Research Progress on the Health Benefits of Scented Tea

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Abstract

Scented tea, also known as fragrant tea, mainly comprises green tea as the tea base and the dried and processed flowers of various plants. It is a unique reprocessed tea in China. There are many types of scented tea, including jasmine, lily, osmanthus, rose and honeysuckle. The scenting process greatly influences the quality of the scented tea. Humidifying continuous scenting processes, frying flower processes and innovative drying methods have been developed to resolve the issues of cumbersome, time-consuming and low utilisation rates of flowers in the process of making scented tea. The main chemical components of scented tea are polyphenols as well as exogenous plant glycosides, flavonoids, lactones, coumarins, quercetin, steroids, terpenoids and other compounds. Scented tea plays an active role in the prevention and treatment of various diseases and has as anti-oxidant, anti-cancer, hypoglycaemic, hypolipidemic, immunomodulatory and neuromodulatory effects. This chapter mainly reviews and summarises the types of scented teas and their related health functions.

Keywords: scented tea, medicinal value, tea polyphenols, health function, disease prevention

1. Introduction

Scented tea, also known as fragrant tea, is made from the flowers or leaves of plants. It is a type of reprocessed tea unique to China. It uses the properties of tea that make it good at absorbing odours and blends scented flowers and tea together. The tea absorbs the fragrance and then the dried flowers are removed using a sieve. The resulting scented tea has a strong fragrance and a bright tea drink. Scented tea has a long history of production. As early as the Song Dynasty, spices were added to green tea as a tribute to the emperor [1]. The processing technology of tea gradually matured during the Ming Dynasty and the scenting method of scented tea has since progressed [2]. The quality of scented tea is related to the scenting process. Mature scenting processes, such as moisturising continuous scenting, frying flower processes and innovative drying methods can be used to ensure that the scented tea maintains appropriate water content during the scenting process and improves the ability of the tea base to absorb the fragrance of the flowers. Chinese scented tea is mainly
produced in the Guangxi, Fujian, Yunnan, Sichuan and Chongqing provinces. In 2021, the scented tea output in China was 2.917 million tonnes. Scented tea has been exported to Japan, the USA, Russia, Germany and other countries for many years and has a good reputation in local markets.

Scented tea contains various nutrients, such as proteins, amino acids, tea polyphenols, tea polysaccharides, vitamins and minerals. It also contains pigments, taste substances amino acids, catechins, caffeine and aroma substances. These substances not only improve the quality of scented tea but are also required for human physiological activities and contribute to the health effects of scented tea. Protein and amino acids are essential components of human metabolism. The water-soluble protein content of scented tea is around 2% and can be directly absorbed and used by the body through drinking the tea [3]. Scented tea is rich in amino acids, including theanine, glutamic acid and aspartic acid as well as vitamins. For example, jasmine scented tea contains 80–90 mg of vitamin C per 100 g of jasmine scented tea and can improve the immune system [4]. Scented tea also contains mineral elements, such as phosphorus, potassium, calcium, sodium, magnesium and sulphur as well as trace elements, such as iron, manganese, zinc, selenium, fluorine and iodine. In addition, the polyphenolic compounds, tea polysaccharides, caffeine and other components present in scented tea have good health effects on human physiological activities [5]. Scented tea also contains aromatic substances, including esters, alcohols and hydrocarbons, among which linalool, indole, benzyl alcohol and methyl salicylate are the main aroma components. These aromatic substances can aid digestion, relieve stomach pain and calm and regulate the nervous system [6]. Scented tea has the same refreshing effects as coffee due to its high content of caffeine and alkaloids, which are central nervous system stimulants. However, drinking coffee regularly may cause arteriosclerosis, whereas drinking scented tea can avoid this adverse effect. Scented tea contains polyphenols and vitamin C, which can effectively eliminate the adverse effects of caffeine. On the other hand, the caffeine in scented tea can promote gastric secretion, help digestion, enhance fat metabolism and effectively reduce body mass index [7]. Therefore, scented tea can also be used to promote weight loss. Scented tea contains a large amount of vitamin A, vitamin C and other trace elements that protect the eyes and have therapeutic effects on dry eyes caused by overuse of the eyes. Traditional Chinese medicine also commonly uses scented tea for the treatment of eye diseases [8]. Several cell and animal studies have shown that tea polyphenols, polysaccharides and pigments have significant anti-cancer and anti-tumour effects. The main anti-cancer pathways include inhibiting cancer cell proliferation, regulation of signalling pathways to induce apoptosis of cancer cells, inhibition of angiogenesis, inhibition of metastasis and infection of cancer cells and inhibition of tumour immune escape mechanism [9–11].

