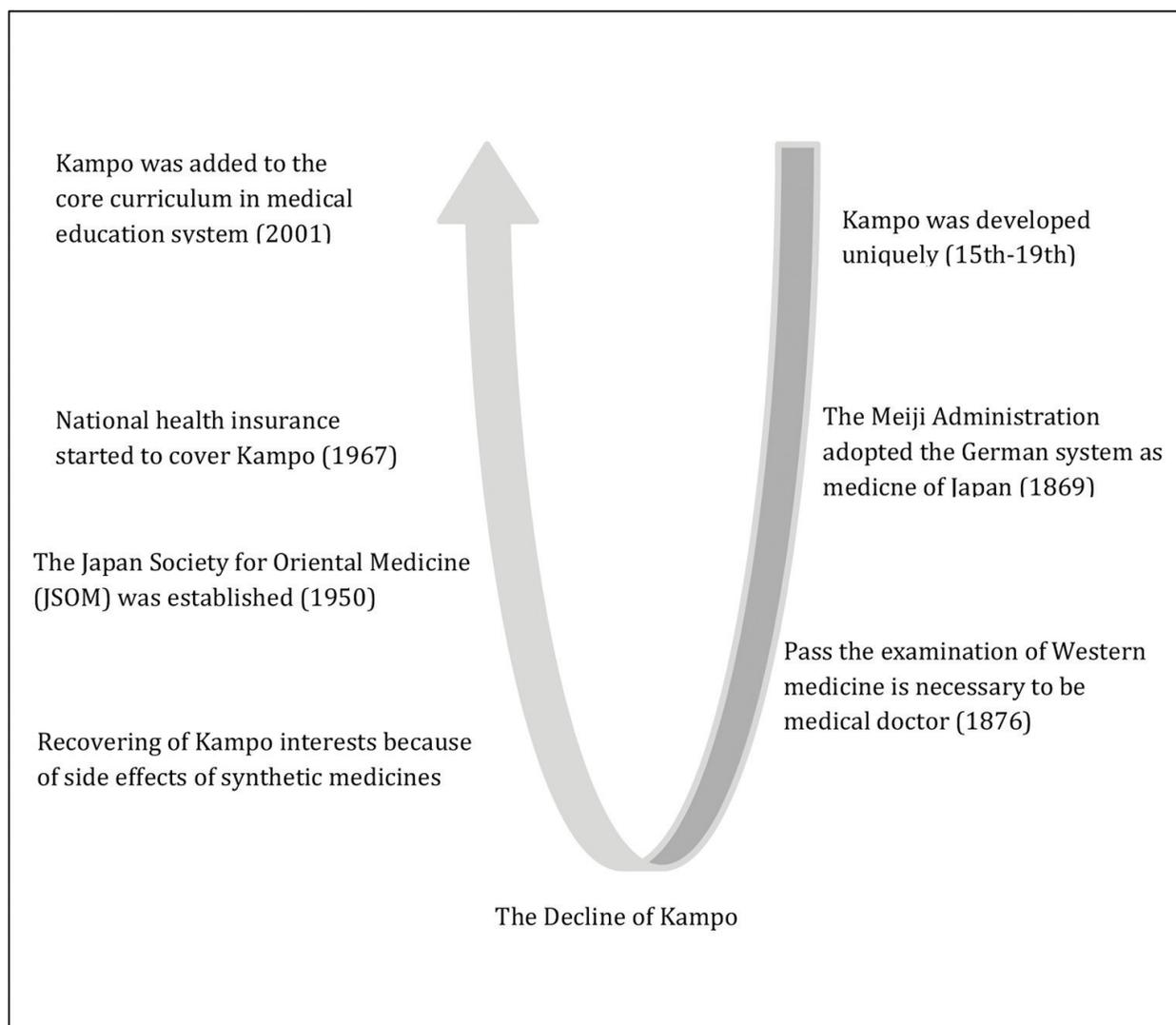
Several of the plants were discovered to have medicinal effects and were spread throughout the world along with traditional medicines, and some of were being as indigenous. At first, traditional medicines were introduced to Japan from China via Korea from the seventh to ninth centuries which is called traditional Chinese medicine (TCM). Before TCM was introduced to Japan, an older medicine called "Wa ho" existed. As TCM started flourishing, Wa ho declined and will likely remain as a folk medicine. TCM influenced traditional Japanese medicine (TJM) known as Kampo, in terms of fundamental principle and diagnosis, such as Yin-Yang (two opposites form the whole), Qi (life energy), and the Five Elements (interactions and relationships). Many ancient thin wooden strips which were excavated from a 7th century ruin recorded Chinese medicinal plant names that indicated their use as medicines. In 756, a total of 60 crude medicines, for example, pepper, cinnamon, licorice, rhubarb, betel nut palm, and croton, were contributed to Shosoin, where the treasure house that belongs to

