

Use of Natural Herbs in Management of Covid19 Pandemic

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Abstract: *The questionnair is based on online survey conducted on home remedies in covid19, Currently there are no vaccinations or any kind antiviral treatment modules developed for the treatment of COVID-19, hence the employment of traditional medicines which were used in previous epidemic outbreak .Ayurveda is considered as the world's oldest medical network, which is believed to manage wide array of infections without causing any side effects. It is well equipped with diverse treatment modules for multifaceted noxious diseases . There have been many studies with drug candidates used as immune modulators. Meanwhile, people believe that consuming herbal immune modulators can prevent or even cure COVID-19. Certain natural compounds might be effective for the treatment of COVID-19 disease based on general concepts from previous experiments. This review discuss some herbal agents extracted from various plants including Piper Nigrum, Glycyrhiza glabra Linn, Curcuma Longa etc which are considered for the treatment of COVID-19. Natural products with immunomodulatory activity are widely used in treatment of many diseases.*

Keywords: COVID -19, Herbs, Natural, Neem, Ayurveda, clove, ashwagandha, lemon, black pepper, Lemon Grass, guduchi, tulsi, amla

I. INTRODUCTION

The term medicinal plants include various types of herbs used in the herbalism (“herbology” or “natural medicine”). It is the use of plants for the medicinal purpose and the study of such uses.

The word has been delivered from Latin word herba and old French word “herbe”. Now a day’s herb refers to the any part of the plant like fruit, seeds, bark, flower, leaf, stigma or a root as well as non- Woody plants . Earlier the term was applied to the non- Woody plants including those that come from trees and Shrubs. The medicinal plants are also used as a food, flavonoids, medicine or perfume and also in certain spiritual activities.

Plants are used for medicinal purpose long before prehistoric period. Ancient unani manuscript Egyptian papyrus and Chinese writings described the use of herbs. Traditional system of medicine continue to be widely practiced on many accounts. Population rise inadequate supply of drugs, prohibitive cost of treatment, side effect of several synthetic drugs and development of synthetic drugs and development of resistance to the currently used drugs for infectious disease have led to increased emphasis on use of plants material as a source of medicine for wide variety of human alignments.

Medicinal plants such as Aloe, Tulsi, neem, turmeric and ginger and several common alignments. These are considered as most commonly used in many parts of country. It is know fact that lots of consumers are using Basil(Tulsi) for making medicines.

IMPORTANCE OF NATURAL HERB WITH THEIR MEDICINAL VALUE :-

- Herbs such as black pepper, cinnamon, myrrh, aloe , sandalwood, ginseng, red clover, burdock, bayberry, safflower are used to heal wound , soars and boils .
- Some herbs are also having antibiotic properties. Termeric is useful in inhibiting growth of germs, harmful microbes and bacteria. Turmeric is widely used as a home ready to heal cut and wounds.

- Some herbs like aloe, sandalwood, turmeric, sheetrojhandi and kharekasak are commonly used as antiseptic and very high in the medicinal value.
- Ginger and clove used in certain cough syrups. They are known for their expectorant property which promotes the thinning and ejection of mucus from the lungs and trachea and bronchi. Eucalyptus, cardamom, wild cherry also used as expectorant.
- Certain aromatic plants such as Aloe, golden seal, barberry and chirayata are used as mild tonics. The bitter taste of such plants reduces toxins in blood. They are useful in destroying infection as well.
- Certain herbs are used as to increase the activity of a system or an organ such as eg. Herbs like cayenne (lal Mirchi), myrrh, camphor and guggul.
- Honey, turmeric, marshmallow and liquorice can effectively treat a fresh cut and wound. They are termed as vulnerary herb.

NEEM

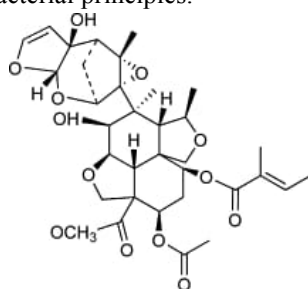


Synonym : Neem, Margosa, Azadirachta.

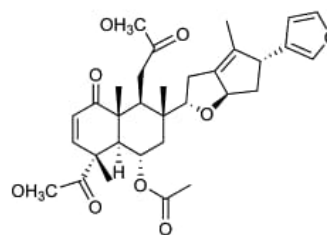
Biological source : Neem consists of almost all parts of the plants which are used as drug. Some important morphological parts are the dried stem bark, root bark, leaves and fruits of *Azadirachta indica* also, known as *Melia azadirachta*, family *Meliaceae*.