The pharmacologist Li Shizhen’s ‘Compendium of Materia Medica’ also records the health care effects of scented tea. The chemical composition and health functions of scented tea have been extensively studied over the past two decades to examine the mechanisms behind the health benefits of scented tea. The scientific community and mass media have gradually begun to pay attention to the beneficial properties of scented tea. For example, drinking scented tea is associated with anti-oxidant [12], anti-cancer [13], hypoglycaemic [14], hypolipidaemic [15], immunomodulatory [16] and neuromodulatory [17] effects. This chapter mainly reviews and discusses the health functions related to scented tea and the direction of future research and development.
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2. Types of scented tea

Types of scented tea mainly include jasmine, lily, osmanthus, rose and honeysuckle, as shown in Figure 1.

2.1 Jasmine scented tea

Jasmine scented tea is mainly produced in the Guangxi, Fujian, Sichuan and Yunnan provinces of China. It is a reprocessed tea made by blending tea with jasmine flowers. When brewed and consumed, its aroma is strong, fresh and refreshing. Jasmine scented tea generally uses green tea as the tea base. The choice of tea base is an important factor in determining the quality of jasmine scented tea. The aroma and taste of jasmine scented tea can be improved by making jasmine scented tea with green tea scraps of different particle sizes [18]. Different drying methods lead to changes in the surface and microstructure of the tea base, which in turn affect the quality of the finished jasmine tea. The emergence of vacuum freeze-drying technology has resolved this issue and the moisture content and overall quality of tea base have reached controllable conditions. Therefore, the quality of jasmine tea after scenting is better than that prepared by hot air drying [19].

Jasmine scented tea has physiological effects as well as significant health care properties. Studies have shown that jasmine scented tea can help obese people to reduce lipid levels and lose weight [20, 21]. Improved living conditions have led to women focusing more on ageing and skin problems. The anti-ageing and anti-oxidant health effects of jasmine tea also play an important role in the health benefits of jasmine tea. The polyphenols and pigments in jasmine tea have anti-bacterial effects. Gargling with the water extract of jasmine scented tea can resolve oral problems, such as oral ulcers and swollen gums.

Figure 1.
Different types of scented tea. (a) Jasmine, (b) lily, (c) osmanthus, (d) rose, and (e) honeysuckle scented teas.
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2.2 Lily scented tea

Lily scented tea is mainly produced in the Anhui, Jiangsu and Guangdong provinces. Lily scented tea is prepared by processing fresh lily and green tea together, which retains the original biological activity factor of lily and has the fragrance of green tea. In addition to its strong aroma, lily has edible and medicinal properties. After scenting is complete, the flowers are dried and packaged together, which improves the quality of scented tea and enhances its edible and medicinal value. Current methods of lily scented tea preparation include the treatment of tea billet, maintenance of flowers and the triple scenting of flowers. Finally, high-quality lily and dried tea greens are mixed for drying. This method can control the water content of lily scented tea, improve the quality and taste of lily scented tea and improve its medicinal value [22]. During the traditional drying process of flowers and tea, secondary drying reduces the fragrance of flowers and affects the quality of scented tea, while processing technologies, such as microwave drying or the use of desiccants, can greatly reduce the loss of floral fragrance [23].

