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Inventory of Medicinal Plants used in the Treatment of Influenza and other Inflammatory Conditions by Abagusii Traditional Healers of South West Kenya

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ABSTRACT

An ethnobotanical survey of plants used by Abagusii traditional herbalists of South West Kenya in the treatment of influenza and other inflammatory conditions was carried out. Traditional healers were interviewed about the plants that they utilized in the treatment of influenza and other inflammatory conditions, method of preparation and dosage regimens. Their responses were recorded. Each material medica entry followed the following format; Latin binomial; Common name; Vernacular and taxonomic name; parts used; constituents; indications; safety considerations; preparation and dosage. Thirteen medicinal plant species were botanically identified. It was established that this ethnic group greatly depended on herbal remedies for the treatment of influenza and other inflammatory conditions The study revealed that the Abagusii traditional healers have an extensive knowledge of their flora. This study also noted that there was a rapid degeneration of most indigenous herbal medicinal plants, hence the need for their conservation.

Keywords: Abagusii, Herbalists, Influenza, Medicinal plants, Kenya

INTRODUCTION

The use and commercialisation of non-timber forest products, which include medicinal plants, has been found to be an important livelihood strategy in developing countries, where rural people are economically vulnerable [2, 24]. This leads to an improvement in incomes and living standards [13, 26]. According to [30], plants have been the foundation of sophisticated medical systems for thousands of years in countries like China and India. Consequently, these plant-based systems continue to play an essential role in primary health care (PHC).

Plant products also play an important role in the health care systems of the remaining 20% of the population who reside in both developed and developing countries [19]. More than 80% of the population in developing countries lack access to essential medicines [31]. Traditional medicine continues to play an important role in health care. In Kenya, there has been a dramatic increase in the use of herbal medicine and so-called complementary and alternative therapies [18]. There is no single determinant of popularity; cultural acceptance of traditional practices, perceptions of affordability and safety, and scepticism about allopathic medicine's approaches all play a role [20].

In 2010, the Convention on Biological Diversity (CBD) aimed to achieve a significant restoration of biological resources. Unluckily, there is great scarcity of biological information critical for the enactmentment of planned conservation approaches towards realisation of these goals. Biological information on indigenous medicinal plants previously used at the local community level is of

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great importance, but in contemporary society, these plants are being exploited for commercial purposes in urban settlements [30]. Various studies have established that most people in third world countries rely heavily on natural resources in order to meet their various livelihoods requirements [21].

Revenue accrued from such natural plant species contributes to the development of International Development Goals (IDTs), more particularly the decrease in poverty levels [22]. Still, sometimes people only care about short-term gains and don't think about how to protect these natural plant resources [8]. This leads to resource loss, the extinction of some medicinal plant species, unstable economies, and people losing their jobs [12, 23]. So, the main problems that stop businesses from making money off of these natural biological resources are getting enough of them and keeping them around for a long time [27]. Additionally, medicinal plant loss can compromise the quality of healthcare offered to the human population [14].

In an African context, people have always depended on indigenous plants for food and other needs, besides acting as a source of herbal medicine [4]. Because of this, herbalists have come up with ways to improve health services by using native plants, animals, and minerals in a way that is safe, effective, and easy for everyone to access [15]. Though there is great advancement in modern medicine, mankind has attached great significance to herbal medicine since it caters to its socio-cultural origin [17].

There are efforts to gather data on herbal medicine, medicinal plants, and the people who make use of these herbs [9, 17]. Nonetheless, very few herbal plant species have been identified and documented. Furthermore, these documents have not exhaustively covered all the communities in Kenya, Abagusii included.

In Kenya, a large proportion of people, both in the urban and rural areas, rely on traditional medicine for their health care. This is due to the numerous barriers that impede access to modern medicine, as well as the cultural and social factors that have fuelled the continued use of traditional medicine despite the emergence of modern medicine [17]. Traditional medicine is based on medicinal plants. These plants are important because they can be used as medicine themselves, but they can also be used to make new drugs or as models for compounds that are pharmaceutically active [20]. Because of rising disease rates and poverty, allopathic medicine has become too expensive for most people to afford. This has made collecting medicinal plants for personal use a more affordable option [14].

