International Journal of Psychosocial Rehabilitation, Vol. 24, Issue 03, 2020
ISSN: 1475-7192

Prunus Persica

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Abstract

Widely popular for their sweet, juicy fruits and beautiful blossoms, Peach trees are actually plagued by so many different pests and diseases that they should probably only be planted by the horticulturally dedicated homeowner. A low, broad tree, 15 to 25 feet tall with an equal or greater spread, Peach trees form a rounded crown with upwardly reaching branches clothed in three to six-inch-long, dark green, deciduous leaves. The lovely flowers which appear in April before the new leaves unfold are available in single, semi-double, and double forms in colors ranging from pure white to deep red and bicolors. The flowers are susceptible to damage by late spring frosts or especially cold winters. The luscious three-inch-diameter fruits mature in July to August. Bright yellow fall color really stands out in many years.

Prunuspersica grows to 4–10 m (13–33 ft) tall and 6 in. in diameter. The leaves are lanceolate, 7–16 cm (2.8–6.3 in) long, 2–3 cm (0.79–1.18 in) broad, pinnately veined. The flowers are produced in early spring before the leaves; they are solitary or paired, 2.5–3 cm diameter, pink, with five petals. The fruit has yellow or whitish flesh, a delicate aroma, and a skin that is either velvety (peaches) or smooth (nectarines) in different cultivars. The flesh is very delicate and easily bruised in some cultivars, but is fairly firm in some commercial varieties, especially when green. The single, large seed is red-brown, oval shaped, approximately 1.3–2 cm long, and is surrounded by a wood-like husk. Peaches, along with cherries, plums and apricots, are stone fruits (drupes). There are various heirloom varieties, including the Indian peach, which arrives in the latter part of the summer.This review article promotes the awareness about the medicinal use of prunuspersica.

Keywords: *speach,rosaceae,prunuspersica,medicinal,fruit*

I. Introduction

Peach originates from China. Now, it is widely cultivated all around the world, in temperate climates. It grows on well-drained, sandy, loamy and clay soils, with a lot of sun. The peach (Prunuspersica) is a deciduous tree, native to Northwest China, in the region between the Tarim Basin and the north slopes of the Kunlun Shan mountains, where it was first domesticated and cultivated.It bears an edible juicy fruit also called a peach. The species name persica refers to its widespread cultivation in Persia, whence it was transplanted to Europe. It belongs to the genus Prunus which includes the cherry and plum, in the family Rosaceae. The peach

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is classified with the almond in the subgenus Amygdalus, distinguished from the other subgenera by the corrugated seed shell.

Peaches and nectarines are the same species, even though they are regarded commercially as different fruits. In contrast to peaches, whose fruits present the characteristic fuzz on the skin, nectarines are characterized by the absence of fruit-skin trichomes (fuzz-less fruit); genetic studies suggest nectarines are produced due to a recessive allele, whereas peaches are produced from a dominant allele for fuzzy skin.

Common name Peach

Latin name Prunuspersica

Family Rosaceae

Habitat Peach originates from China. Now, it is widely cultivated all around the world, in temperate climates. It grows on well-drained, sandy, loamy and clay soils, with a lot of sun. Parts used Flowers, ripe fruits, seeds.

Useful component: Proteins, calcium, phosphorous, sodium, potassium, zinc, Vitamine A and C.

Primary Organ System Affinities Upper GI, uterus, nervous system

Specific Indications: Dryness, heat, irritability and tension in sensitive, emotionally brittle individuals with a tendency towards inflammatory conditions and hyperimmune conditions such as allergies.

Medicinal Use

Traditionally, bark and leaves have been used in cases of whooping coughs and bronchitis. Nowadays, peach leaves are usually recommended in treatment of irritated digestive tract. Peach kernel oil is said to stimulate hair growth, and is commonly used as a mosturiser and for massage. Tea made from the leaves acts as an excellent kidney cleanser. Fruit contains high percentage of water, and is an excellent laxative. It is helpful in eliminating toxins, an usually included in the weight-loss programs. Cooked and purred Peach fruit is extremely helpful in cases of stomach ulcers, bowel inflammations and colitis. Fresh Peach stimulates digetion, regulates bowel and alkalinizes blood