Lily scented tea has high nutritional and medicinal values. While it is often made into desserts, people in the Guangdong region prefer to use it to make a tea drink to relieve coughing and sputum production. Lily scented tea tastes sweet and has no irritating taste. It moistens the lungs to stop coughing, clears away heart-burn and calms the mind. Lily scented tea is nourishing and medicinal and can be consumed all year round. It contains a variety of alkaloids, which have a preventive effect on leukopenia, increases the red blood cell count in the blood and has therapeutic effects on cytopenia after chemotherapy and radiotherapy [24, 25]. Lily scented tea can also improve the immune system and has preventive effects on a variety of cancers. The ‘Compendium of Materia Medica’ states that lily scented tea is a high-quality tonic and has properties similar to those of ginseng in tea.

2.3 Rose scented tea

Rose scented tea is mainly produced in the Guangdong and Fujian provinces in China. It is one of women’s favourite scented teas and is also the most common scented tea. Brewed rose scented tea exudes a refreshing aroma and refreshes the consumer. The quality of the finished product of rose scented tea is related to the processing technology. The type of rose and tea base used during the process directly affects the quality of scented tea. During the scenting process, freeze-dried roses are selected and mixed with green tea for secondary scenting. Airtight conditions are maintained during the scenting process to ensure an appealing drinking taste and aroma. Nutrients are not lost during scenting, improving the medicinal value [26]. The tea needs to be dried after scenting. Microwave technology can preserve the fragrance of the scented tea to a great extent and resolve issues such as dull colour and loss of aroma of the scented tea due to high temperature and humidity during drying using the traditional process [27].

Rose scented tea is a precious medicinal material and traditional Chinese medicine often uses rose scented tea with other traditional Chinese medicines to produce different formulas. Using rose scented tea to make wine can reduce blood lipid levels, improve vitality and improve skin texture [28]. Rose essential oil refined from rose scented tea can promote the development of male hormones and sperm and promote blood circulation and metabolism. Rose scented tea is also a commonly used gynaecological Chinese medicine and has a significant effects in the treatment
of gynaecological diseases [29]. Recent studies have shown that rose scented tea extract has anti-viral effects and has been used in the treatment of acquired immune deficiency syndrome and leukaemia and has achieved remarkable results.

2.4 Honeysuckle scented tea

Honeysuckle is a type of vine that is widely used in the pharmaceutical, food and chemical industries [30–32]. Honeysuckle scented tea is prepared by combining fried green tea and fresh honeysuckle in a sealer, separating the green tea and honeysuckle with gauze and stacking them in multiple layers to fully mix the honeysuckle and tea. Finally, dried honeysuckle and green tea are mixed and packaged. This process gives the tea a strong aroma and medicinal properties.

Honeysuckle is commonly used as a precious Chinese medicine. It is used to reduce fever and toxins, free the channels and improve circulation and has broad-spectrum anti-bacterial and anti-viral effects. More than 70% of cold medicines and anti-inflammatory patented Chinese medicines contain honeysuckle, which is known as ‘Chinese medicine antibiotics’ and ‘green antibiotics’. In addition to its medicinal properties, honeysuckle scented tea is used for beauty, weight loss and health care and has also been shown to protect and repair the body. Honeysuckle scented tea relieves heat stroke, sober up individuals after consuming alcohol, clears the mind, relieves thirst, removes toxic substances from the body, lowers fat levels, reduces body weight, clears the skin, prevents ageing and increases longevity [33–35]. It can also lower blood pressure, lower serum cholesterol, increase coronary blood flow, prevent coronary heart disease and heart pain and inhibit the formation of cerebral thrombosis. Drinking honeysuckle scented tea can also improve the body’s resistance to hypoxic free radicals, delay ageing, improve microcirculation, remove peroxidised fat deposits and promote metabolism.