Various studies concentrating on the screening of indigenous medicinal plants have increased significantly [17]. This has helped in the development of higher-quality herbal preparations made from medicinal plants, which seems to encourage the commercialisation of herbal products. Information from the Ministry of Gender, Sports, Culture, and Social Services has established that there is an increase in the number of herbalists registering their commercial enterprises/herbal clinics [7]. Additionally, most human patients, more than 500 patients per month, are being admitted and treated in these herbal clinics [15].

MATERIALS AND METHODS

An ethnobotanical survey was conducted in Nyamira and Kisii Counties in South West Kenya. A number of households were visited for the collection of information on the ethno-medical activities from the herbalists. These data were gathered by use of questionnaires besides field notebooks. The questionnaires contained information on herbal knowledge, methods of diagnosis, preparation of herbal potions, and the treatment of influenza and other inflammations. The plant part(s) extracted and utilised, besides methods of preparation, were also recorded. This study was carried out during the long rains when there was an abundance of plant vegetation.

The traditional plant specimens were collected and pressed in a plant press and then placed in the herbarium to dry under room temperature. While in the field, these traditional plants' vernacular names were recorded. The plants gathered were allotted a collection number, MP001 to MP013. The plants were then identified using the Kisii University Botany Department's herbarium and the East African Herbarium. The botanical name, vernacular name, ethnomedical use(s), method of making the medicine, and any harmful effects were written down for each plant specimen that was collected.

RESULTS

Thirteen plant species commonly used by the Abagusii traditional medical practitioners were botanically identified.

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***Gentian lutea* L (MP001)**
Gentian
Echentiani
Gentianaceae

Parts Used: Dried rhizome and root

Constituents: Iridoids; marogentin, gentiopicroside (gentiopcrin), swertiamarin, xanthones, (gentisein, gentisin, isogentisin), alkaloids; mainly gentianine (0.6% to 0.8%) and gentialuline, phenolic acids including gentisc, caffeic, protocathchic, syringic, sinapis acids) miscellaneous sugars (such as gentianose and gentiobiose) and traces of volatile oils.

Actions: Bitter, sialagogue, hepatic, chalagogue, antimicrobial, anthelmintic, emmenagogue

Indications: Gentian is an excellent bitter that, like all bitters, stimulates the appetite and digestion via general stimulation of digestive juices. Thus, it promotes the production of saliva, gastric juices, and bile. Because of this stimulation, it has a generally fortifying effect. It also accelerates the emptying of the stomach. It is indicated for most cases involving lack of appetite and digestive sluggishness, as well as dyspepsia and flatulence.

Safety considerations: In predisposed persons, gentian may cause headaches. Gentian is contraindicated during pregnancy and for those with gastric or duodenal ulcers.

Preparation and Dosage: Tincture dosage is 1 to 2ml three times a day (1:5 in 40%), 15 to 30 minutes before meals, or any time acute stomach pains are associated with feeling of fullness. To make a decoction, put ½ teaspoon of shredded root in 1 cup of water and boil for 5 minutes This should be drunk warm about 15 to 30 minutes before meals, or according to the guidelines given for tincture.

***Hydrastis Canadensis* L (MP002)**
Goldenseal
Egorotesiri
Ranunculaceae

Parts Used: Root, rhizome

Constituents: Isoquinoline alkaloids (2.5% to 6.0%): hydrastine (1.5% to 0 4.0%), berberine (0.5% to 6%) fatty acids, resin, phenylpropanoids (meconin, chlorogenic acid), phytosterins, a small amount of volatile oil.

Actions: Bitter, hepatic, alterative, anticatarrhal, antimicrobial, anti- inflammatory, laxative, emmenagogue and oxytocic.

Indications: Goldenseal is one of our most useful remedies, and owes much of its value to its tonic effects on mucous membranes. This probably accounts for its effectiveness in digestive problems, from peptic ulcers to colitis. The alkaloids it contains stimulate bile production and secretion, and this bitter stimulant activity makes it useful for loss of appetite. Goldenseal is effective in catarrhal conditions, especially sinus disorders. The herb's pharmacological activity, including its antimicrobial properties, is usually attributed to the isoquinoline alkaloid constituents, primarily hydrastine and berberine. Berberine has immunostimulant, antispasmodic, sedative, hypotensive, uterotonic, choleretic, and carminative actions. It also has anti-microbial activity, and while not in the same league as pharmaceutical antibiotics, it has a broad spectrum of antibiotic activity. Activity has been demonstrated against a number of bacteria, protozoans, and fungi in vitro. Traditionally, *Hydrastis canadensis* was used during labor to help contraindications, but for this very reason, it should not be taken during pregnancy. Apply externally, it can help with eczema, ringworm, itching, earache, and conjunctivitis.

