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ETHNO-BOTANY OF MEDICINAL PLANT - KHAIR IN SEMI ARID REGION

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Abstract :
Kair (Capparis decidua (Forsk.) Edgew.) is a significant indigenous shrub that grows along farm Throughout India's arid and semi-arid regions, boundaries, orans, gochars (local grasslands), and wastelands exist. It is a densely branched shrub with a stem of 2.5 metres and a height of 4 to 5 metres. It features stiff, corky grey bark and waxy, delicate branches. Kair can grow unchecked and without protection on arid land and can thrive in a range of settings. It can help increase the fertility of sand dunes and reduce alkalinity because of its strong soil binding ability, moderate toleration for salt, and alkaline soils. Due to the shrub's xerophytic characteristics, which include a deep tap system, sparse foliage, mucilaginous sap, and stiff conical spines, it is excellent for extensive cultivation. This is especially true for dry waste areas where soil and erosion by the wind is a problem. Due to its extraordinary resistance to extreme conditions, the plant has made a substantial contribution to the rural economy of the western states of Rajasthan and Gujarat. It is a superb species for forecasting the climate. It provides the populace with food (pickles and veggies), medicine, feed, wood for carving, and fuel. The plant's ripe fruits offer communities in arid and semiarid regions a helpful and necessary supply of nutrition, but the immature fruits are harvested from natural stands and offer the rural poor an extra source of income and food. In medicine, it is used to treat digestive and heart issues. Rural people utilise its termite-resistant material like wood to build handles, cartwheels, and other items, and it is frequently used as a biofence.

Key words : Local grasslands, semi-arid regions, capparis decidua, Gujarat, rural, wood, wastelands, source, soil, significant, shrub, semiarid, peoplem medicine, grows.

Introduction :

Capparis is a genus of shrubs, trees, and woody climbers with over 250 species. In Index Kewensis, there are about 234 species of Capparis listed. In India, there are 26 species of this genus, according to reports Here, Capparis species are found in psammophytic scrub and mixed xeromorphic forest vegetation. Capparis decidua is a multifunctional woody shrub native to the Indian subcontinent, Africa, and Saudi Arabia's deserts and arid regions. In Rajasthan, it is known as Kair, while in Uttar Pradesh, it is known as Karil. Teent in Haryana, Ker in Gujarat. Nepti in western Maharashtra and Della in Delhi and Punjab. Its natural habitat is pediment plains, which can be found throughout the arid regions. It is a major component of desert environment and plays a vital part in the rural economies of people living in the Indian subcontinent's northwest arid parts. This shrub's importance was long acknowledged by Thar Desert residents. It is a very hardy species that provide shade in hot weather.

In the desert's dunes, not much else grows. At an altitude of 300-1,200 metres, Kair has an annual rainfall that ranges from of 100 to 750 millimetres and a mean average yearly temperature of 25 degrees Celsius. Alkaline, sandy, and gravel soils are preferred, and it thrives in shallow, hard soils and rocky outcrops. Kair are found in the arid regions of India. Kair may flourish in areas with significant rainfall (600 mm), despite flourishing in sites with little rainfall (150 mm). Low-sodium soils are ideal for C. decidua. Kair

flourishes in arid, open spaces like waste area and slopes. It flourishes in saline irrigation water-affected soils, stabilised sand dunes, and extremely shallow sands. It co-occurs with Salvadora oleoides, Anogeissus pendula Edgew, Ziziphus nummularia, Maytemus emarginatus, Prosopis cineraria, etc.

Materials and Methods :

The study was conducted in rural areas to look into the use of kair as medicine in Rajasthan's desert region. The Gujarati cities of Kheda, Surender Nagar, and Bhavnagar were used to gather participant observations. The Central Arid Zone Research Institute provided secondary information on environmental characteristics, while a series of open-ended personal interviews provided the primary data. To come to a consensus on the shifting usage and availability patterns of kair, focus group discussions (FGD) were undertaken concurrently with the interviews in each hamlet in both states. In order to supplement the information from the focus groups and interviews and to document the varied biological and cultural components of Khair, secondary materials, like as research and review papers, were also used.

Result :

The 4-5 meter-tall Capparis decidua is a small, thickly trees branches or taller shrub. The plant seems to be leafless for the bulk of the time because their leaves are tiny in size, pointy, sharp, and only have a short lifespan on juvenile stems. Tiny groups of pink flowers with crimson veins are grow in the axils of the spine in numerous-flowered corymbs, on old branches, or on tiny lateral branches. Pedicels have a slim profile and are about 12 mm long in length. During the first five months, a single tap root forms, and by the sixth month, it has produced a few secondary roots. Several secondary branches appear throughout the course of a year., even if the tap roots still predominate. When a plant is mature, its roots can extend up to 4 metres underground.