Todai-ji, Nara, and 38 of them remained (**Figure 1**). At Shosoin, seven scent bags, included Borneo camphor, musk, and other fragrances from China also remained.

In 894, Japanese missions to Tang China were abolished by the imperial court of Japan, and the exchange of crude medicines, TCM, and culture was stopped. Thereby, medicine in Japan was developed uniquely until Sanki Tashiro (1465–1537) introduced Chinese medicine in 1498. Dosan Manase (1507–1594), Tashiro's apprentice, encouraged the more formal Chinese medicine, known as "gosei-ho," while Geni Nagoya (1625–1694), Gonzan Goto (1659–1733), Toyo Yamawaki (1705–1762), and Todo Yoshimasu (1702–1773) regarded "ko-ho" in which medicine should be clinical and adopted "*Shanghan Lun*" (*Treatise on Cold Damage Disorders*) for acute fever symptoms and "*Jin Gui Yao Lue*" (*Essential Prescriptions from the Golden Cabinet*) for pathology and treatments of various diseases which are the oldest complete clinical textbooks written by Zhang Zhongjing (150–219) [4, 6, 7]. Ko-ho put emphasis on abdominal palpation and is main stream of Kampo [8]. The word "Kampo" is used for comparison with "Rampo," a conventional western medicine introduced from the Netherlands in the 17th to 19th centuries. Kampo, however, was the main medicine in Japan until the end of the Edo era. In 1869, the Meiji administration decided that the national medicine system would be the German system, and then, in 1876, the government declared a regulation that passing a western medicine examination was necessary to become a medical doctor. This issue made Kampo usage decline rapidly, only a part of doctors, pharmacists, and medicine traders carried Kampo. After World War II, however, the side effects from using synthetic medicines happened frequently, thereby people returned to the idea of Kampo. At the same time, the Japan Society for Oriental Medicine (JSOM) was established to promote oriental medicine and contribute to the progress and dissemination of oriental medicine in 1950. The national health insurance started to cover Kampo in 1967, and therefore, the demands for Kampo increased. Finally, the medical specialist system of Kampo and pharmacist system were started in 1990 and 2000, respectively. Kampo was added to the core curriculum in medical education system in 2001. Thus, history indicates a U-turn movement for Kampo (**Figure 2**) [6, 8, 9].



**Figure 1.** Shosoin treasure house that belongs to Todai-ji, Nara (Wikipedia).



**Figure 2.** U-turn movement of Kampo in Japan.

According to *“Nihon Shoki,”* the second oldest historical book in Japan, aloeswood (incense wood) drifted ashore on Awaji island of Japan in 595 A.D. Thus, incense in Japan started in the sixth century, with more brought from China, along with Buddhism. At first, the Japanese used incense wood in religious practices. *Ganjin*, the Chinese monk that arrived in Japan to propagate Buddhism, taught the people to make and use incense. Later, the Japanese started for transferring the elegant aroma to the robes and sutra books on Nara period. In the Heian period, aristocrats enjoyed mixing incense into their daily life with poems written about the incense, such as *The Tale of Genji* in the eleventh century [10].

