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ETHNOBOTANICAL PROFILE OF PHOENIX SYLVESTRIS (L.) ROXB WITH SPECIAL REFERENCE TO GONDIA DISTRICT, MAHARASHTRA

Kaisreen Matin Saiyed

Research Scholar, Department of Botany, Sri Satya Sai University of Technology & Medical Sciences, Sehore, M.P.

ABSTRACT

Phoenix sylvestris (L.) Roxb is frequently utilized in rural regions as a part of ethnomedicine for the treatment of many diseases such as antimicrobial activity, anti-diarrhoeal activity, anti-diabetic activity, anti-inflammatory activity, anti-ulcer and antidiabetic activity, anti-inflammatory and anti-obesity activity etc. In this article, ethnobotanical profile of Phoenix sylvestris (L.) Roxb with special reference to Gondia district, Maharashtra has been discussed.

Keywords: Phoenix Sylvestris, Ethnobotany, Gondia.

Introduction

An elegant palm that grows between 10 and 16 meters tall with a broad crown and a rough trunk covered in tenacious leaf bases. Pinnules are many and linear, 15–45 cm long and 2–2.5 cm wide, and they culminate in small points. The leaves are 3-4.5 m long, greyish-green, and have a few short (to 10 cm) spines at the base. Male and female flowers are white and greenish, respectively, and are both tiny and fragrant. [1] About 90 cm long fruiting spadix with 2.5–3.2 cm long, orange–yellow when ripe, oblong–ellipsoid berries. long seed, 1.7 cm long, with deep grooves and rounded ends. rough trunk marked with leaves that have fallen, lower pairs of the compound leaf's numerous pointed leaflets have been reduced to thorns, Compound leaves have inflorescence that can be seen in their axils. Strong, long-lasting leaves with sharp points are used in fencing; a high-quality basket's axis is made of leaves; and leaves are also used to produce floor mats. In recent years, it has become more well-liked as an attractive tree in cityscapes. The tree is 12 metres tall, and the seed is 1.5 cm in size. [2] In this article;

ethnobotanical profile of *Phoenix sylvestris* has been discussed with special focus to Gondia district, Maharashtra. This plant is found to the studied district and have potent ethnobotanical potentials based on rural and tribals peoples.

Ethnobotanical Profile [3-5]

Antimicrobial Activity

A thorough investigation revealed the antibacterial action against the microorganisms (Staphylococcus aureus, Streptococcus pyrogen, Escherichia coli, and pseudomonas aeruginosa). Water, methanol, and acetone were used to extract Phoenix sylvestris. The disc diffusion method was used to estimate the antibacterial activity. The extract also analysed the zone of inhibition and showed that it had the highest antibacterial activity against the tested microorganisms.

Antidiarrheal Activity

The extracts are frequently used in conventional medicine to treat a wide range of illnesses. In this study, the aqueous solution's antidiarrheal properties were examined. The effects of the fruit extract, enter pooling, and castor oil-induced diarrhoea were studied. The antidiarrheal effect of the aqueous fruit extract on castor oil-induced diarrhoea in male Wistar rats was examined using loperamide. The findings of this study demonstrated that the fruit is a useful nutraceutical for the prevention and treatment of diarrhoea.

Antidiabetic Activity

The study's objective was to determine whether diabetic rats administered alloxan could benefit from a date palm seed ethanolic extract. To evaluate the hypolipidemic and antioxidative effects, serum levels of cholesterol, triglycerides, malondialdehyde, superoxide dismutase, and 8-hydroxy-2'-deoxyguanosine were examined. The investigated clinical chemistry and oxidative stress parameters with both seed extracts of Ajwa and Sukkari dates showed significant differences between diabetic and control rats.

Anti-Inflammatory Activity

Phoenix sylvestris L is an edible ethnomedicine that has anti-geriatric and antioxidant properties. The potential to scavenge reactive oxygen species (ROS), such as hydroxyl radicals and superoxide radicals (acidic ethanolic > basic nitric oxide (NO)), in vitro was examined in this study using three different types of date palm extracts: methanolic, acidic ethanolic, and basic ethanolic (ethanolic). Date palm extracts are used therapeutically to reduce intracellular oxidative stress in murine RAW macrophages and a human embryonic kidney cell line (HEK) produced by bacterial lipopolysaccharide (LPS). to look into the mechanism of action in carrageenan-induced emphysema in rats and the anti-inflammatory properties of date seed extract.

Antiulcer Activity

With the aid of ethanol, indomethacin, pyloric ligation, cold restraint, and stress-induced gastric ulcer models, it was determined if the ethanol extract of the root of P. sylvestris Roxb. (EPS) had any anti-ulcer properties in albino rats (2012). An ethanol extract of the root of P. sylvestris Roxb. showed anti-ulcer effects by means of a cytoprotective mechanism. EPS at doses of 200 mg/kg and 400 mg/kg significantly decreased ulcer severity in all four models.

Antioxidant Activity

Methanol extract and extracts following alkaline hydrolysis of the mesocarp tissue of fully-mature edible fruits of P. sylvestris were analysed by GC-MS in the metabolomics approach. The two main diabetes-related enzymes, -amylase and -glucosidase, were used to examine the fractions' antioxidant and inhibitory properties. Following saponification, a total of 71 metabolites, including organic acids, amino acids, sugars, sugar alcohols, fatty acids, and phenols, were found in the methanol extract and fractions.