Safety Considerations: Goldenseal is contraindicated for individual with elevated blood pressure. Prolonged use of goldenseal may decrease vitamin B absorption. Like all berberine-containing plants and strong bitters, Hydrastis is not recommended for use during pregnancy. Uterine properties stimulant has been reported for berberine, canadine, hydrastine, and hydrastinine. Goldenseal should not be taken during lactation.

Preparation and Dosage: Tincture dosage is 1ml three times a day (1:5 in 60%). To make an infusion, pour 1 cup of boiling water over ½ to 1 teaspoon of powdered root and infuse for 10 to 15 minutes. This should be drunk three times a day. Decoct unpowdered root in the usual way, by simmering.

***Zingiber officinale* Roscoe (MP003)**
Ginger
Etangausi

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Zingiberaceae

Part Used: Rhizome

Constituents: Volatile oil (1% to 3%, occasionally more), primarily containing the sesquiterpenes zingiberene and beta-bisaboline, oleoresin (4% to 10%), containing gingerols, gingerdiols, gingerdiones,

dihydrogingerdiones, shogaols and lipids (6% to 8%).

Actions: Stimulant, carminative, antispasmodic, rubefacient, diaphoretic, emmenagogue.

Indications: The best-known therapeutic application of this spice is a treatment for motion sickness, a use well documented in the research literature. Ginger also effectively stimulates peripheral circulation, making it effective for bad circulation, chilblains, and cramps. In feverish conditions, ginger acts as a useful diaphoretic, promoting perspiration. As a gargle, it helps relieve sore throats. Externally, it is the base of many treatments for fibrositis and muscle sprains. Ginger has been used around the world as an aromatic carminative and pungent appetite stimulant. In India and other countries with hot and humid climates, ginger is eaten daily and is a well-known remedy for digestive problems. It is popular not only for its flavor but also because its antioxidant and antimicrobial properties help preserve food—an essential action in such climates. Research has documented a wide range of activities for ginger. Clinical studies have shown that the herb is effective as a prophylactic against seasickness. Animal studies have suggested that it has hypoglycemic, hypotensive, hypertensive, antihypercholesterolemic, choleretic, and stomach properties. However, human pharmacological studies have shown that ginger causes a reduction in platelet aggregation. Ginger demonstrates anti-inflammatory effects in rheumatoid arthritis due to a dual inhibition of cyclooxygenase and lipoxygenase. It has also shown an ability to inhibit the actions of prostaglandins.

Safety Considerations: Ginger may influence bleeding times and immunological parameters because it inhibits thromboxane synthase and acts as a prostacyclin agonist. However, a clinical study demonstrated no differences in bleeding times between treatment and placebo groups. Large doses (12 to 14 g) may enhance the effects of anticoagulant drugs.

Preparations and Dosage: Tincture dose is 1.5 to 5ml three times a day (1:5 in 40%). To make an infusion, pour 1 cup of boiling water over 1 teaspoon of fresh root and infuse for 5 minutes. Drink whenever needed. Fluid extract dosage is 0.25 to 1 ml three times a day (1:1 in 40%).

***Mentha piperita* L (MP004)**
Peppermint

Emitisosi
Lamiaceae

Parts Used: Aerial parts Constituents: Phenolic acids (caffeic, chlorogenic and rosmarinic acid), essential oil (up to 1.5%), the major components of which are menthol, menthone, and menthyl acetate, flavonoids (glycosides of apigenin, diosmetin, and luteolin) and tannins.

Actions: Carminative, anti-inflammatory, antispasmodic, aromatic, diaphoretic, antiemetic, nervine, antimicrobial, analgesic.

Indications: Peppermint is an excellent carminative with relaxing effects on the muscles of the digestive system. It combats flatulence, flatulent dyspepsia, intestinal colic, and associated conditions, and stimulates the flow of bile and digestive juices. The volatile oil acts as a mild anaesthetic to stomach wall, allaying feelings of nausea and the desire to vomit. It also helps to relieve the nausea and vomiting of pregnancy and motion sickness. Peppermint can play a role in the treatment of ulcerative conditions of the bowels. It is a traditional treatment for fevers, colds, and influenza. As an inhalant, peppermint provides temporary relief of nasal catarrh. It may help with headaches associated with indigestion, and its nervine actions ease anxiety and tension. Used for dysmenorrhea, it relieves pain and eases associated tension. Externally, peppermint is applied to soothe itching and inflammation of the skin.