In the late Muromachi period during the sixteenth century, samurai started to pursue a holistic approach, including the senses, human spirit, and nature. This new approach was the start of *“Ko-do”* (a way of incense or an elegant incense ceremony). In addition, *Ka-do* (*Ikebana*, Japanese flower arrangement) and *Sa-do* (Japanese tea ceremony). The incense, aloeswood, was made over time by the formation and ripeness of an aromatic resin. Usually, the incense



**Figure 3.** (a) Incense wood of Jinko; (b) Incense burner (Koro).

wood consists of three kinds, *Kyara*, *Jinko*, and *Byakudan* (**Figure 3a**). Raw materials such as aloes wood are costly because of the limited amount available and expensive equipment (**Figure 3b**). *Ko-do* has not spread widely due to the difficulty in obtaining raw materials as compared with the materials for *Ka-do* and *Sa-do*.

### 3. Conventional and modern uses: spirit and daily life

In the Edo era, Kampo was a medicine for wealthy people only as Kampo doctors visited a home by basket palanquin (a litter for one passenger) and treated patients using expensive Kampo materials. Therefore, the common people had to use Japanese folk medicines developed in earlier times. Such folk medicines exist today, but are not as popular as compared with modern western medicines and Kampo. Folk medicine, however, is an important cultural heritage that the Japanese ancestors left to future generations, including recipes of folk medicines, remedies for home use (**Table 3**). Some manufactured folk medicines are sold at pharmacy as quasi-drugs such as medicinal teas, cosmetics, medicinal bath, and supplements (**Figure 4a**).

The latest Japanese Pharmacopoeia (No. 17 issued 2016) included 324 crude medicines for Kampo [11]. Usually, Kampo medicines are a mix of several kinds of crude medicine, and each prescription has a name. Recently, many medical doctors prescribe Kampo medicines because of an increase in patients who prefer crude medicine rather than synthetic medicine. Patients can get Kampo medicines easily even without prescription (**Figure 4b**).

Aromatic and medicinal plants have spread broadly into Japanese spirit and daily life. The tea and aroma activities were simply an amusement for people until the Muromachi period that was started before the Japanese “sa-do” (tea ceremony) and “ko-do.” At the end of the Muromachi period, Buddhist monks reformed the philosophy of tea to express conjointly with ethics and religion, changing the societal view about man and nature [12]. This innovative philosophy reflects the esthetics and world view of Japanese, for example, “wabi” and “sabi.” Wabi expresses an esthetic of beauty of deficiency, in other words, senses which try to find sufficiency of mind from humble and deficiency. Sabi is beauty which could feel profoundness and richness inside of tranquility naturally. Subsequently, *Sen no rikyu* who is a

Japanese and common name	Scientific name	Medicinal effects	Uses	Part used
Hechima, Luffa	<i>Luffa cylindrica</i>	Heat rash, chapped skin, sunburn	Cosmetic	Water from fruit
Yomogi, Japanese mugwort	<i>Artemisia indica</i>	Dry skin, acne	Cosmetic	Leaf
Biwa, Loquat leaf	<i>Eriobotrya japonica</i>	Heat rash, eczema, insect bite, rash	Cosmetic	Leaf
Shiso, Perilla herb	<i>Perilla frutescens</i>	Eczema, acne, oily skin	Cosmetic	Leaf
Obako, Plantago seed	<i>Plantago asiatica</i>	Water metabolism, poor visibility, phlegm	Tea	Seed
Gobo, Burdock fruit	<i>Arctium lappa</i>	Heat diffusion, inflammation, promote eruption	Tea	Fruit
Dokudami, Houttuynia herb	<i>Houttuynia cordata</i>	Laxative, diuretic	Tea	Upper ground (flowering time)
Senna, Senna leaf	<i>Senna alexandrina</i>	Laxative	Tea	Leaf
Kuko, Lycium fruit	<i>Lycium chinense</i>	Weak constitution, fatigue, cold hands and feet, insomnia	Liquor	Fruit
Ninjin, Ginseng	<i>Panax ginseng</i>	Tonic	Liquor	Root
Toki, Japanese angelica root	<i>Angelica acutiloba</i>	Tonic, circulatory disorder, analgesic, sedative, compensate blood	Bath	Root
Senkyu, Cnidium Rhizome	<i>Cnidium officinale</i>	Anemia, cold hands and feet, menstrual irregularity	Bath	Rhizome
Kamitsure, German Chamomile	<i>Matricaria recutita</i>	Inflammation, sedative, calm spasm, excrete gas	Bath	Flower
Syobu, Calamus	<i>Acorus calamus</i>	Backache, neuralgia	Bath	Root, leaf
Yuzu, Yuzu	<i>Citrus junos</i>	Circulation improvement, cold prevention, backache, neuralgia	Bath	Fruit