3. Chemical constituents of scented tea

Polyphenols are an important component of tea, accounting for around 18–36% of the tea dry weight. Catechins are the main components of tea polyphenols, accounting for around 70–80% of the total tea polyphenols. Catechins can be categorised according to molecular structure into four types: epicatechin, epigallocatechin, epicatechin-3-gallate and epigallocatechin-3-gallate as shown in Figure 2. Tea polyphenols have strong antioxidant effects that are significantly greater than those of vitamins C and E, although they have synergistic effects with vitamin C and E, with anti-ageing effects [36, 37].

Figure 2.
Structure of catechins EC, epicatechin; EGC, epigallocatechin; ECG, epicatechin-3-gallate and EGCG, epigallocatechin-3-gallate.
In addition to polyphenols, the chemical constituents of scented tea also include glycosides, flavonoids, lactones, coumarins, quercetin, terpenes and other compounds. Chemical studies on jasmine have shown that the main functional components of jasmine include nearly 100 compounds, such as volatile oils, fatty acids, glycosides, terpenoids, lignans and alkaloids [38]. According to the ‘Compendium of Materia Medica’, decoction of jasmine can be used to treat dysentery and abdominal pain and can also be used as an eye wash to treat conjunctivitis [39].

The chemical constituents of lily scented tea were examined by ethanol reflux extraction and the main components were found to be β-sitosterol, stigmasterol and emodin [40]. Among these, β-sitosterol lowers cholesterol, relieves cough and eliminates phlegm, inhibits tumour formation and inhibits skin ulceration. Sterols have high nutritional value and strong physiological activity and are commonly used in the pharmaceutical, cosmetics, animal growth regulators and food industries. Emodin can be used as a laxative and has anti-bacterial, anti-cough, anti-tumour and blood pressure lowering effects.

Studies on the chemical constituents of osmanthus scented tea show that the volatile components mainly include hexadecanoic acid, methyl docosatrienoate, camphor oil and isomenthone [41]. Studies have shown that the flavonoids in osmanthus scented tea have good anti-bacterial activity, especially against Escherichia coli and Staphylococcus aureus. Studies on melanin derived from osmanthus scented tea seed coat showed that it has good anti-oxidant activity and can effectively prevent skin ageing [42].

Rose scented tea is rich in vitamins A, B and C and as well as amino acids, polysaccharides, alkaloids and other functional ingredients. The vitamin C content of roses is very high and can reach eight times that of kiwifruit, 20 times that of sea buckthorn and 700 times that of apples. Rose scented tea contains 16.33% protein and is rich in amino acids. Rose also contains a variety of unsaturated acids, including the essential fatty acids linoleic acid, linolenic acid and oleic acid, which together account for 99.75% of the total unsaturated fatty acids [43]. Rose is rich in dietary fibre, rose flavonoids and amino acids and can reduce blood lipids and blood sugar. It is also rich in trace elements including zinc, copper and manganese. These are important elements of superoxide dismutase and selenium, which is an important element of thiooxyreductase and glutathione peroxidase. These enzymes can improve the immune system and have good anti-oxidant effects [44].

The active components of honeysuckle mainly include phenolic acids, flavonoids, volatile oils and triterpenoid saponins, among which phenolic acids are important secondary metabolites in honeysuckle [45, 46]. Honeysuckle has good anti-oxidant activity due to its multiple phenolic hydroxyl groups in the structure [47]. Honeysuckle scented tea contains quercetin, luteolin, kaempferol, β-sitosterol, wogonin and other components, giving it fever-reducing and cleansing properties. It has also been shown to have preventive effects on coronavirus disease 2019 [48].