Chemical constituents :

- Neem has been found to possess several types of chemicals that could be exploited for pest management.
- Neem seeds mostly contain the complex tetranortriterpenoid lactones azadirachtin, Nimbin, nimbidin, salanin and nimbolin B out of which azadirachtin is the most active component responsible for the antifeedant activity of neem.
- Other antifeedant components identified are melianol a triterpenoid alcohol and salanin. Neem oil obtained from seeds also shows the presence of these constituents along with other compounds such as nimbolides, olichinolide B and azadiradione.
- The leaves also contain azadirachtin, melianol, salanin, β -sitosterol, stigmasterol and flavonoids such as nimatone, quercetin, myrecetin and kaempferol.
- The bark shows the presence of riimbin, nimbidin and nimbinin like antiviral agents and margolone and margolonone like antibacterial principles.



Azadirachtin



Nimbin

Uses :

- The pest control usage of neem and neem products can be properly exploited depending upon the nature of the pest.
- Neem seeds can be directly extracted to yield neem seed extracts.
- The oil expressed from the seed is known as neem oil, while the residual marc is called as neem cake which may be extracted using alcohol to obtain neem cake extractives.
- Neem oil extractive is a resinous dark byproduct of neem oil refining.
- It is well known that neem possesses low- to medium-contact toxicity which is restricted to soft body insects, and its use as an insecticide alone does not carry much conviction with the user.

ASHWAGANDHA

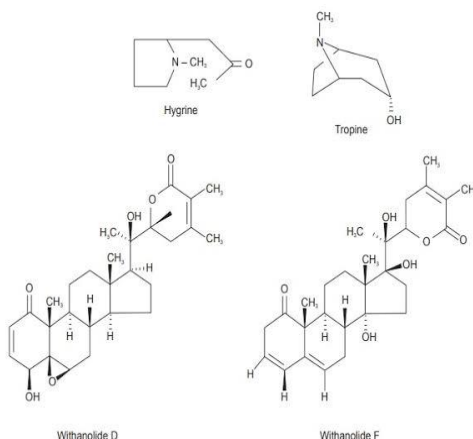


Synonym : Withania root. Ashwagandha, Clustered Wintercherry.

Biological source : It consists of the dried roots and stem bases of *Withania somnifera* Dunal, belonging to family Solanaceae.

Chemical constituents :

- The plants contain the alkaloid withanine as the main constituent and somniferine, pseudowithanine, tropine and pseudotropine, hygrine, isopellegerine, anaferine, anahygrine and steroid lactones.
- The leaves contain steroid lactone, commonly known as withanolides



Uses :

- All plant parts are used including the roots, bark, leaves, fruit and seed are used to treat nervous disorders, intestinal infections and leprosy.
- Ashwagandha is one of the most widespread tranquilizers used in India, where it holds a position of importance similar to ginseng in China.
- It acts mainly on the reproductive and nervous systems, having a rejuvenative effect on the body, and is used to improve vitality and aid recovery after chronic illness.
- It is also used to treat nervous exhaustion, debility, insomnia, wasting diseases, failure to thrive in children, impotence, infertility; multiple sclerosis, etc.
- Externally it has been applied as a poultice to boils, swellings and other painful parts. Withania is considered as an adaptogen and so is used in number of diseases.

LEMON

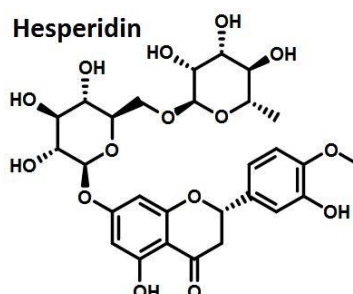


Synonym : Fructus Limonis.

Biological source : Lemon is obtained from the fresh ripe fruit of *Citrus limon* (L.) Burm. f. (*C. medica* var. *limon* Linn.), belonging to family Rutaceae.

Chemical constituents :

- Lemon contains volatile oil (2.5%), vitamin C, hesperidin and other flavone glycosides, mucilage, pectin and calcium oxalate.
- The important constituents of the volatile oil are limonene (90%), citronellal, geranyl acetate, α -pinene, camphene, linalool, terpineol, methyl heptenone, octyl and nonyl aldehydes, γ -terpinene, β -pinene, neral, and geranial.
- It also contain flavonoids eriocitrin, epigenin, luteolin, chrysoeriol, quercetin, isorhamnetin, limocitrin, limocitrol, isolimocitrol, hesperidin; coumarins scopoletin and umbelliferone; sinapic acid and β -coumaric acid.