**Table 3.** Plant materials, medicinal effects, and uses for folk medicines.



**Figure 4.** (a) Medicinal teas of folk medicine are sold at pharmacy; (b) Kampo medicines are sold at pharmacy.

famous tea master completed the foundation of present sa-do. The sense of wabi and sabi connects with Japanese spirit today, and sa-do is traditional practice for wholehearted hospitality for our daily life (Figure 5). A book “ALL ABOUT TEA” known as the encyclopedia of tea



**Figure 5.** One of the sa-do practice called “otemae.”.

describes the commercial side of tea including the production, cultivation technique, chemical constituent, distribution, trade, consumption, and cultural side related to the as history of drinking tea and the relationships among drinking tea, the literature, and art [13]. The book helps readers to comprehend sa-do as well.

In Japan, Buddhists worship ancestors with incense sticks as one of the traditional manners in appreciating all generations of family in daily life. The incense sticks are made from mixed lots of materials, including charcoals, incensed woods, crude medicines, and fragrances. Such incense sticks are used mostly in homes and temples (**Figure 6**).



**Figure 6.** Incense sticks are offered to any Buddhist ceremony at temple.

#### 4. Representative plant: Japanese green tea

Tea is the second consumed drink in the world after water. Tea is called by different names in different countries or areas. The origins, however, were split into two generally, “cha or chai” and “te or tea” depending the proximity to either China or Europe, respectively [14]. Almost all teas such as green, white, oolong, black, and pu’erh except maté and rooibos are made from *Camellia sinensis*, and the significant differences come from the processing of the leaves. Oxidation in leaves starts immediately after leaves are picked. Black tea is fully oxidized; oolong tea is half of oxidized; and green and white teas are barely oxidized at all.

As well-known, drinking tea was introduced from China by a Japanese Buddhist monk in seventh to eighth century. The manner became common among aristocrats and monks in ninth century at the time, and tea was hardened tea leaves like ball named “*dan cha*.” In Song dynasty of China, the way of drinking tea was changed to use matcha and introduced to Japan. Buddhist monks drank matcha to avoid sleepiness and to concentrate their mentality for Zen practices. Chinese monk *Eisai* wrote “*Kissa yojoki*” was written about the medical effects of tea in 1211 [15]. In early fourteenth century, a game called “*To-cha*” was in fashion, people would first drink tea and then guess the area in which the tea was grown. In the late fifteenth century, *Jyuko Murata* (1423–1502) created “*wabi-cha*,” based on the simplicity of Zen spirit and spirituality of “*wabi*.” Subsequently, *Sen no rikyū* established sa-do. In 1830s, the finest quality green tea was “*gyokuro*,” which tasted mellow, sweet, and full bodied, came into being in *Uji* area.

The most famous tea production area is Shizuoka prefecture, where tea is exposed to a strong wind and rain and cultivated on the hillside or riverside where other crops could not survive (Figure 7). The different quality of soil produces a different color and quality of tea leaf (Figure 7). In 2015, the total area of picked green tea was 35,600 ha, a one percent decline. The yield of fresh leaf, 357,800 metric tons in 2015, declined by four percent from the previous year in Japan [16]. According to survey, more than 82% Japanese drink green tea every day [17]. In Japan, green tea is drunk in the morning after waking, after or during every meal, for break in the afternoon, to show hospitality whenever guests visit. Usually, Japanese enjoy many kinds of flavors and tastes, for example, “*sencha*,” “*gyokuro*,” “*matcha*,” “*hojicha*,” “*genmaicha*,” and “*bancha*” have differences that come from the processing