4. Health functions of scented tea

4.1 Anti-oxidant effects

The anti-oxidant effects of scented tea can be attributed to the polyphenols in the tea and vitamins, flavonoids and phenols in the different scents. Ma et al. [12] found that jasmine scented tea contained large amounts of tea polyphenols compared
with black and green teas and its anti-oxidant effects were greater that of vitamin C, as determined using the diphenyl-picrohydrazide method. Cong et al. [49] supplemented the diets of growing rats with 6% jasmine scented tea for 30 days and reported an significantly increased activity of anti-oxidant enzymes in the serum and liver. In addition, jasmine scented tea extract has significant anti-oxidant and anti-ageing effects on ageing mice [50]. A study on the anti-oxidant effect of healthy rabbits in vitro showed that the polar components of osmanthus tea can effectively remove superoxide ions in the body and lipid peroxidation of mitochondria in vitro [51]. Chen et al. [52] reported that 6 weeks of continuous gavage using rose scented tea in restraint stressed mice significantly increased the reduced liver catalase activity and glutathione content observed due to restraint stress and decreased plasma homocysteine levels by 20%. In addition, roses contain a large amount of vitamin C, which is a water-soluble vitamin with strong anti-oxidant activity that can effectively eliminate free radicals. After binding with free radicals, vitamin C can be transformed into dehydroascorbic acid and monohydroascorbic acid to eliminate free radicals, giving roses their anti-oxidant effect [43].

### 4.2 Anti-cancer effects

Scented tea has inhibitory effects on various cancers, such as liver, skin, stomach, lung, oral, breast, pancreatic and colon cancers [53–55], due to the presence of polyphenols and their oxidation products and caffeine. Tea polyphenols have strong anti-oxidant properties, scavenge free radicals in the body and can block the synthesis of carcinogens, such as ammonium nitrite. The inhibitory effects of scented tea on cancer are achieved via anti-oxidation, induction of apoptosis and regulation of gene expression. In addition, scented tea contains a large amount of chlorogenic acid and related derivatives, which have shown anti-cancer activity against U937 human histiocytic lymphoma cells, KB human oral cancer cells, MCF-7 breast cancer cells and WI38 lung fibroblast cells [56]. Chlorogenic acid can inhibit colon cancer by inducing the production of reactive oxygen species, lung cancer cells by affecting the expression of apoptosis-related genes and liver, oral, gastric, cervical and breast cancers [57–59]. Kawabata et al. [60] used azomethane to induce a rat model of colon cancer and found that ferulic acid could reduce the incidence of colon cancer in rats. Protocatechuc acid can reduce the enzyme activity of MCF-7, A549 non-small cell lung cancer cells, HepG2 human liver cancer cells, HeLa cervical cancer cells and LNCaP prostate cancer cells, effectively penetrate cancer cells, inhibit lactate dehydrogenase activity and damage the mitochondrial membrane potential and also inhibit MMP-2 secretion to prevent its metastasis in human gastric cancer AGS cells [61]. Studies have found that caffeic acid mainly exerts its anti-cancer effects by affecting the mRNA regulatory network and up-regulating levels of mitochondrial reactive oxygen species in tumour cells [62]. Studies have also shown that isochlorogenic acid A has an inhibitory effect on human ovarian cancer cells, skin melanoma cells, central nervous system tumour cells and colorectal cancer cells [63].

### 4.3 Hypoglycaemic effects

Diabetes is one of the most common chronic diseases seen in clinical medicine its incidence has gradually increased in young people. The blood glucose levels of individuals fluctuate; however, stable blood glucose levels are an important evaluation index of individual physical health. Scented tea can improve the ability of vanadate to
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Regulate blood glucose. Vanadate suspended in jasmine scented tea has hypoglycaemic effects and can stably and effectively maintain blood glucose at normal levels within a few weeks [64]. Studies have shown that drinking jasmine scented tea significantly reduces blood glucose [18]. Starch (polysaccharide) in food is digested into oligosaccharides by salivary amylase and pancreatic amylase, converted to glucose by \( \alpha \)-glucosidase in the small intestine and finally absorbed. Studies have found that osmanthus tea extract has an inhibitory effect on \( \alpha \)-glucosidase [65]. The presence of phenolic compounds in honeysuckle scented tea extract was shown to reduce blood sugar levels in sucrose hyperglycaemic mice and an alloxan diabetes mouse model [66].