Safety Considerations: No side effects or interactions have been reported. Preparations and Dosage: Tincture dosage is 1 to 2 ml three times a day (1:5 in 40%). To make an infusion, pour 1 cup of boiling water over a

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heaping teaspoon of dried herb and infuse in a covered container for 10 minutes. This may be drunk as often as desired.

***Melissa officinalis* L (MP005)**
Lemon Balm
Eremonibarimu
Lamiaceae

Part Used: Dried or fresh aerial parts

Constituents: Volatile oil (0.1% to 0.2%) neral and geranial, caryophyllene oxide and a whole range of terpenes, flavonoids in low concentrations (luteoli-7-glucoside and rhamnazin), polyphenolics (including prorocatechuic acid, caffeic acid, rosmarinic acid and tannins), triterepenic acids, such as ursolic and pomolic acids.

Actions: Carminative, nervine, antispasmodic, antidepressant, diaphoretic, antimicrobial, hepatic.

Indications: Lemon balm, an excellent carminative herb, relieves spasms in the digestive tract and is useful in flatulence dyspepsia. Because of its mild antidepressant properties, it is primarily indicated when dyspepsia is associated with anxiety and depression, as the gently sedative oils relieve tension and stress reactions. The volatile oil appears to act on the interface between the digestive tract and the nervous system. The herb has been described by some herbalists as a trophorestorative for the nervous system, similar in some ways to oats. Lemon balm is appropriate for neuralgia, anxiety-induced palpitations, insomnia, and migraine associated with tension. However, lemon balm has a tonic effect on the heart and circulatory system and causes mild vasodilation of peripheral vessels, thus lowering blood pressure. It may be used for feverish conditions, such as influenza. Hot water extracts have anti-viral properties, possibly due in part to the presence of rosmarinic acid and other polyphenolics. A lotion-based extract may be applied to herpes simplex skin lesions, the antiviral activity having been confirmed in both laboratory and clinical trials. Lemon balm's hormone regulating effects have also been well documented in the laboratory and clinical trials. Freeze dried aqueous extracts have been shown to inhibit many of the effects of thyroid thyroid-stimulating hormone (TSH) on the thyroid gland. In laboratory studies, it interfered with the binding of TSH to plasma membranes and inhibited the enzyme idothyronine deiodinase invitro. It also inhibits the receptor binding and other biological activity of immunoglobulins in the blood of patients with Graves' disease, a condition that causes hyperthyroidism.

Safety Considerations: Lemon balm may interfere with the action of thyroid hormones.

Preparations and Dosage: Tincture dosage is 2 to 6 ml three times a day (1:5 in 40%). For an infusion, pour 1 cup of boiling water over 2 to 3 teaspoons of dried herb or 4 to 6 g of fresh herb and infuse in a covered container for 10 to 15 minutes. A cup of this tea should be taken morning and evening or when needed.

***Viburnum opulus* L (MP006)**
Cramp Bark
Ekirambubaki
Caprifoliaceae

Parts used: Dried bark

Constituents: Hydroquinones (arbutin, methylarbutin, traces of free hydroquinone) coumarins (such as scopoletin and scopoline) and Tannins (mainly catechins) [32].

Actions: Antispasmodic, anti-inflammatory, nervine, hypotensive, astringent and emmenagogue.

Indications: relaxing muscular tension and spasm; dysmenorrhea; threatened miscarriage.

Safety considerations: No side effects or drug interactions have been reported.

Preparation and Dosage: Tincture dosage is 4 to 8ml three times a day (1:5 in 40%). In order to make a decoction, one teaspoon of dried herb is put into a cup of water. This is brought to a boil and then simmered gently for 10 to 15 minutes. This should be drunk hot three times a day.

***Tilia platyphyllos* Scop (MP007**)
Linden

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Erindeni
Tiliaceae

Part Used: Dried flower

Constituents: Volatile oil (up to about 0.1 %), containing farnesol, flavonoids, (kaempferol, hesperidin, quercetin, astralagin, tiliroside, others); miscellaneous: mucilage, (in the bract), phenolic acids, tannins [3].