Uses :

- Lemon peel is used as a flavouring agent, perfumery, stomachic, and carminative.
- The oil, externally, is a strong rubefacient and if taken internally in small doses has stimulating and carminative properties.

CLOVE

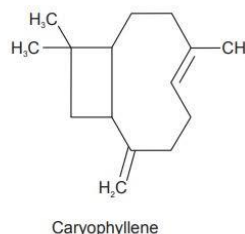
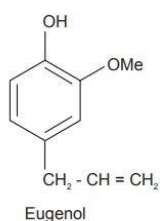


Synonym : Clove buds, Clove flowers.

Biological source : Clove consists of the dried flower buds of *Eugenia caryophyllus* Thumb., belonging to family Myrtaceae.

Chemical constituents :

- Clove contains 14–21% of volatile oil.
- The other constituents present are the eugenol, acetyl eugenol, gallotannic acid, and two crystalline principles; α - and β - caryophyllenes, methyl furfural, gum, resin, and fibre.
- Caryophyllin is odourless component and appears to be a phytosterol, whereas eugenol is a colourless liquid.
- Clove oil has 60–90% eugenol, which is the cause of its anesthetic and antiseptic properties.



Uses :

- Clove is used as an antiseptic, stimulant, carminative, aromatic, and as a flavouring agent.
- It is also used as anodyne, antiemetic.
- Dentists use clove oil as an oral anesthetic and to disinfect the root canals.
- Clove kills intestinal parasites and exhibits broad antimicrobial properties against fungi and bacteria and so it is used in the treatment of diarrhea, intestinal worms, and other digestive ailments.
- Clove oil can stop toothache.
- A few drops of the oil in water will stop vomiting, eating cloves is said to be aphrodisiac.
- Eugenol is also used as local anaesthetic in small doses.
- The oil stimulates peristalsis; it is a strong germicide, also a stimulating expectorant in bronchial problems.
- The infusion and Clove water are good vehicles for alkalies and aromatics.

TULSI

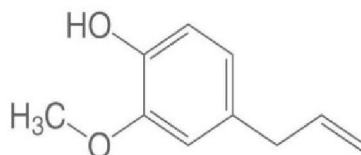


Synonyms : Sacred basil, Holy basil

Biological Source : Tulsi consists of fresh and dried leaves of *Ocimum sanctum* Linn. (Syn. *Ocimum tenuifolium* family Lamiaceae, and contains not less than 0.40 per cent eugenol on dried basis.

Chemical Constituents:

- Tulsi leaves contain bright, yellow coloured and pleasant volatile oil (0.1- 0.9 per cent). The oil content of the drug varies depending upon the type, the place of cultivation and season of its collection.
- It contains approximately 70 per cent eugenol, carvacrol (3 per cent) and eugenol-methyl-ether (20 per cent). It also contains caryophyllin.
- The plant is also reported to contain alkaloids, glycosides, saponin, tannins, an appreciable amount of vitamin C, and traces of maleic, citric and tartaric acid.



Eugenol

Uses:

- The fresh leaves, its juice and volatile oil are used for various purposes. The oil is antibacterial and insecticidal.
- The leaves are used as stimulant, aromatic, anticatarrhal, spasmolytic, and diaphoretic.
- The juice is used as an antiperiodic and as a constituent of several preparations for skin diseases and also to cure ear-ache. Infusion of the leaves is used as a stomachic.
- The drug is a good immuno-modulatory agent. Tulsi has expectorant and anti inflammatory properties.

GUDUCHI



Synonyms : Gulvel, Tinsopora, Giloe, Amrita

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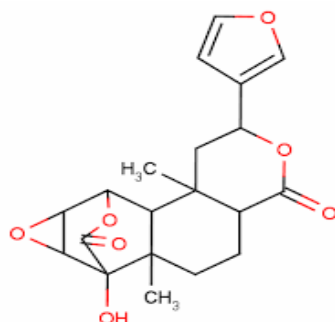
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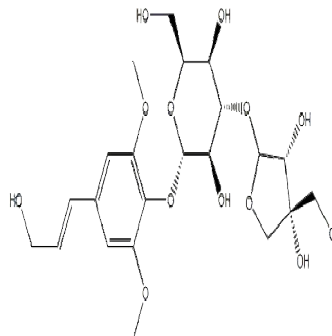
Biological Source: These are the dried leaves and stem pieces of woody climber *Tinospora cordifolia*, belonging to family Menispermaceae. It contains not less than 0.02 per cent of cordifolioside.

