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A review of the botanical, convectional applications, phytochemical constituents, and pharmacology of *Persea americana*

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***Abstract*—** *Over the decades, herbal drug has come a thing of global significance with medicinal and profitable counteraccusations. Widespread use of sauces throughout the globe has raised serious enterprises over its quality, safety, and efficacity. therefore, exact scientific assessment has come a precondition for acceptance of herbal health claims. Persea americana Mill. (avocado) is a tree, native to central America, cultivated in tropical and tropical climates around the world, belonging to the family Lauraceae, is extensively used in Ayurveda and substantiation- grounded phototherapy. The plant is used in traditional medicine for the treatment of various ailments, such as monorrhagia, hypertension, stomachache, bronchitis, diarrhea, and diabetes. In this review, an effort has been made to study the different aspects of P. americana Mill.*

Keywords*— *Persea americana, phytochemical constituents, pharmacology, Lauraceae

I. INTRODUCTION

During the decade, the traditional systems have gained significance in the field of drug. The World Health Organization estimates that 4 billion people, 80 of the world population, presently use herbal drug for some aspect of primary health care. Herbal drug is a major element in all indigenous people's traditional drug and a common element in Ayurvedic, homeopathic, naturopathic, traditional, oriental, and Native American, and Indian drug. numerous medicines generally used moment are of herbal origin because of their safety, quality, and efficacity. Indeed, about 25 of the tradition medicines allocated in the USA contain at least one active component deduced from factory material. The present attempt is to review and collect streamlined information on colorful aspects of *P. americana*, a factory used in the Indian system of drug for a variety of purposes.P. americana Mill. is generally known as avocado. The avocado tree has candescent evergreen, elliptic leaves 4- 8 in number and 10- 20 cm long. It's a much more fanned , medium- sized tree and is cultivated for its succulent and largely nutritional fruit.

Botanical description

Synonym(s): *Laurus persea* L, *Persea drymifolia* Schlecht. and cham, *Persea gratissima* Gaertn. f. and *Persea nubigena*

Common names: avocado

Kingdom: Plantae

Clade: Tracheophytes

Clade: Angiosperms

Clade: Magnoliids

Genus: Persea

Species : *Persea Americana*

Family: Lauraceae. [1]

Description

Persea americana is a tree that grows to 9–20 m (30–66 ft) with a trunk diameter between 0.3–0.6 m (0.98–1.97 ft). The leaves are 7.62–25 cm (3–10 in) long and alternately arranged.

Panicles of flowers with deciduous bracts arise from new growth or the axils of leaves. The tree flowers thousands of blossoms every year. Avocado blossoms sprout from racemes near the leaf axils; they are small and inconspicuous 5–10 mm (3⁄16–3⁄8 in) wide. They have no petals but instead 2 whorls of 3 pale-green or greenish-yellow downy perianth lobes, each blossom has 9 stamens with 2 basal orange nectar glands.

The avocado fruit is a climacteric, single-seeded berry, due to the imperceptible endocarp covering the seed, rather than a drupe. The pear-shaped fruit is usually 7–20 cm (3–8 in) long, weighs between 100 and 1,000 g (3+1⁄2 and 35+1⁄2 oz), and has a large central seed, 5–6.4 cm (2–2+1⁄2 in) long.

The species produces various cultivars with larger, fleshier fruits with a thinner exocarp because of selective breeding by humans. [2-5]

Ethnobotanical uses

P. americana has been traditionally cultivated for food and medicinal purposes due to its high nutrition content as well as for its remedial merits. This plant has a different operation in ethnomedicine, ranging from treatment of hypertension, diarrhoea, dysentery, toothache, intestinal spongers to the area of skin treatment and beautification. It was also used by women in the form of an ointment and also for treating skin eruptions. Leaf and seed excerpts have been shown a variety of medicinal operations and are particularly used as antibiotic. [6,7]

Chemical constituents

The isolation of the bioactive phytoconstituents of P. americana leaves (Lauraceae), yielded, isorhamnetin, luteolin, rutin, quercetin and apigenin. Isorhamnetin was completely characterized as reported by Owolabi et al.P. americana contains a significant quantum of oil painting compared to other fruits. still, several secondary metabolites have been insulated from different corridor ofP. americana. The predominant carotenoid in Avocado is Lutein while other carotenoids similar as present α- carotene, β- carotene, zeaxanthin, neoxanthin and violaxanthin are in small volume. These lipophilic carotenoids may have implicitanti-carcinogenic goods. The avocado seed also contains colorful classes of natural products similar as phytosterols and triterpenes, adipose acids with olefinic, acetylenic bonds, furanoic acid, dimmers of flavonols and oligomeric proanthocyanidins, β- D-glucoside of 8- hydroxyabscisic acid and epi-dihydrophaseic acid β- d-glucoside.The findings of the phytochemical analysis of the ethanol seed excerpt indicated the presence of alkaloids, saponins, unsaturated steroids and triterpenoids(Leucoanthocyanins), fats and oils. [8-11]

Pharmacology

Hypoglycemic activity

The hypoglycemic effects of P. americana aqueous leaf extract in the normal rats was reported. The maximum antidiabetic activity was reached at 6 h after a single dose of the extract was administered, producing 60.02 ± 6.83% reduction in the blood glucose level. [12]

Hepatoprotective and dermatological activities

The oil has also been used for the treatment of skin wounds, stretch marks and psoriasis. It also possesses hepatoprotective activity. [13-14]

Antiviral activity

The infusion and ethanol extract of dried leaves of P. americana were compared with respect to their inhibitory activities of viral replication in vitro. The chosen viruses for the initial screening were adenovirus type 3 (AD3), HSV-1, and ADV. The ethanol extract was only tested against HSV-1 and ADV. The infusate was active against the 3 viruses,

whereas the ethanol extract did not show any activity under the experimental conditions employed. [15]

Antiulcer effect

The study was carried out to investigate the antiulcer activity of aqueous leaf extract of P. americana. Groups of albino rats were pretreated orally with aqueous leaf extract of the plant before the administration of the ulcerogenic drugs-indomethacin and ethanol. The extract produced significant and dose-dependent antiulcer activity against indomethacin- and ethanol-induced ulcers in rat. [16]

Anticonvulsant effect

Aqueous leaf extract of P. americana demonstrated an anticonvulsant act ivity in mice. The effectiveness of the plant extract in the experimental convulsion paradigm probably used suggests that the plant could be used in both petit and grand mal types of epilepsy. The plant's leaf extract was relatively more effective in Pentylene tetrazole (PTZ)- and picrotoxin (PCT)-induced convulsions than in bicuculline (BCL)-induced seizures. In general, the average onset and duration of convulsion was markedly delayed and reduced, respectively. These findings tend to show that P. americana leaf aqueous extract might have inhibited and/or attenuated PTZ-, PCT- and BCL-induced seizures of the mice used by enhancing, or in some ways interfering with, GABAergic action and/or neurotransmission. [17]

II. CONCLUSION

Medicinal plant species are rich in secondary metabolites of pharmaceutical and medicinal relevance. The advantages of their therapeutic uses in various ailments are their safety besides being economical, effective and their availability. The current mini review was carried out with the aim of updating knowledge on the phytochemistry and various pharmacological properties of P. americana as common and traditionally edible fruit. The literature survey revealed that P. americana is a pharmacologically and chemically much studied plant species, although the diversity of secondary metabolites present in this plant species is enormously various.

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