Antihalitos

The leaves are astringent, demulcent, diuretic, expectorant, febrifuge, laxative, parasiticide and mildly sedative. They are used internally in the treatment of gastritis, whooping cough, coughs and bronchitis. They also help to relieve vomiting and morning sickness during pregnancy, though the dose must be carefully monitored because of their diuretic action. The dried and powdered leaves have sometimes been used to help heal sores and wounds. The leaves are harvested in June and July then dried for later use. The flowers are diuretic, sedative and vermifuge. They are used internally in the treatment of constipation and oedema. A gum from the stems is alterative, astringent, demulcent and sedative. The seed is antiasthmatic, antitussive, emollient,

haemolytic, laxative and sedative. It is used internally in the treatment of constipation in the elderly, coughs, asthma and menstrual disorders. The bark is demulcent, diuretic, expectorant and sedative. It is used internally in the treatment of gastritis, whooping cough, coughs and bronchitis. The root bark is used in the treatment of dropsy and jaundice. The bark is harvested from young trees in the spring and is dried for later use. The seed contains 'laetrile', a substance that has also been called vitamin B17. This has been claimed to have a positive effect in the treatment of cancer, but there does not at present seem to be much evidence to support this. The pure substance is almost harmless, but on hydrolysis it yields hydrocyanic acid, a very rapidly acting poison - it should thus be treated with caution. In small amounts this exceedingly poisonous compound stimulates respiration, improves digestion and gives a sense of well-being.

Peaches (Prunuspersica (L.) Batsch), including various species, are consumed and used as a dietary supplement worldwide. P. persica seeds (Persicae Semen; Tounin) are well-known in many Asian countries as a traditional medicine. The chemical constituents of peach seeds, including structurally simple glycosides, have significant anti-tumor activity.The ethanol extract of P. persica also inhibits mast cell-mediated allergic inflammatory reactions in in vivo models. Previous studies reported that the extract of P. persica flesh protects against hepatotoxicity and nephrotoxicity induced by cisplatin, which is prescribed to treat solid tumors in mice. Low-acid white-fleshed peaches are most popular in Asian countries, such as Korea, China, and Japan, while Europeans and North Americans consume mainly yellow-fleshed peaches with high acidity and low sweetness. Therefore, investigations were conducted on whether intake of white-fleshed peaches affects the excretion of nicotine metabolites and 1-hydroxypyrene in the urine of smokers. Furthermore, the protective effect of white-fleshed peach extracts were evaluated(WFPE) on chronic nicotine-induced tissue toxicity by determining the biochemical parameters and histological examination in an animal model.

Safety

Peach seeds contain toxin, hydrogen cianide, which in smaller amounts stimulates respiration and improves digestion, but in excessive amounts could cause respiratory failure and death. Some herbs could react with certain medication. Therefore, it is advisable to consult your doctor before consumption of any herb.

The Extract of the Flowers-of PrunusPersica,a New Cosmetic Ingredient

The flowers of Prunuspersica have been used for skin disorders in East Asia from ancient times. In this investigation, the ethanol extract from this plant material was prepared and several major constituents were isolated. In addition, the protective effects of the extract were evaluated against solar ultraviolet (UV)-induced skin damage using in vivo animal models of UVB-induced erythema in guinea pigs and ear edema in ICR mice. From the extract, four kaempferol glycoside derivatives were successfully isolated and their contents were measured with HPLC. Among the derivatives isolated, the content of multiflorin B was highest (3.3%, w/w). The P. persica extract clearly inhibited UVB-induced erythema formation dose dependently when topically applied (IC(50) = 0.5 mg/cm). It also inhibited UVB-induced ear edema (49% inhibition at 3.0 mg/ear). Moreover, multiflorin B inhibited UVB-induced erythema formation (80% inhibition at 0.3 mg/cm indicating

that this compound is one of the active principles of the extract. All these results suggest that P. persica extract may be useful for protection against UVB-induced skin damage when topically applied.