4.4 Lipid-lowering effects

Caffeine in tea can reduce the concentration of triglycerides in blood and catechin can inhibit lipid synthesis. The comprehensive effects of caffeine, catechin, tea polysaccharide, cholestenone, inositol, folic acid and pantothenic acid in tea can prevent and inhibit obesity. Studies have shown that the effect of jasmine scented tea on weight control may be related to its ability to increase lipoxin levels [64]. Consumption of jasmine scented tea can prevent elevated blood lipid levels and atherosclerosis, reduce the content of molecular substances in plasma and protect organs, such as the liver and kidneys. A study on rose scented tea found that its lipid-lowering effect mainly comes from its high content of dietary fibre, rose flavonoids and various amino acids [67]. Rose scented tea is rich in dietary fibre, which cannot be converted to glucose in the human body, and has a low glycaemic index. It may be used as a common food for patients with diabetes. Dietary fibre can also combine with bile salts (metabolites of cholesterol), which are then excreted, effectively reducing the concentration of cholesterol in serum and further preventing and treating cardiovascular and cerebrovascular diseases. In addition, dietary fibre also promotes gastrointestinal motility, which can effectively prevent constipation and reduce the incidence of intestinal cancer. Lan et al. [68] examined the effects of rose extract on blood sugar and glucose tolerance in diabetic mice and found that both rose liquid extract and alcohol extract could effectively reduce blood sugar and improve glucose tolerance. A dose effect was seen and rose alcohol extract exerted a greater lipid-lowering effect than rose water extract. A previous study evaluated the lipid-lowering effects of water-extracted flavonoids from honeysuckle and found that they significantly reduced plasma triglyceride and plasma cholesterol levels in hyperglycaemic mice [69]. The mechanisms involved changes in the transcription and expression levels of insulin receptor substrate 1, low density lipoprotein receptor, apolipoprotein 1, fatty acid synthase and cholesterol regulatory element binding protein 2 in the liver of the mouse model. These studies indicate that the polysaccharides, amino acids and flavonoids contained in jasmine, rose and honeysuckle have lipid-lowering effects and that these active substances are likely to have synergistic effects with the polyphenols in green tea in reducing blood lipids.

4.5 Immunoregulation effects

The immune system provides resistance to disease. Researchers at the Fujian Institute of Traditional Chinese Medicine studied the immune function of scented tea on animals. Jasmine scented tea was shown to increase the number of white blood cells, lymphocytes and T lymphocytes in the blood [16]. Lin et al. [70] compared the effects of jasmine scented tea, traditional Chinese medicine (the main components
are angelica, yam and liquorice) and compound tea (88.5% scented tea and 11.5% of traditional Chinese medicine) on the immune function of mice with acute renal failure. The results showed that 2.5% scented tea, 2.5% compound tea and 0.3% traditional Chinese medicine could significantly reduce the content of molecular substances in serum and significantly promote the proliferation of mouse spleen T and B lymphocytes and enhance the activity of mouse spleen lymphocytes. The study further showed that jasmine scented tea, traditional Chinese medicine and compound tea could enhance the immune function of the spleen in mice and jasmine scented tea and compound tea had more significant immune effects on mice. In addition, Li et al. [71] used ovalbumin sensitised mice as an immune response model to study the immunoregulation effect of aqueous extract of honeysuckle. Water extract of honeysuckle could alleviate the inflammation of intestinal villi in allergic mice, reduce the aggregation and degranulation of mast cells, increase the ratio of intact mast cells in the lamina propria, reduce the release of histamine in the intestinal tract of allergic mice, reduce levels of interleukin-4 and ovalbumin, reduce the ratio of interleukin-4/interferon-γ in allergic mice and inhibit transcription levels of interleukin-12 in peripheral lymphoid tissue mononuclear cells.