Chemical Constituents :

- It consists of tinosporine, tinosporic acid, tinosporol, giloin, gilonin, berberine, syringin, cordifolioside A (C₂₂H₃₂O₁₃) tinosporidine, tinosporoside, tinosporaside, etc.
- The bitter principles identified are chasmanthin, palmarin, and columbin. The stems are rich in proteins, starch, calcium and phosphorus.



Tinosporoside



Cardifolioside A

Uses:

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Lemon Grass

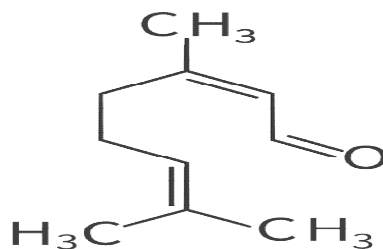


Synonyms : Gavati chaha ,East Indian Lemon Grass Oil, Indian Melissa oil, Gavati chaha

Biological Source : The lemon grass oil is a volatile oil obtained by steam distillation from the leaves and parts of the plants *Cymbopogon flexuosus* or *Cymbopogon citratis*, etc. belonging to family Graminae. It not less than 75 per cent of aldehyde calculated as citral.

Chemical Constituents

- Lemon grass oil chiefly contains citral, in addition to methylheptenol, nerol, citronellal, gentene and geraniol.



Citral

Uses

- It is used as a flavouring agent and in perfumery. It is employed as a source of citral from which Bonine is prepared. B-ionine is starting material for the synthesis of vitamin A.
- It is also used in stomach and intestinal cramp.
- It is used as antiseptic and astringent.

AMLA



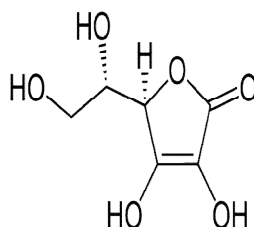
Synonyms: Emblica, Indian goose berry, Amalki

Biological Source :

This consists of dried, as well as fresh fruits of the plant *Emblica officinalis* Gaerth *Phyllanthus endica* Linn belonging to family Euphorbiaceae. It contains not less than 1.0 per cent w/w of gallic acid calculated on dry basis.

Chemical Constituents :

- Amla fruit is a rich natural source of vitamin C (Ascorbic acid) and contains 600 -750 mg per 100 g of the fresh pulp. Furthermore, fruits also contain about 0.5 per cent fat, phyllemblin and 5 per cent tannin.
- Amla fruits are also rich in mineral matters like phosphorus iron and calcium.
- It contains appreciable amount of pectin. The fresh fruits contain about 75 per cent moisture. The fruits are dehydrated and stored.
- It is found that vitamin content of dried fruits is not lost considerably. It may be due to the presence of tannins, which retards oxidation of vitamin C.



Vitamin C (Ascorbic Acid)

Uses :

- Amla fruits are largely used in Indian medicines. It is used as an acrid, diuretic, refrigerant and laxative. Dried fruits are given in diarrhoea and dysentery.
- They are also administered in jaundice dyspepsia and anaemia along with iron compound.
- Fruits are also used in preparation of inks, hair oils and shampoo. It is reported that fixed oil from fruits possesses the property of promoting hair growth.
- Amla is used as immunity booster .

BLACK PEPPER



SYNONYM - Piper Nigrum

Black pepper is also known as **King of Spices** originated in **INDIA**.

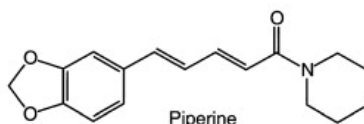
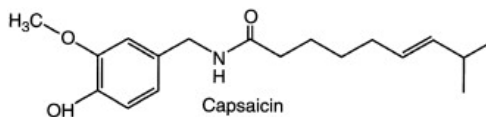
BIOLOGICAL SOURCE –It is a flowering vine belonging to family **piperaceae**.

ORGANOLEPTIC CHARACTERS

- Color -Blackish Brown to greyish black.
- Odor-Aromatic.
- Taste-Pungent.
- Size-3.5 to 6mm in diameter.
- Shape-Globular.

CHEMICAL CONSTITUENTS-

- Alkaloids : Piperine (5-9%) and Piperidine.
- Volatile oils : (1-2.5%)
- Pungent Resin:(6.0%)
- Pepper volatile oil contains : 1 – phellandrene and Caryophyllene.



USES-

1. It is an important constituent of whole pickling spice, ketchups and many ground spice formulae.
2. It is pungent, aromatic, digestive, stimulant and nerve tonic.
3. Stimulate the flow of gastric juice.
4. Beneficial to cough and cold.
5. Act as antidote to snake bite and scorpion sting.

