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ETHNOBOTANICAL PROFILE OF COLOCASIA ESCULENTA (L.) SCHOTT WITH SPECIAL REFERENCE TO GONDIA DISTRICT, MAHARASHTRA

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ABSTRACT

Colocasia esculenta (l.) schott is frequently utilized in rural regions as a part of ethnomedicine for the treatment of many diseases such as antioxidant activity, antiviral activity, healing activity, anti-inflammatory and anti-pyretic activity etc. In this article, ethnobotanical profile of Colocasia esculenta (l.) schott with special reference to Gondia district, Maharashtra has been discussed.

Keywords: Colocasia esculenta, Ethnobotany, Gondia.

Introduction

Taro is an herbaceous perennial namely Colocasia esculenta (L.) Schott. It can reach a height of 2 meters. The corm, a swelling subterranean stem that weighs up to 1 kg and contains high levels of fine starch, is where its adventitious and shallow root system originates. [1] Corms typically measure 30 cm long by 15 cm in diameter, but their dimensions, shapes, and colours can vary greatly. The erect, thick, succulent, 0.9–2 m-high petioles bear crowns of leaves that are 30–90 cm long and 20–60 cm wide. Large pale green spathes make up the inflorescence. They have a stronger structure and a nutty flavor, and they bear several smaller corms (cormels) around the core corm. Taro contains high levels of protein and calories. The soft white-fleshed taro corms, also known as taro roots, are prized as a staple food and can be cooked in a variety of ways, including boiling, frying, roasting, fermenting, or making flour for bread and biscuits. Alcohol can also be made from inferior corn. Vegetables made from taro petioles and leaves are used. [2] Nearly all genotypes have peltate leaves, and lamina lengths can range from 30 to over 80 cm. In this article; ethnobotanical profile of Colocasia esculenta 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]

Antioxidant Function

Dietary antioxidants are considered to be beneficial nutrients in the prevention of oxidative stress-related disorders, such as inflammation, cardiovascular disease, cancer, and aging-related issues. These nutrients include polyphenolic compounds, vitamins E and C, and carotenoids. Products made have the potential to be therapeutic, nutraceutical, and cosmetic, as evidenced by their strong antioxidant capacity. The red fiber is a new ingredient with additional value that may be utilized in food preparation and/or nutraceutical goods to boost health in addition to having a very strong antioxidant capacity. Studies have compared the total antioxidant capacity (IAC) of plant products with that of oranges and kiwis. The total antioxidant capacity of plant products is equal to the sum of the corresponding water- and lipid-soluble antioxidant capabilities.

Effect of Vitamin C on Healing

Strong antioxidant vitamin C is an essential part of human nutrition. Vitamin C has been shown to be associated with lower blood pressure, better immunity against a variety of tropical diseases, a lower risk of developing cataracts, and a lower risk of cardiovascular disease. Vitamin C needs for adults in good health who don't smoke are 65 mg per day; vitamin C needs for smokers are higher than for non-smokers. Though the lowest daily intake of 65 mg of vitamin C is advised, the body needs about 140 mg to obtain full saturation. Daily intakes exceeding 250 mg have considerable positive effects on nursing mothers or patients with infectious diseases in remission.

Antiviral Function

The root-bark and leaf methanol extracts showed high levels of antiviral activity against Herpes simplex, Sindbis, and polio, as well as viricidal (direct inactivation of virus particles) and intracellular antiviral activity, which may suggest the presence of multiple antiviral compounds or a single compound with multiple antiviral effects. These two preliminary reports could shed some light on the mechanisms underlying some of the plant's health advantages, but it is not yet known whether human trials will yield results that are similar to those seen in animal studies.

Anti-Inflammatory And Anti-Pyretic Activity

The aqueous extract of leaves showed potent anti-inflammation properties. This effect might be sterol, saponin, and triterpene levels. Additionally, the extract has a discernible antipyretic effect. The antipyretic effects of the extract are comparable to those that are generally induced in hyperthermic rats by a standard dose of acetylsalicylic acid (ASA). The sterol, saponin, and triterpene concentration may be the cause of its analgesic and antipyretic actions. Leaves are applied topically for a variety of inflammatory conditions, insect stings, and wounds caused by Guinea worms.

Anti-Microbial Activity

Salmonella sp., Bacillus sp., and Streptococcus sp. are examples of pathogenic bacteria that cannot flourish in an acidic environment, such as that created by adding powder to food fermentation. Additionally, populations of lactic acid bacteria grew as powder concentrations rose. Customers gain from this because the majority of lactic acid bacteria species are safe and have been demonstrated to produce an enzyme that breaks down the principal component of food, soybean oligosaccharides, into its mono and disaccharide components. The inclusion of lactic acid bacteria in locally produced food may boost the food's digestibility as well as the product's shelf life because of the lactic acid bacteria's preservation properties.

All of these microorganisms were the targets of some antibacterial action, including Staphylococcus aureus, Streptococcus faecalis, Bacillus subtilis, Escherichia coli, and Mycobacterium phlei. The crude aqueous and ethanolic extracts of the plants include bioactive components in the root that give them their antibacterial capabilities. The scientific basis for using unprocessed root extracts in conventional medicine, such as the treatment of malaria.

Anti-Trypanosoma Activity

After 60 minutes, extracts of roots totally eradicate the motility of Trypanosoma congolense, but they greatly reduce the motility of T. brucei. Unicellular parasites T. brucei and T. congolense cause sleeping sickness in humans and various diseases resembling it in animals. They are transmitted via the tsetse fly bites.

Conclusion

One of the common root and tuber crops grown for a variety of uses is taro (Colocasasia esculenta). Taro tubers offer a variety of advantageous nutritional and physiological advantages, including phytonutrients, phenolic acid, and anticancer action. There is significant knowledge regarding the nutritional value of taro and some of the health advantages of taro corms and leaves. In many underdeveloped nations, taro is consumed by millions of people as a staple diet or food for survival. Taro corms are consumed as a vegetable and are a valuable source of vitamins, minerals, and proteins. Taro tubers have a starch content of 70 to 80 percent. It has tiny, highly digestible granules in it. Taro can be raised as a root crop, a leafy vegetable, an ornamental plant, a medicine plant, or all of the above. For many people in southeast Asia, it is a staple crop. Aquatic and semiaquatic emergent plants include taro. Taro leaves are used in soups, stews, purees, and sauces. Taros have a lot of beta-carotene in the corm, which gives them antioxidant and vitamin A properties. The structure of beta-carotene just slightly differs. [4] They are relatively prevalent carotenoids that are also antioxidants and may have other health advantages. Both, as previously established, can be transformed by the body into vitamin A, although beta-carotene has roughly double the provitamin A activity of alpha-carotene. [5] Taro tubers are high in starch and contain cyanidin 3-glucoside, an anthocyanin. Similar to flavonoids, related anthocyanins are thought to increase blood flow by reducing capillary fragility, improve eyesight, operate as strong antioxidants, reduce inflammation, and prevent the growth of human cancer cells.

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