



A Review on General Uses of Medicinal Plants

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ABSTRACT:

Medical plants and their various biological compositions offer a promising source of antimicrobial agents with both specialised and general antimicrobial activity. Unlike commercially available synthetic medications, antimicrobials originating from plants are rarely associated with numerous adverse effects and have tremendous medical potential in the treatment of a variety of infectious diseases. These plant-derived compounds that kill microorganisms or impede their growth while having little to no toxic effects on human cells are good candidates for the development of novel anti-microbiological medications.

Keywords: *Medicinal plants, antimicrobial agents, antimicrobial agents, antimicrobial drugs*

1. Introduction

Medical plants are a rich biological source of medications that are typically used in systems like modern medicine, intermediate and chemical entitlement for synthetic drugs, folk medicine, pharmaceuticals, and nutritional supplements [1]. There are many different types of medicinal plants that grow all over the world that are used as antibacterial, antiviral, and antifungal agents [2.–3].

The observation of the ethno-medical use of the plants resulted in the discovery of 74% of pharmaceutically active plant-derived components and an estimate of 14 to 28% of the species of higher plants being used medicinally [4]. Some types of pharmaceutical plants are used as antimicrobial agents, such as infusions, powdered or fluid extracts, oral administration, or decoctions [5]. Medical pharmaceuticals are known to have distinct pharmacological effects on human bodies [6]. If the level of toxicity is found to be low following administration of the drugs, it may be possible to introduce such medications for therapeutic purposes. Drugs made from plant and herbal ingredients are typically thought to be less toxic and free of negative effects than synthetic ones [7]. Plants have the ability to produce a variety of secondary molecules with biologically active potentials, including phenols, saponins, alkaloids, and many others [8].

2. Medicinal Plants

According to Sofowora et al. (2013), a medicinal plant is any plant in which one or more of its parts are composed of substances that can be utilised for therapeutic purposes or as a precursor for the manufacture of valuable pharmaceuticals. Any plant used medicinally in geriatric preparations (such as decoctions, infusions, etc.) or used to extract pure compounds for the hemi-synthesis of medicinal compounds or for direct medical use, or food, spice, and perfumery plants used medicinally are all examples of medicinal plants [9–12]. They represent a consistent aspect of the natural biological variety endowment seen in many Asian countries as well as the entire world [13–18]. They include: *Hoshtigmarectorculatum*, *Nogeissusleiocarpa*, *Enanthoclorantha*, *Senna occidentalis*, and *Zadiracca indica* [19].

2.1 General Uses of Medicinal Plants

Additionally significant to human health and the communities in which they can be found are medicinally valuable plants. They become even more important in areas where modern medical health facilities are either unavailable or difficult to access since they include some biologically active substances that have a specific physiological effect on the human body [20–22]. Auxiliaries in medicine and pharmacy, medicinal plants contain compounds that act as antioxidants and antimicrobial agents and can inhibit microorganisms by a different mechanism from that of currently used drugs. They are also capable of maintaining pharmacokinetic activity and therapeutic efficacy [23]. Native medicinal plants are occasionally utilised to supplement the food ingredients prepared for nursing mothers and expectant mothers for therapeutic purposes [24]. The majority of these medicinal plants also function as food plants and spices [25].

Traditional medicine, also known as folkloric medicine, typically uses medicinal plants. Traditional medicine is defined as "the total summation of practises and knowledge (whether applicable or not) used in preventing or curing a physical, social, or mental disease and which may depend solely on prior experience and observations passed down from generation to generation in written or verbal form." [26]. **Indigenous societies for a long time have carefully maintained the traditions of collecting, processing and** applying plant-based medications[27]. Other populations aside from the

indigenous cultures have also adopted traditional medicine and it is often times referred to as complementary oral ternative medicine (CAM)[28].

The Asian traditional medicine has been described often as the cradle of mankind, it is the oldest medicinal system and perhaps the most diverse of all as the use of herbal medicine precede the existence of modern drugs and antibiotics in Asia [29]. The Asia traditional medicine comes in various forms and is holistic because it involves both the body and the mind. Traditional health practitioners usually diagnose and treat the psychological cause of an illness prior to the prescription of medicinal plants to treat the symptoms [30-31].

Medicinal plants, being the most important constituents of traditional medicines are sold in marketplaces or prescribed by traditional healers in their homes [32]. A considerable number of the people of Asia practice traditional medicine to meet with demands ranging from their psychological to their health needs. They do not regard traditional medicine as an inferior substitute to modern medicine but consider it has a necessity for the treatment of a wide range of health issues that modern medicine treats inadequately [33].

2.1.1 Pharmacological properties of Medicinal Plants

Worldwide, there are many different types of medicinal plants that are used for their antibacterial, antiviral, and antifungal properties [34–36]. Their functions as sources of anti-infective compounds have received substantial research [37–38]. For instance, beraetal.[39] reported that the extracts of eight distinct plant species, including *Hogenia abyssinica* and *Lilium sativum*, had antifungal potential both in-vitro and in-vivo against *Solletotrichum kahawae*. Another study used essential oils of cinnamon, lemongrass, Japanese mint, ginger, geranium, and clove oil at concentrations ranging from 0.01 to 0.15 percent to demonstrate activity against *Candida albicans*. [40]. Though pathogenic fungi have similarities with their hosts being eukaryotes making them difficult to combat[41].However, a large number of medicinal plants have been reported to contain bioactive compounds which have antifungal action [42].

Studies have suggested that majority of these antioxidant compounds exhibit anti-inflammatory, anti- carcinogenic, antibacterial, antitumor, or antimutagenic effects in cells [48-54], as they contain a wide range of free-radical scavenging molecules [55]. These metabolites mostly have prominent effects on the animal systems and microbial cells [56]. They are known to possess therapeutic properties [57], which can be used and have been used to treat human and animal diseases globally [59].

2.1.2 Antioxidant Compounds in Medicinal Plants

To prevent the oxidation of their susceptible substances, plants provide a very noticeable range of antioxidant compounds, including carotenoids, flavonoids, benzoic acids, folic acids, and ascorbic acids [60]. When consumed by humans, these plant-based dietary antioxidants are thought to play a crucial role in maintaining human health since our endogenous antioxidants may not be able to adequately protect against the regular and unavoidable threat of reactive oxygen species (ROS) [61]. Apart from being effective in the inhibition and reduction of free radicals, these natural antioxidants have been established as safe [68], as studies have suggested that their synthetic counterparts cannot be re-used neither can they be recycled once their electron has been donated thereby becoming deleterious metabolic by-products that elevate the entire load of oxidative stress

3. Conclusions

The plant extracts and essential oil (E) are potential sources of natural biological molecules and have been studied globally for novel antimicrobial compounds, food preservatives, and alternative treatments for infectious diseases. The traditionally recognised anti-microbial properties of the E are currently being thoroughly researched and applied in the health sector.

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