6. Essential oils oleoresins extracted from black pepper are used in the preparation of piperazine elixir, a drug formulation for removal of round worms in inyestinal tract of human beings.
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GINGER



SYNONYM –Adrak,Zingiber

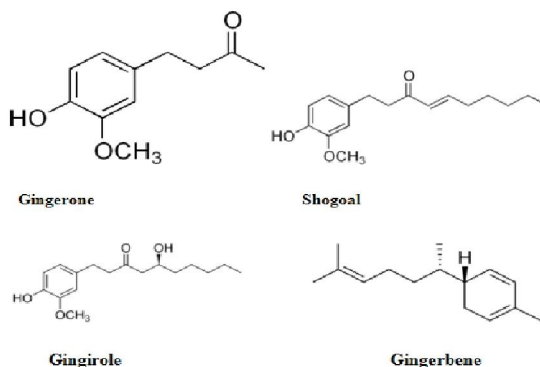
BIOLOGICAL SOURCE – Ginger belongs to **oleo gum resin** category and is obtained from the rhizomes of *Zingiberofficinale* Roscoe belongs to family **ZINGIBERACEAE**.

ORGANOLEPTIC CHARACTERS-

- Color – Buff or Earthy Brown.
- Odor – Characteristic, Agreeable and Aromatic.
- Taste – Rhizomes are 5 to 15 cm in length and 2 to 6 cm in width.
- Shape – Rhizomes are laterally compressed. Bears short, flat, ovate branches and bud at apex.

CHEMICAL CONSTITUENTS-

- It contains Volatile oil, fat, starch, moisture, resinous matter, fibre and inorganic material etc. The oil contains hydrocarbons, oxygenated derivatives of terpenes and phenyl propanoids.
- Along with these compounds alpha- zingiberene, beta- sesquiphellandrene, alpha- curcumin, beta- bisabolene,geranial, citral are also present in the drug.
- The specific aroma of the ginger is due to the presence of volatile oils where as the pungency and therapeutic action is due to the presence of phenolic ketones which include gingerolss like Zingerone, gingediols, paradols, shogaols and hexahydrocurcumin.



LIQUORICE



SYNONYM- Glycyrrhiza.

Liquorice is a Saponin Glycoside.

BIOLOGICAL SOURCE-liquorice is the dried, peeled or unpeeled, roots, rhizomes or stolon of Glycyrrhizaglabra Linn.

FAMILY- Leguminosae.

ORGANOLEPTIC CHARACTERS-

- **COLOR-** Unpeeled liquorice – Externally yellowish brown or dark brown and internally yellowish colour.
- **ODOR-**Faint and characteristic.
- **TASTE-** Sweet.
- **SIZE-** Length=20 to 50 cm, Diameter=2cm.
- **SHAPE-** Unpeeled drug-Straight and nearly cylindrical, Peeled drug- Mostly angular

CHEMICAL CONSTITUENTS-

1. Glycirrhizin/glycirrhizic acid.
2. Glucuronic acid.
3. Resin, Volatile oil.
4. Liquiritoside, isoliquiritoside, liquiritin; isoliquiritin.
5. Starch.

USES-

1. Glycirrhiza has demulsent and expectorant properties.
2. It is used as a masking agent for bitter drugs in pharmaceutical formulations, such as quinine, aloe, ammonium chloride, etc.
3. Ammoniated glycyrrhiza is employed as a flavouring agent in beverages, pharmaceuticals.
4. The inherent surfactant activity due to the presence of saponins helps to facilitate the absorption of poorly absorbed drugs.

5. The presence of glycyrrhetic acid exert mineralocorticoid activity and hence it is used in the treatment of inflammations, rheumatoid arthritis and Addison's disease.

CAMPHOR



ORGANOLEPTIC CHARACTERS-

- COLOR- colorless translucent mass.
- ODOR- Characteristic.
- TASTE- pungent and aromatic.

CHEMICAL CONSTITUENTS-

1. Camphor oil contains camphor, cineole, pinene, camphene, phellandrene, limonene, and diterpenes.
2. Camphor is entirely a monotropic ketone.

USES-

- It is used externally as a rubefacient, counterirritant and internally as a stimulatory, carminative and antiseptic.
- It is a topical antipruritic and antiinfective, used as 1-3% in skin medicaments and in cosmetic.

Turmeric:-



Turmeric and especially its most active compound curcumin have many scientifically proven health benefits such as potential to prevent heart disease and cancer. Its potent anti-inflammatory and anti-oxidant also helps to improve symptoms of depression and arthritis. Turmeric is a plant that has a very long history of medicinal use, dating back nearly 4000 years. In Southeast Asia, turmeric is used not only as a principal spice but also as a component in religious ceremonies.