PrunusPersica -as a Food

Nutritionists use fresh fruit peaches but not its seed. Eating peach compotes and drinking peach juice is very useful. In sales, one can find peach juice or combined with other fruits. Healthiest juice is the one with no preservatives and no added sugar.Jam, marmalade or sweet peaches are great because they can be used in any part of the year. The cured peaches are also a source of beneficial ingredients and can be used throughout the year, not just during the summer. Tea made from peaches leaves and flowers is very useful and can act as a diuretic. Fruit - raw, cooked or dried for later use. The fruit is often used in ice creams, pies, jams etc. When fully ripe, the fruit of the best forms are very juicy with a rich delicious flavour. Wild trees in the Himalayas yield about 36.5kg of fruit a year. The fruit of the wild form contains about 5.2% sugars, 2% protein, 1.6% ash. Vitamin C content is 2.3mg per 100g. The fruit is a good source of vitamin A. Fruits of the wild peach are richer in nutrients than the cultivated forms. The size of fruit varies widely between cultivars and the wild form, it can be up to 7cm in diameter and contains one seed. Flowers - raw or cooked. Added to salads or used as a garnish. They can also be brewed into a tea. The distilled flowers yield a white liquid which can be used to impart a flavour resembling the seed. Seed - raw or cooked. Do not eat if it is too bitter, seed can contain high concentrations of hydrocyanic acid. See the notes above on toxicity. A semi-drying oil is obtained from the seed. Although the report does not mention edibility it can be assumed that it is edible. The seed contains up to 45% oil. A gum is obtained from the stem. It can be used for chewing.

Nectarines

White nectarines, whole and cut open

The variety P. persica var. nucipersica (or var. nectarina), commonly called nectarine, has a smooth skin. It is on occasion referred to as a "shaved peach" or "fuzzless peach", due to its lack of fuzz or short hairs. Though fuzzy peaches and nectarines are regarded commercially as different fruits, with nectarines often erroneously believed to be a crossbreed between peaches and plums, or a "peach with a plum skin", nectarines belong to the same species as peaches. Several genetic studies have concluded nectarines are produced due to a recessive allele, whereas a fuzzy peach skin is dominant. Nectarines have arisen many times from peach trees, often as bud sports.

As with peaches, nectarines can be white or yellow, and clingstone or freestone. On average, nectarines are slightly smaller and sweeter than peaches, but with much overlap. The lack of skin fuzz can make nectarine skins appear more reddish than those of peaches, contributing to the fruit's plum-like appearance. The lack of down on nectarines' skin also means their skin is more easily bruised than peaches.

The history of the nectarine is unclear; the first recorded mention in English is from 1616, but they had probably been grown much earlier within the native range of the peach in central and eastern Asia. Although one source states that nectarines were introduced into the United States by David Fairchild of the Department of

Agriculture in 1906, a number of colonial era newspaper articles make reference to nectarines being grown in the United States prior to the Revolutionary War. 28 March 1768 edition of the "New York Gazette" (p. 3), for example, mentions a farm in Jamaica, Long Island, New York, where nectarines were grown.

Cultivation Details

Requires a well-drained moisture retentive soil. Thrives in a loamy soil, doing well on limestone. Best not grown in acid soils. Prefers some chalk in the soil but it is apt to become chlorotic if too much is present. Prefers a pH in the range 6 to 7. Succeeds in light shade but fruits better in a sunny position. Requires shelter from north and north-east winds and also from spring frosts. Widely cultivated for its edible fruit in warm temperate areas and continental climates, there are many named varieties. There are numerous divisions of the varieties according to skin colour etc. Perhaps the most useful from the eaters point of view is whether it is free-stone (the flesh parts easily from the seed) or cling-stone (the flesh adheres to the seed) Trees are normally hardy in southern Britain, tolerating temperatures down to about -20°c when they are dormant , but they require some protection if cropping is to be at all reliable. This is not due so much to lack of cold hardiness, more to the cooler summers in Britain which do not fully ripen the wood and the fruit, plus the unpredictable winters and springs which, in a mild spell, can excite the tree into premature flowering and growth which is then very liable to damage in any following cold spell. Hand pollination at this time can improve fruit-set. The cultivar 'Rochester' is more likely than most cultivars to succeed outdoors in Britain. In general it is best to site peaches in a very warm sheltered sunny position, preferably against a south or west facing wall. Most cultivars are self-fertile. Trees are often grafted onto plum or other rootstocks but are said to be better when grown on their own roots in southern Britain. Trees are not generally long-lived, this is partly because of the need for the tree to produce a constant supply of new wood since most fruit is formed on one-year old wood (though some fruit spurs are formed). Garlic is a good companion for this plant, helping to prevent disease, especially peach leaf curl Tansy grown below peach trees helps to keep them healthier. Peach leaf curl can also be prevented by protecting the plants from winter and early spring rains, perhaps by covering them in plastic. Plants grown or overwintered indoors do not suffer from leaf curl. Most members of this genus are shallow-rooted and will produce suckers if the roots are damaged. Plants in this genus are notably susceptible to honey fungus.