Figure 7. Green tea farms at Kawane honcho, Shizuoka.

methods of green tea (**Table 4**). The taste is a little bitterness and astringency, and it is perfectly refreshing your mouth after meals. Most distributed Japanese green tea is Sen-cha which accounts for 60% of all kinds of green tea [16].

green tea		Name	Characteristic
Leaf	color		
		sen cha	young and soft leaves are hand-rolled, commonly drunk in Japan
		gyokuro	top quality of green tea, grown under the shade for 20-30 days before harvested
		genmai cha	green tea with roasted brown rice, popularly as an alternative standard green tea
		hoji cha	roasted green tea, good flavor of roasted
		matcha	the finest tea buds of shade-grown grinded by mill stones, used in sa-do

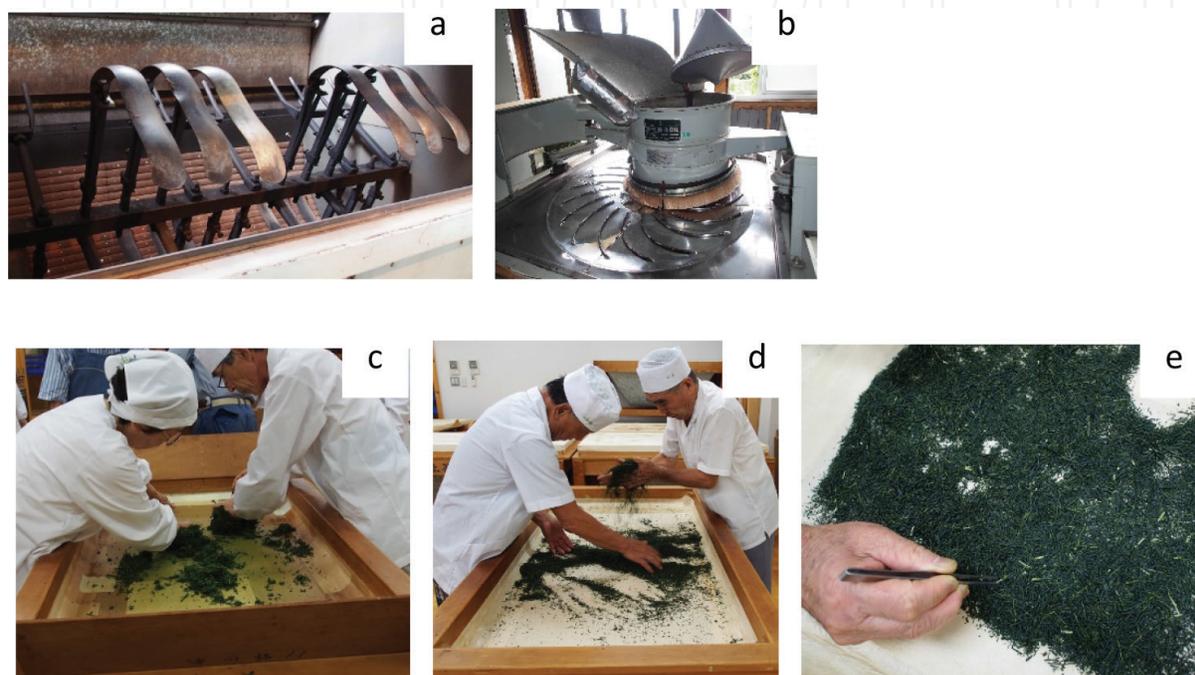
**Table 4.** Different kinds of green tea.