Medicinal Use:-

Turmeric is one such herb. Turmeric is used as an herbal medicine for rheumatoid arthritis, chronic anterior uveitis, conjunctivitis, skin cancer, small pox, chicken pox, wound healing, urinary tract infections, and liver ailments.

Turmeric As Natural Herb:-

Turmeric (*Curcuma longa*), also known as “Indian saffron” due to its brilliant yellow colour, is a spice herb, member of the ginger family (*Zingiberaceae*) native to the Indian subcontinent and Southeast Asia, having more than a two centuries old scientific history. The worldwide main producer of turmeric is India, which has been used as Ayurvedic remedy and flavouring agent since ancient times (more than 4000 years).

Depending on its origin and growth conditions, turmeric obtained from ground-dried root contains different percentages of volatile and non-volatile oils, proteins, fats, minerals, carbohydrates, curcuminoids and moisture. Commercially available curcumin is a combination of three molecules, together called curcuminoids. Curcumin is the most represented (60–70%), followed by demethoxycurcumin (20–27%) and bisdemethoxycurcumin (10–15%). The immunomodulatory abilities of curcumin arise from its interaction with various immunomodulators, including not only cellular components, such as dendritic cells, macrophages, and both B and T lymphocytes, but also molecular components involved in the inflammatory processes, such as cytokines and various transcription factors with their downstream signalling pathways. Main significant immunomodulatory and anti-inflammatory effects of curcumin in different *in vitro* and *in vivo* studies.

Synonyms:-

Hindi- Haldi; Bang- Halud; Guj- Halada; Kan- Arisina; San- Haldi, Haridra; Tam- Manjal; Tel- Pasupu

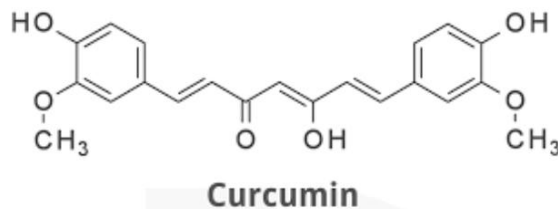
Biological source:

Turmeric consists of the dried rhizomes of *curcuma longa* L. (*C. domestica* Valetton)

Family:- Zinziberaceae.

Parts Used:- Dried rhizomes.

Chemical Constituents:-



Curcumin (diferuloylmethane), a polyphenol compound responsible for the bright yellow color of turmeric, is believed to be the principal pharmacological agent. In addition to curcumin, turmeric contains the curcuminoids atlantone, bisdemethoxycurcumin, demethoxycurcumin, diaryl heptanoids, and tumerone.

Uses Of Turmeric:-

- As antioxidant
- Used to treat arthritis
- Used to treat cancer
- Improve liver function
- Cardiovascular protection
- Used to treat headache
- Lung infections,menstrual problem.

Organoleptic Characters:-

Colour:- Orange yellow to yellow

Odour:- Aromatic

Taste:- Warmly aromatic & bitter.

Benefits Of Turmeric:-

- Healing properties
- Reduce risk of cardiovascular disease
- Improves digestion
- Antifungal properties
- Reduce risk of diabetes.

Cinnamon:-



Cinnamon is a spice obtained from the inner bark of several tree species from the genus *Cinnamomum*. Cinnamon is used mainly as an aromatic condiment and flavouring additive in a wide variety of cuisines, sweet and savoury dishes, breakfast cereals, snack foods, tea and traditional foods. Since ancient times, the fragrant spice has delighted palates, influenced the fate of nations, and been hailed for its supposed medicinal properties. Cinnamon is the name for several species of trees and the commercial spice products that some of them produce. All are members of the genus *Cinnamomum* in the family Lauraceae. Only a few *Cinnamomum* species are grown commercially for spice.

Medicinal Use:-

- May protect against cancer
- Boost immune system
- It helps in reduced risk of heart disease
- Helps in lowering blood sugar levels.