Actions: Nervine, antispasmodic, hypotensive, diaphoretic, diuretic, anti-inflammatory, astringent.

Indications: Nervous tension, arteriosclerosis, hypertension, migraine, feverish colds and flu.

Safety Considerations: No side effects or drug interactions have been reported.

Preparations and Dosage: Tincture dosage is 2.5 to 5 ml. three times a day (1:5 in 40 %). To make an infusion, 1 cup of boiling water is poured over 1 teaspoon of blossoms and infused in a covered container for 10 minutes. This should be drunk three times a day. For a diaphoretic effect in fever, 2 to 3 teaspoons of blossoms per cup are used.

***Plantago major* L. (MP008)**
Plantain
Eburanteini
Plantaginaceae

Parts Used: Leaf, aerial parts

Constituents: Iridoids (aucubin catalpol); flavonoids (apigenin, luteolin, scutellrin, baicalein, nepetin, hispidulin, plantagoside); tannins; oleanolic acid; plant acids [32].

Actions: Vulnerary, expectorant, demulcent, anti-inflammatory, astringent, diuretic, antimicrobial.

Indications: Coughs, mild bronchitis, diarrhea, hemorrhoids, cystitis, accompanied by bleeding.

Safety Considerations: No side effects or drug interactions have been reported.

Preparations and Dosage: Tincture dosages 2 to 3 ml three times a day (1:5 in 40 %). An infusion is made by pouring 1 cup of boiling water over 2 spoons of dried herb and infused for 10 minutes. This should be drunk three times a day. An ointment may be made for the treatment of hemorrhoids and cuts.

***Dioscorea villosa* (MP009)**
Wild Yam
Omwongo omwegarori
Dioscoreaceae

Part Used: Dried underground parts

Constituents: Steroidal saponins, based on diosgenin: dioscin, dioscorin and others.

Actions: Antispasmodic, anti-inflammatory, anti-rheumatic, hepatic, cholagogue, diaphoretic.
Indications: This valuable herb was at one time the sole source of chemicals used as a raw material for the manufacture of contraceptive hormones. However, this should not be taken to mean that the herb is a source of so-called natural progesterone. The human body is incapable of converting the sapogenins to sex hormones. Wild yam is a remedy that can be used to relieve intestinal colic, soothe diverticulitis, ease dysmenorrhea, and relieve ovarian and uterine pains. It is of great use in the treatment of rheumatoid arthritis, especially the acute phase, in which there is intense inflammation.

Safety Considerations: No side effects or drug interactions have been reported.

Preparation and Dosage: Tincture dosage is 2 to 4 ml three times a day (1:5 in 40%). To make a decoction, put 1 to 2 teaspoons of herb in 1 cup of water, bring to a boil, and simmer gently for 10 to 15 minutes. This should be drunk three times a day.

***Matricaria recutita* L (MP010)**
German Chamomile
Echamomairi
Asteraceae

Part Used: Flower head

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Constituents: sesquiterpenes (chamazulene, alpha-bisabolol, Ibisabolol oxide); sesquiterpene lactones (matricin, matricarin), flavonoid glycosides (6% to 8%), apigenin, luteolin, quercetin, isorhamnetin [3].

Actions: Nervine, antispasmodic, carminative, anti-inflammatory, antimicrobial, bitter, vulnerary.

Indications: menopausal depression; loss of appetite, dyspepsia, gastric ulcers, diarrhea, colic, aches and pains of flu, migraine, neuralgia, teething, vertigo, motion sickness, conjunctivitis, inflamed skin, urticarial, stress, anxiety, hay fever.

Safety Considerations: Chamomile may cause allergic reactions in people sensitive to plants in the Asteraceae family. However, such reactions are extremely rare.

Preparations and Dosage: Chamomile may be used in any of the ways plants are prepared as medicines. It may be used fresh or dried in infusions, and tincture is an excellent dosage to ensure that all constituents are extracted and available. Chamomile essential oil is valued in aromatherapy. For an infusion, 2 to 3 teaspoons of herb are put in 1 cup of boiling water for 10 minutes in a covered container. This should be drunk three or four times a day. Tincture dosage is 1 to 4 ml three times a day (1:5 in 40%).