4.6 Neuromodulation effects

The aroma of scented tea can relieve depression and reduce anxiety and also improve concentration, relieve physical stress and improve work efficiency. Studies have shown that inhaling the aroma of jasmine scented tea can improve the rate of simple mental arithmetic by 10% and alleviate tachycardia [72]. Kyoko et al. [73] showed that inhaling the aroma of jasmine scented tea for 5 min can significantly reduce heart rate, making people feel calm and energetic. Another study reported that the aroma of jasmine scented tea contained (R)-(-)-linalool, which plays a sedative role in human autonomic nervous activity and emotional state. Li et al. [29] conducted a study on the intervention effect of rose scented tea on postpartum depression and found that rose scented tea could reduce the Edinburgh Postpartum Depression Scale score in patients with postpartum depression and alleviate related symptoms to varying degrees. Subsequently, Zhai et al. [74] conducted a comparative study on rose scented tea and sweet orange essential oil, which has sedative effects. Inhalation of rose scented tea and sweet orange essential oil using aromatherapy lamps significantly reduced blood pressure and heart rate and rose scented tea was better at relieving the systolic blood pressure. Scented tea contains high amounts of volatile substances, which together form the unique aroma of scented tea. Among these, hydrocarbons, alcohols, esters and phenolic compounds are volatilised after brewing and heating the scented tea. These substances are absorbed by the capillaries of the lungs and then transported to the whole body via the blood, relieving the muscles and brain cells of the body.

5. Conclusions

China has established a refined tea production system and is a leader in research into scented tea ingredients. Scented tea is used medicinally and as a foodstuff and drink. The health benefits of scented tea on the human body are well established. Advances in human nutrition and increased interest in physical health have led to increased attention about the nutrition and health benefits of food. Studies have
shown that the polyphenols and flavonoids present in scented tea promote human physical health, which keeps the market share of scented tea in China high. However, the health benefits of scented tea should not be overstated. Scented tea is a health drink, not a drug, and it regulates but does not cure the human body. In addition, attention should be paid to the application of chemical fertilisers and pesticides in the cultivation of flowers and tea as pesticide residues in scented tea may seriously affect its quality and safety. Attention should be paid to the selection of raw materials used in the preparation of scented tea. Fresh, plump flowers and tea are used as raw materials and the flowers and tea are processed in strict accordance with the scenting process. Finally, the health benefits of scented tea are not achieved by a single substance, but the synergistic effects of multiple chemical components, which should be considered comprehensively when using scented tea.

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References


[27] Zong NY, Zhang ZG. Research progress in the processing and exploitation edible roses. Aem Roducts Rocessing. 2017;9(44-46):52


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from Lonicera japonica Thunb. flower buds exert pronounced anti-HBV activities. RSC Advances. 2018;8(62):35374-35385


[37] Chen TT, Yang CS. Biological fates of tea polyphenols and their interactions with microbiota in the gastrointestinal tract: implications on health effects. Critical reviews in food science and nutrition. 2020;60(16):2691-2709

[38] Zhang ZL, Hao XL, Dai SJ, et al. Study on extraction of flavonoids from jasmine tea and their antimicrobial activities. Guangzhou Chemical Industry. 2020;48(6):93-95


[41] Zhou QX, Yue SM. Analysis of the research status of Osmanthus fragrans Lour in chemical constituents and pharmacological actions based on literature. Journal Of Henan University(Medical Science). 2013;32(2):139-142


[50] Zhou HJ, Li TZ, Li B. Identification of antioxidant components and
tyrosinase specific inhibitors from osmanthus fragrans flower by using online UPLC-ABTS••-assay and UF-LC-MS technology. Science and Technology of Food Industry. 2022;43(7):67-79


[65] Cao NF, Li YY, Cui WH, et al. α-glucosidase inhibitory activity of Osmanthus fragrans Lour. (Wanyingui,Yaotiaoshunv and...