Cinnamon as natural herb:-

It is common to catch regular cold and cough. Adding cinnamon to diet has many benefits, cinnamon is highly delicious spice, which has many medicinal properties. It has been used as ingredient throughout history. It helps to fight flu, cancer & more life threatening disease. Cinnamon is an evergreen tree characterized by oval-shaped leaves, thick bark, and a berry fruit. When harvesting the spice, the bark and leaves are the primary parts of the plant used. Cinnamon is cultivated by growing the tree for two years, then coppicing it, i.e., cutting the stems at ground level. The following year, about a dozen new shoots form from the roots, replacing those that were cut. A number of pests such as *Colletotrichum gloeosporioides*, *Diplodia* species, and *Phytophthora cinnamomi* (stripe canker) can affect the growing plants. The stems must be processed immediately after harvesting while the inner bark is still wet. The cut stems are

processed by scraping off the outer bark, then beating the branch evenly with a hammer to loosen the inner bark, which is then pried off in long rolls. Only 0.5 mm (0.02 in) of the inner bark is used the outer, woody portion is discarded, leaving metre-long cinnamon strips that curl into rolls ("quills") on drying. The processed bark dries completely in four to six hours, provided it is in a well-ventilated and relatively warm environment. Once dry, the bark is cut into 5 to 10 cm (2 to 4 in) lengths for sale. The barks of the species are easily distinguished when whole, both in macroscopic and microscopic characteristics. Ceylon cinnamon sticks (quills) have many thin layers and can easily be made into powder using a coffee or spice grinder, whereas cassia sticks are much harder. Indonesian cinnamon is often sold in neat quills made up of one thick layer, capable of damaging a spice or coffee grinder. Saigon cinnamon (*C. loureiroi*) and Chinese cinnamon (*C. cassia*) are always sold as broken pieces of thick bark, as the bark is not supple enough to be rolled into quills.

II. PHARMACOGNOSTIC SCHEME OF CINNAMON

Synonyms:

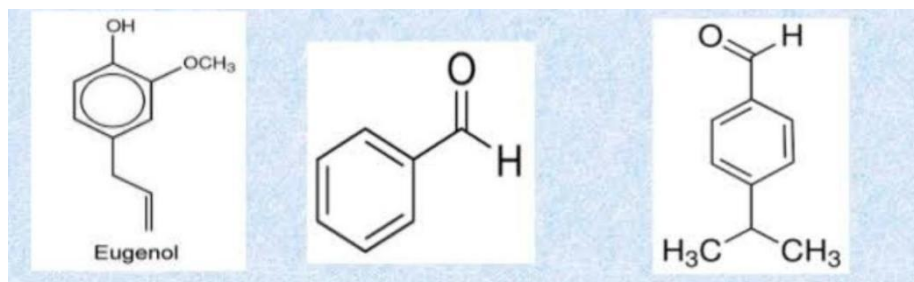
Cinnamon bark, Kalmi-dalchini; Ceylon cinnamon

Biological source: It consists of the dried inner bark of the shoots of coppiced trees of *Cinnamomum zeylanicum* Nees (*Cinnamomum verum* J. S. Presl.)

Family: Lauraceae

Parts Used:- Dried inner bark.

Chemical constituents:-



It contains 60-70% of cinnamaldehyde, benzaldehyde, cuminaldehyde & other terpene like pinene, cymene, caryophyllene.

Uses of Cinnamon:-

- As carminative
- As Stomachic
- Mild astringent
- Flavouring agent

Organoleptic Characters:-

Colour: Externally dull yellowish brown, internally dark yellowish brown

Odour: Aromatic

Taste: Warm and very refined (Sweetish and aromatic followed by warm sensation)

Benefits Of Cinnamon:

- It has anti-viral, anti-bacterial, anti-fungal properties.
- Contains antioxidants and anti-inflammatory effects.
- Reduces blood pressure.
- Relieves digestive discomfort.
- Its prebiotic properties may improve gut health.

BLACK CUMIN SEEDS

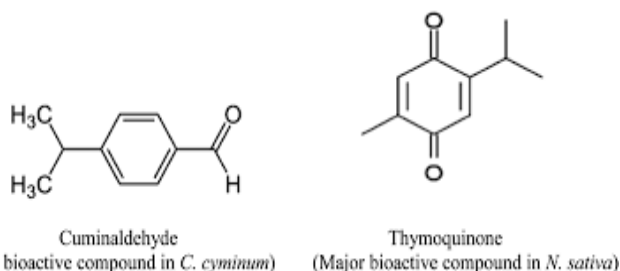


Synonym:

The specific epithet *sativa* means 'cultivated'. In English, *N. sativa* and its seed are variously called black caraway, black seed, black cumin, fennel flower, nigella, nutmeg flower, Roman coriander, and kalanji.

Biological Source: *Nigella sativa* L. (Ranunculaceae), commonly known as black seed or black cumin, has been used for medicinal purposes for centuries. It originated from Southeastern Asia and was also used in ancient Egypt, Greece, Middle East, and Africa.