***Valerian officinalis* L. (MP011)**
Valerian
Ebareriani
Valerianaceae

Parts used: Rhizome stolon, root

Constituents: Essential oil (mainly composed of sesquiterpenes such as bornly acetate, B-caryophyllene, valerone and valerenic acid), bicylic iridoids known as valepotriates, (including valtrate, isovaltrate, acetoxyvalerenic acid, isovaleroxy-hydroxydidrovaltrate) baldrinals found only in dried herb or extracts are degradation products of the valeptriates.

***Taraxacum officinale* (MP012)**
Dandelion
Asteraceae

Part Used: Root, leaf

Constituents: Sesquiterpene lactones (taraxacoside) diterpenes, including taraxacin, titerpenes, (taraxaceterol, arnidiol, faradiol,B-amyrin); sterols (stigmasterol, beta-sitosterol), carotenoids, such as lutein and violaxanthrin, xanthrophylls, flavonoids (apigen, luteloin), polysaccharides (glucans, mannans, inulin,), potassium (up to 4.5%) in aerial parts).

Actions: Diuretic, hepatic, chalalogue, antirheumatic, laxative, tonic, bitter.

Indications: Dandelion leaf is a powerful diuretic, with an action comparable to that of the drug furosemide. The usual effect of a drug that stimulates kidney function is loss of vital potassium from the body, which can aggravate any cardiovascular problem that may be present. Dandelion leaf, however, is not only an effective diuretic, but also one of the best natural sources of potassium. It is thus an ideally balanced remedy that sources of potassium. It is thus an ideally balanced remedy that may be used safely whenever diuretic action is needed, even for water retention related to heart problems. Overall, this herb is a most valuable general tonic and perhaps the best widely applicable diuretic and liver tonic. In one study investigating the effect of oral administration of dandelion extracts in rats and mice, leaf extracts produced greater diuresis than root extracts, and a dose of 50ml/kg body weight (equivalent to 2 g dried herb) produced an effect comparable to that of furosemide given at a dosage of 80 mg/kg [25]. As a hepatic and cholalogue, dandelion root may be helpful for inflammation and congestion of the liver and gallbladder. It is specific for cases of congestive jaundice. In addition, it can be very effective as part of a wider treatment for muscular rheumatism.

Safety Considerations: Dandelion may theoretically cause allergic reaction in people sensitive to plants in the Asteraceae family. There have been rare reports of contact dermatitis in people coming in frequent contact with the latex found in the stem.

Preparations and Dosage: Root tincture dosage is 2.5 to 5 ml three times a day (1:5 in 60%). To make a decoction, put 2 to 3 teaspoons of root into 1 cup of water, bring to a boil, and gently simmer for 10 to 15 minutes.

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This must be drunk three times a day. Leaf tincture dosage is 5 to 10 ml three times a day (1:5 in 40%). To make a leaf infusion, pour 1 cup of boiling water over 1 to 2 teaspoons of dried leaf and infuse for 10 to 15 minutes. This should be drunk three times a day. The leaf may also be eaten raw in salads.

***Artemisia vulgaris* (MP013)**
Mugwort
Emagigwati
Astereceae

Parts used: Leaf, root

Constituents: volatile oil (linalool, 1, 8-cineole, b-thujone,borneal,-and B-pinene), sesquiterpene, lactones (vulgarin) flavonoids, coumarin derivatives, triterpenes.

Actions: bitter tonic, Stimulant, nervine tonic, emmenagogue.

Indications: As a bitter, mugwort may be used whenever digestive stimulation is indicated. However, the herb supports digestion not only through bitter stimulation, but also through carminative actions conferred by the volatile oils it contains. In addition, it has a mild nervine action, which also appears to be related to volatile oil content, that may ease help digestion and tension. Thus, it is essential that the volatile oil is not in preparation. Mugwort may also be used as an emmenagogue to promote normal menstrual flow.

Safety Considerations: Mugwort is potentially allergic to people sensitive to plants in the Asteraceae family.

Preparation and Dosage: Tincture dosage is 1 to 4ml three times a day (1:5 in 25%). To make an infusion, pour 1 cup of boiling water over 1 to 2 teaspoons of dried herb and infuse for 10 to 15 minutes in a covered container. This should be drunk three times a day.
However, according to the herbalists, the treatment of influenza, must be placed in the context of rest and recuperation. Also to be considered is any specific points of weakness in the individual especially for elderly patients.
The actions indicated in the treatment of influenza are:

i). *Antimicrobials* to support the immune system in combating viral infection and help prevent the development of secondary infection.
ii). *Diaphoretics* help with symptoms of fever and support the body's effort to cope with elevated temperature.
iii). *Anticatarrhals* ease the symptomatic discomfort so characteristic of this problem. However, trying to dry up mucus overproduction with herbal decongestants should be avoided.
iv). *Expectorants* help combat the development of secondary problems in the lower respiratory system.
v). *Lymphatics* are indicated f the lymph glands are swollen or there is a known history of such problems.
vi). *Bitters* support the body in dealing with the debility that often follows severe viral infections.
vi). *Nervines* assist the body in dealing with high fever and associated distress.