Name of task	Action	Time (min)	Water contents (%)
Sassei (steam)	Fresh leaves are steamed at 100°C, and oxidation is stopped	0.5–1	100
Reikyaku (cool down)	Wait until room temperature and some water is removed from leaf surface	5	–
Sojyu (first hand-rolling)	Wield leaves and some mass of leaves come up by light hand-rolling at 35°C	60	40
Jyunen (second hand-rolling)	Push and make a mass bigger by knead hand-rolling and remove some water from inside of leaf at 100°C	20	–
Chujyu (third hand-rolling)	Loosen a mass up and twist leaf by hand-rolling at 95°C	30	30
Seijyu (forth hand-rolling)	Shape like needle and polish by hand-rolling at 85°C	60	10
Kansou (dry)	Dry at 65°C	120	5
Shiage (finishing)	Removed leaf powder and piece of stem with some heat for dry	–	4

**Table 5.** Processing sequences, action, and water contents for green tea manufacture.

Processing green tea is delicate and has several significant steps that require specialized skills. After the leaves are picked from the tree, a total of eight work sequences are necessary for ready to drink tea (**Table 5**).

Manufacturing Japanese green tea takes more than 5 h with much labor if all sequences are done by hand. Recently, most of the processing steps have become automated. Hand making tea, however, is still practiced by some processors as the hand-rolling technique is a cultural heritage (**Figure 8a–e**).

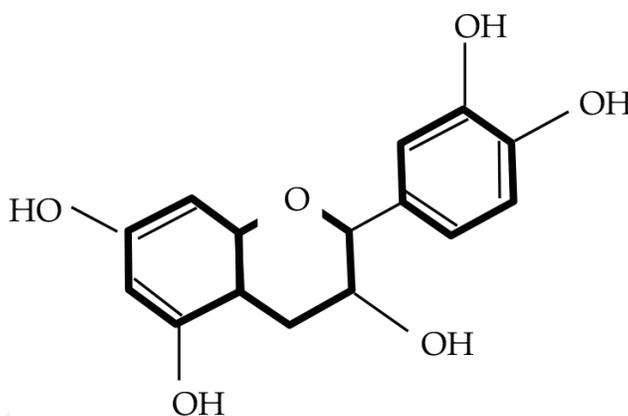


**Figure 8.** Processing machines, at Kawanehoncho, Shizuoka, (a) sojyu-ki, (b) jyunen-ki. Processing by hands, at Kawanehoncho, Shizuoka, (c) sojyu, (d) seijyu, and (e) shiage.

Recently, a number of scientific studies have suggested that green tea has medicinal effects, reducing high cholesterol and treating cancer, diabetes, and liver disease [18]. In the natural elements and nutrients in Japanese green teas, the most consumed *sencha* has the highest tannin (catechin), carbohydrate, and vitamin C, E, and B1 levels among *gyokuro*, *sencha*, *hojicha*, and *matcha* (**Table 6**) [19]. Catechins are one of the major polyphenolic compounds in green tea, which works on preventing various vascular diseases (**Figure 9**). Usually, catechin is very widespread, especially in woody plants and some medicinal plants, such as *Agrimonia eupatoria* (agrimony), *Crataegus laevigata* (hawthorn), *Salix alba* (white willow), and *Vaccinium myrtillus* (bilberry) contain catechin [20]. Significant effects of the catechins are antioxidative, antihypertensive, anti-inflammatory, antiproliferative, antithrombogenic, and lipid lowering actions that are important for maintaining vascular health [21]. The major catechin, epigallocatechin-3-gallate (EGCG), has been suggested to have great potential as a cancer preventative agent for liver, stomach, skin, lung, mammary gland, and colon cancer [22]. EGCG functions not only as a powerful antioxidant and preventing oxidative damage in healthy cells, but also an antiangiogenic and antitumor agent. EGCG stimulates telomere fragmentation by inhibiting telomerase activity. Some scientific articles suggest that green

	Gyokuro	Sencha	Houjicha	Matcha
Tannin (Catechin)	10.0	13.0	9.5	10.0
Caffeine	3.5	2.3	1.5	3.2
Theanine/Amino Acid	29.1	24.5	18.2	30.6
Fat	4.1	4.7	4.8	5.3
Carbohydrate	43.9	47.7	39.2	38.5
Fiber	11.1	10.6	18.7	10.0
Ash content	6.3	5.0	5.5	7.4
Vitamin A (µg)	21,000	13,000	6,700	29,000
C (mg)	110	260	44	60
E (mg)	16.6	68.1	-	28.1
B1 (mg)	0.30	0.36	0.10	0.60
B2 (mg)	1.16	1.43	0.82	1.35
Niacin (mg)	6.0	4.1	5.6	4.0

**Table 6.** Natural elements and nutrients in Japanese green tea [19].



**Figure 9.** Catechin.

tea catechin may help in controlling type II diabetes by daily consumption [23–25]. EGCG blocks sodium-dependent glucose transporter 1 (SGLY1) and lipid micelle formation in the intestine.