Antinociceptive And Pharmacological Activity

This study's objective was to determine whether a methanol extract of P. sylvestris fruit pulp exhibits neuropharmacological and antinociceptive characteristics (MEPS). To evaluate MEPS' antinociceptive activity, heat-induced (hot plate, tail immersion test) and chemical-induced pain models were used

(acetic acid-induced writhing, formalin-induced nociception, glutamate-induced nociception, and the paw edoema test).

Anti-Mutagenic Activity

Date fruit extract reduced the mutagenicity of benzopyrene-induced mutations in the metabolically active Salmonella tester strains TA-98 and TA-100 in a dose-dependent manner. It was discovered that extracts from 3.6 mg/plate and 4.3 mg/plate were required for the 50% inhibition of His+ revertant generation in TA-98 and TA-100, indicating significant antimutagenic activity.

Anti-Obesity Activity

This study aims to evaluate the polyphenolic content and biological activity of four kinds of date palm from Tunisia. The highest values for total phenolic content were found in date pit methanol extracts. Additionally, our research demonstrated for the first time that the Kenichi species of date palms, among others, have pits that have a potent inhibitory effect on key enzymes related to diabetes and obesity. As a result, date palm pits could be seen as a potent natural cure source for valuable products that can be employed as safe alternatives to dangerous synthetic chemicals in the agro-food, cosmetics, and pharmaceutical industries.

Anticancer Activity

In order to evaluate the HCC inhibitory effects and other advantageous properties of the aqueous extract of ajwa dates, a rat model of diethylnitrosamine (DEN)-induced liver cancer (ADE) was used. ADE helped the DEN-damaged liver return to normal. After ADE treatment, antioxidant enzyme levels, liver enzyme levels, cytokine balance, and gene expression returned to normal levels, indicating that ADE enhances liver function and inhibits HCC. ADE can therefore be used in conjunction with other HCC therapies.

Diuretic Activity and Analgesic Activity

A methanol extract of P. sylvestris roots' analgesic and diuretic effects on Swiss albino mice (2006) The extract significantly (p 0.001) decreased the percentage inhibition of writhing caused by acetic

acid (0.5 percent v/v) at doses of 150 mg/kg and 300 mg/kg body weight, respectively.

Hematopoietic Activity

This investigation's goal was to determine how crude fruit extract's hemopoietic activity affected peripheral blood parameters. When compared to the controls, there was a significant increase in the absolute values of the red blood cell (RBC), haemoglobin (Hb), packed cell volume (PCV), reticulocytes, and platelet count in both the aqueous and methanolic extracts (p 0.05, p 0.001). Total and differential white blood cell counts, as well as a bone marrow examination, did not significantly differ from controls ($p > 0.05$).

Hepato Protective Activity

Investigators looked into the effects of the Phoenix sylvestris extract. Paracetamol damaged the liver in mice. A therapy was given to the mice. A Phoenix sylvestris extract (100 mg/kg body weight) was found to shield mice against the hepatotoxic effects of paracetamol. Studies on the histology of the liver showed that mice given dosages of Phoenix sylvestris extract had centrizonal necrosis and significantly less fatty degeneration. In the course of the investigation, mice were fed extract; both normal livers and serum enzyme activity showed a noticeable decrease.

Effect Of Hemolytic Activity

Using date fruit extracts, Streptococcus pyogenes was evaluated both in vivo and in vitro. 24 hours of incubation with date fruit extract at dilutions of 5, 10, and 20% successfully reduced the growth of S. pyogenes to 30.8%, 64.7%, and 88.5%, respectively. Date extract (DE) completely stopped the hemolytic effect of the streptococcal exotoxin streptolysin O at relatively low doses. A dilution of 1:262144 DE produced 96 percent inhibition. Since DE's inhibitory effect was not diminished by deproteinization, this suggests that the inhibitory element is steroidal rather than proteinaceous in origin. The results showed that this fact has a balancing effect.

Effect Of Reproductive System

The male reproductive dust of palm flowers known as DPP (date palm pollen) has long been used as a food supplement, primarily as an aphrodisiac and fertility booster in both men and women. Despite the fact that there are few clinical trials examining the beneficial effects of DPP in people, numerous experimental studies on the reproductive advantages of DPP have been conducted. A number of compounds, including amino acids, fatty acids, flavonoids, saponins, and oestrogens, are derived from DPP.

Conclusion

Phoenix sylvestris can grow to a height of 4 to 5 metres and a diameter of 40 cm. The 3-meter-long, 1-meter-petioled leaves have acanthophyllia toward the base and are slightly recurved. The leaf crown, which can have up to 100 leaves, reaches a width of 10 m and a height of 7.5–10 m. The white, unisexual flower develops into a sizable, dangling infructescence, and the infructescence's can reach a height of 1 m. It has been used to treat stomach pain, fevers, unconsciousness, constipation, heart issues, toothaches, neurological debility, and helminthiasis. P. sylvestris is thought to have medicinal properties.

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