DISCUSSION

The use of medicinal plants is deeply embedded in the cultural and health practices of the Abagusii community in southwestern Kenya. This study identified thirteen key plant species used in traditional medicine, highlighting the community's extensive indigenous knowledge. Plants like Gentian lutea, Hydrastis canadensis, Zingiber officinale, Mentha piperita, and Melissa officinalis show how different botanical resources can be used to treat health problems, such as flu-like symptoms. These plants are valued for their bioactive compounds, which exhibit antimicrobial, anti-inflammatory, and digestive properties. Such practices align with global trends where traditional medicine complements modern healthcare, as supported by [5] and [1]. The alignment of these traditional practices with scientific research reinforces the potential of medicinal plants as an integral part of primary healthcare.

The Abagusii community demonstrates a profound reliance on medicinal plants, as evidenced by the detailed methods of preparation and application of herbal remedies. For example, Gentian lutea is utilised for digestive issues, while Hydrastis canadensis aids in treating mucosal conditions. This wide use shows how much the community knows about ethnopharmacology and how much they depend on easy-to-find, low-cost, and nearby resources to treat illnesses, even flu-like conditions. Studies [6] and [11] corroborate these findings, emphasising the role of traditional medicine in

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addressing healthcare gaps, especially in rural settings where modern medical facilities are scarce.

The effectiveness of medicinal plants used by the Abagusii traditional healers is supported by their pharmacological properties. For instance, Zingiber officinale contains gingerols and shogaols, which are effective in reducing inflammation and enhancing circulation, making it beneficial for managing respiratory symptoms of influenza. Similarly, Mentha piperita can help with breathing problems and stomach problems because it has properties that help with gas and muscle spasms. A related study [10] supports the antimicrobial effects of Mentha piperita, while Melissa officinalis is recognised for its antiviral and stress-relieving properties, making it valuable in treating viral infections. These findings align with global studies, such as [29], validating the therapeutic potential of these traditional remedies.

The continued use of medicinal plants by the Abagusii community is contingent on the availability of these resources. Many species, including Gentian lutea and Zingiber officinale, are cultivated locally or sourced from the wild. However, environmental pressures, such as habitat destruction and unsustainable harvesting, pose significant threats to their availability. Sustainable practices, including the cultivation of high-demand species like Hydrastis canadensis, are critical for ensuring a steady supply. [16] and [28] emphasise the need for conservation strategies, such as community awareness and policy interventions, to safeguard these medicinal plants for future generations.

CONCLUSION AND RECOMMENDATIONS

Conclusion

The inventory of medicinal plants used by Abagusii traditional healers in the treatment of influenza highlights the depth of their ethnobotanical knowledge and the efficacy of plant-based remedies. Plants such as Gentian lutea, Zingiber officinale, and Melissa officinalis are not only culturally significant but also scientifically validated for their pharmacological actions. However, the sustainability of these practices depends on addressing challenges related to resource availability through conservation and sustainable cultivation.

The integration of traditional and modern medicine could enhance healthcare outcomes, particularly in rural areas where traditional healers play a pivotal role in addressing common illnesses like influenza. Promoting policy support and awareness is essential to ensuring the preservation and continued use of these invaluable plant resources.

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Recommendations

To enhance the use of medicinal plants among the Abagusii, efforts should focus on conserving biodiversity through sustainable cultivation and reforestation of high-demand species like Hydrastis canadensis.

Community training programs should be introduced to improve traditional healers' knowledge of sustainable harvesting practices. Additionally, collaboration between traditional healers and modern healthcare providers should be strengthened to integrate herbal remedies into primary healthcare.

Policies promoting research and documentation of indigenous knowledge are vital to preserving this heritage.

Lastly, establishing botanical gardens and seed banks for medicinal plants can ensure long-term availability while supporting education and awareness of their therapeutic potential.

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