Most convenience stores and supermarkets in Japan sell many kinds of bottled green tea. Some brands put a mark “food for specified health uses” indicating healthy effects, such as cholesterol reduction or gentle rising of blood sugar after meals, and have received approval for special marking from the Consumer Affairs Agency (**Figure 10**) [26]. These types of foods are used for sustaining health and preventing pre-symptomatic disease.



Figure 10. Food mark specifies green tea health uses.

## 5. Application

### 5.1. Integrative medicine

Integrative medicine is a person-centered care system that uses both modern western medicine, to take advantage of pharmaceuticals, operations, radiology, and other complementary and alternative medicines have become popular among advanced countries to change the structure of disease control. Many complementary and alternative medicine systems exist. Phytotherapy has been actively adapted into integrative medicine in United States because herbs and the origin of several pharmaceuticals and the accumulated scientific evidence are comprehended easily. For example, Dr. Andrew Weil of University of Arizona, a leading figure of integrative medicine, is an herbalist and prescribes medicinal plants for treatment [27].

Aromatherapy was introduced to Japan from the UK in 1985, and became popular as a relaxation technique. Subsequently, aromatherapy has become better known by medical professionals and researchers. This activity advanced clinical application in psychosomatic medicine, obstetrics and gynecology, and palliative care coupled with the spread of integrative medicine. In 2008, the Japanese Society of Integrative Medicine was established, a project team of integrative medicine in Ministry of Health, Labor, and Welfare was launched in 2010, and the Japanese Society of Phytotherapy was established in 2012 for study of medicinal herbs.

Although still controversial, functional mechanisms of complementary and alternative medicines are thought to have improved the spontaneous healing power of humans. Currently, this understanding is compatible with oriental thought in a regimen and a balanced diet lead to a healthy body. Accumulation of scientific evidence, culture, and history exists behind the rapid spread of aromatherapy and medicinal herbs in Japan. The next generation of integrative medicine that creates inclusive correlation between body, mind, spirituality, natural environment, and local community can be expected to help those suffering from aging and improve the health of a maturing society.

### 5.2. Dietary supplements

In recent years, diffusion of dietary supplements is remarkably increasing worldwide, and the trend to use natural substances in healthcare and wellness will continue to rapidly expand dietary supplement markets. In one of the highest dietary supplement consuming countries, 53% of the

adults in the United States used at least one dietary supplement each day in 2003–2006 [28]. This number was more than two times that of Japan [29], and comes from different systems of health insurance. To enter health insurance is not necessary for USA citizens have a relatively expensive medical care system, making individuals concerned about their health and wellness. In contrast, Japan citizens are basically mandated to enter a health insurance. According to various reports, some consumers in Japan have the wrong knowledge about dietary supplements. For example, an inappropriate meal is no problem if you take dietary supplements [30]. Nevertheless, the Japanese market of dietary supplement keeps growing rapidly, and the prospect of dietary supplement in Japan will continue to shift more to prevent disease and maintain health and wellness.

## 6. Conclusions

Medicinal and aromatic plants help people remain healthy and have influenced culture, nature, and history of humans from ancient times. Further study of medicinal and aromatic plants may discover new constituents that become future medicines. In future research, more clinical trial and interaction between medicinal plants and pharmaceuticals need to be examined and useful information shared throughout the world. The important thing is to appreciate the blessings of nature and sustain all of genetic resources. Today, the society of severe aging and maturity needs to shift from animalistic world view, such as the stronger prey upon the weaker in a high-growth period, to a cooperative vegetative world view with the key factor being medicinal and aromatic plants.

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