Special Feature

Edible, Not North American native, Attractive flowers or blooms.

Disadvantage

Peach Allergy

Peach allergy is the most common form of IgE-mediated hypersensitivity to fresh fruits in the Mediterranean area. Its prevalence can be estimated to 10-40% (Spain and Italy) in pollen allergic patients or even up to 75% (in Israel) in fruit and/or vegetable allergic individuals. Peach allergy is rarely observed as an isolated allergy, and most patients present with some other food or inhalant (mainly pollen) allergies. The foods

most frequently associated are other members of the Rosaceae family, such as apple and pear (Pomoideae subfamily), and apricot, cherry and plum (Prunoideae subfamily). According to clinical observations, apple allergy is the most frequent food allergy associated to peach allergy.

As regards sensitization to fruits of the Rosaceae family, some differences are evident in populations from northern Europe and southern Europe. Rosaceae fruit allergy (typically apple) linked to birch pollinosis in nothern Europe is mainly due to cross- reactive IgE induced by Bet v 1 (the major birch pollen allergen). In contrast, Rosaceae fruit allergy (typically peach) in southern Europe not linked to birch pollen is a "true food allergy" in which sensitization and reactions are induced by stable fruit allergens such as lipid-transfer proteins (LTPs).

The spectrum of symptoms ranges from local symptoms (e.g. oral allergy syndrome, contact urticaria) to systemic symptoms including anaphylaxis (e.g. urticaria, angioedema, gastrointestinal and respiratory symptoms). Systemic symptoms are more frequently observed in patients who react to the ingestion of peach pulp or canned peach, and in those allergic to peach without pollinosis. Usually the allergenic potency of peach peel (skin) is higher than that of peach pulp (flesh) in peach allergic subjects. Two patient subgroups (80% with and 20% without pollinosis) have been reported in peach allergy. Peach allergic patients with associated pollinosis are more predisposed to experiencing asthma than pollinosic patients non-allergic to peach. Although adverse reactions to canned peach or in vitro IgE-binding to commercial peach juices and nectars have been reported, the diagnostic accuracy is highly dependent on the quality of extracts used in testing procedures. Skin tests (prick- to -prick tests) with fresh fruits are highly sensitive diagnostic tools as confirmed by oral challenges.

Pru p 3, the major allergen from peach, is a 9-kDa allergen belonging to the family of lipid-transfer proteins (LTP) which has been proven to be cross-reactive to homologous proteins both in Rosaceae fruits and in other plant derived foods. Other IgE-binding proteins have been reported: Profilin (Bet v 2 homologous), Bet v 1 homologous protein, and Cross-reactive Carbohydrate Determinants (CCD) of proteins >30 kDa. The allergenicity of peach juices and nectars could only be reduced by lye peeling of fruits and ultrafiltration of juices, respectively. These findings suggest a marked resistance of the major peach allergen Pru p 3 to both phenoloxidase activity and heat treatment. Furthermore, Pru p 3 has recently been proven to be resistant against pepsin digestion.

Pharmacological Activities

Anti-inflammatory activity

Prunuspersica Linn. possessed anti-inflammatory activitiy against rat osteoblast sarcoma cells whereas in carregenan induced paw edema it showed anti-inflammatory activity at a dose of 250 mg/kg.

Antiallergic activity

The ethanolic extract of the plant inhibits mast cell-mediated allergic inflammatory reaction by controlling calcium influx and NF-jB signaling

Antiphotoaging effect

The plant possesses the anti-photoaging effect which was assessed by DPPH, Western blot and reverse transcription–polymerase chain reaction analysis. A compound named 2-methoxy-5-(2-methyl propyl) pryazine isolated from the peach was responsible for this activity

Antitumor activity

The cyanogenic glycosides, amygdalin and prunasin, isolated from Prunuspersica seeds, significantly inhibited the Epstein-Barr virus early antigen activation induced by tumor promoter and showed anti-tumor activity.

Protection against skin carcinogenesis

The Ku-35 extract of the plant showed protection against UV-induced DNA damage and carcinogenesis when applied topically.

II. Conclusion

This review article throws light on the different useful activity of peaches. These are members of the genus prunus that includes apricots, plums, cherries, almonds, and nectarines. Peach has prime importance in the wellness of mankind having medicinal properties in its phytochemicals, biological activity, and high nutritive value makes it significant for Human being.

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