Discussion :

Besides its financial value, kair is used as therapeutic purposes. It is carminative, alexipharmae, stimulates hunger, and is beneficial for many disease. The immature fruits are used to treat gastrointestinal disorders, particularly constipation when pickled or cooked like vegetables. Fruits have anti-diabetic properties. Anthelmintic action is found in alcoholic extracts pulp from fruits and bark from roots Unripened fruit and shoot extraction from C. decidua was used as a hypocholesterolemic because it decreased plasma fatty acids, overall lipids, and phospholipids.

It seems to function by enhancing the excretion of bile acid and cholesterol in the feces. Heart rate and the flow of coronary arteries are suppressed in a dose-dependent manner and new alkaloid isolated from the C. decidua plant. In older alloxan-induced diabetic rats, C. decidua powder has a hypoglycemic effect, lowers the peroxidation of lipid, and modifies the levels of scavenging free radical enzymes in the liver, kidney, heart, and erythrocytes, including superoxide dismutase also known as SOD and catalase (CAT). Powdered C. decidua is used to treat hyperglycemia and oxidative stress brought on by alloxan. The green immature fruits are reported to have antihelminthic and therapeutic benefits for asthma, coughing, anxiety , worms, and various mental health conditions. Kair fruits and seeds are used as a treatment for cholera, diarrhoea, and urinary purulent discharges. The fruit's flavour is potent and spicy; it is astringent to the bowels and removes foul breath. Biliousness and purulent urine discharges are beneficial for heart issues, according to Ayurveda. Dietary fibre content in C. decidua ranged from 38.5 to 55.7 percent. The most significant hypocholesterolemic impact was produced by hemicellulose from C. decidua, which was fed to rats at 10% of their diet. This effect was mediated by higher faecal discharge of cholesterol levels and acids from the liver. According to reports, C. decidua has diuretic and anti-diabetic properties.

The flower patals and roots are also used as eye compresses, a diuretic and a therapy for artery dieases. Additionally, the petals of the flower can be used as herbs. Alcoholic extracts from flowers, fruit husks, and seeds have antimicrobial qualities. Flowers contain the hydrocarbons nonacosane and triacontane.

Members of the amily contain thioglucosides (glucosinolates), and when the plants are injured, they release isothiocyanates (mustard oils). Plants often make methyl isothiocyanate from methyl glucosinolate (glucocapparin). The husks of fruits and flowers both contain phthalic acid.
Bark has a bitter, spicy taste and acts as an a pain reliever diuretic medication, and akheteric. bowel movements, antibelminthic, and good for coughing as well as asthma. Alcoholic root bark extract has potent antibacterial and antifungal activities. Meanwhile, stem bark is used to cure pyorrhea, toothaches, and rheumatism. From the root bark, spermidine alkaloids have been identified, including isocodor arpine and capparisinine (isomer of capparidisine)i/.... The stem and root bark extracts' isocodonocarpine and other alkaloids are useful for treating asthma, inflammation, diabetes, and cough. Aqueous extracts of C. decidua roots have been found to have purgative effects. The root barks included two sterols and one diterpene substances, two aliphatic molecules, and a single diterpenic acid. The root's bark is employed as a purgative and an anthelmintic. The root systems are utilised to treat a high body temperature the buds are utilised to treat boils, and the bark to treat sneeze allergies and asthma, and inflammatory disorders, according to the orthodox medical system.

In Unani medicine, fruits are used in disorder of the liver, whereas leaves are used as an appetiser. Infertility is treated with Peganum harmala branches; alveolaris are treated with ground stems and leaves; and muscle injuries are treated with woody charcoal. In Sudan, C. decidua is used to treat enlargements,yellowing of the skin, and joint infections. The plant contains a wide variety of alkaloids, glycosides and lipids. An ethanolic extract of aerial parts had an anti-inflammatory and analgesic effect. Researchers have found that the anti-inflammatory in nature and anti-asthmatic effects of isocodonocarpine. The antibacterial properties of the seeds show that isothiocyanate aglycon has antibacterial properties.

Conclusion :
Kair has demonstrated to be a profitable facility. It has a variety of therapeutic purposes. This tree is being overused. The young fruits still have a great economic worth nowadays. As a result, they are frequently picked and expensively sold. Production and proliferation of kair seeds are endangered by this practise. Poor or nonexistent seed production is still the major reason for the population reduction of kair. This particular plant is truly a threatened species in India, a plant with quick regeneration and vigorous growth. As a result, Capparis decidua and other native species are in threat from Prosopis juliflora, which is a weed. C. decidua is an excellent crop for the extremely arid region if careful selection from the available variety is undertaken.

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