Chemical Constituents:-



Cumin seeds are nutritionally rich; they provide high amounts of fat (especially monounsaturated fat), protein, and dietary fibre. Vitamins B and E and several dietary minerals, especially iron, are also considerable in cumin seeds. Cuminaldehyde, cymene, and terpenoids are the major volatile components of cumin (Bettaieb et al., 2011). Cumin has a distinctive strong flavour. Its warm aroma is due to its essential oil content. Its main constituent of aroma compounds are cuminaldehyde and cuminic alcohol.

Uses:

It is used for respiratory conditions including asthma, allergies, cough, bronchitis, emphysema, flu, swine flu, and congestion. Other uses include lowering blood pressure, lowering cholesterol levels, treating cancer, and boosting the immune

GARLIC



Synonym:- *Allium sativum*; chive; ail.

Biological Source:- Garlic, (*Allium sativum*), perennial plant of the amaryllis family (Amaryllidaceae), grown for its flavourful bulbs. The plant is native to central Asia but grows wild in Italy and southern France and is a classic ingredient in many national cuisines.

Chemical Constituents:-

Chief chemical constituent of Garlic is an essential oil, which contains allyl propyl disulphide, diallyl disulphide, dimethyl disulphide and polysulphides. The sulphur compounds include allicin, alliin, cycloalliin, ajoene, allisatin I & II and sativins. It also contains anthocyanins, carbohydrates, proteins, amino acids, glycosides of kaempferol and quercebn, saponin-like substances, sterols (beta-sitosterol, cholesterol, and campesterol), vitamins and polysaccharides. Four steroidal saponins, protoisoeruboside, eruboside-B, isoeruboside-B, sativoside C, and two amino acids, adensine, and tryptophan, have been isolated from the fresh bulbs. Vitamins A, B, C and alpha-tocopherol (vitamin E) have also been isolated from garlic. Garlic also contains prostaglandins A2 and F1.

USES:-

Garlic is most commonly used for conditions related to the heart and blood system. These conditions include high blood pressure, high levels of cholesterol or other fats (lipids) in the blood (hyperlipidemia), and hardening of the arteries (atherosclerosis).

III. METHODOLOGY

We prepared google form and made a survey on “ use of natural herbs during covid 19”

The data is collected from survey. The survey contains following questions that were asked to the people.

We also done the oral survey in the form of oral communication. In that we get the information which natural herbs are used to boost the immunity or prevention of covid 19 during covid 19 .

The questionnaire from google form are listed below :

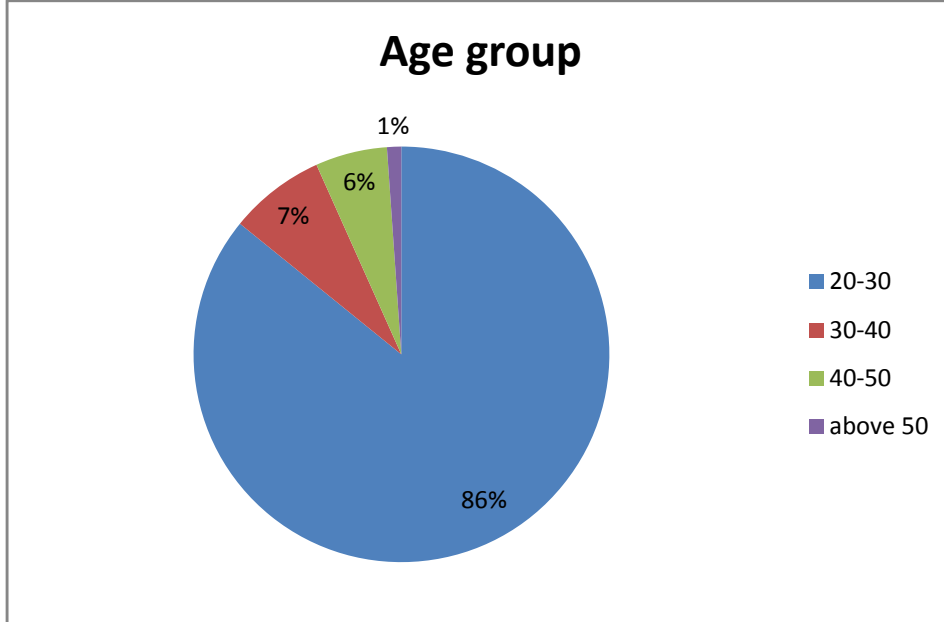
1. E -mail ID
2. Name
3. Age Group
30-40
40-50
20-30
above 50
4. Profession
Student
Job
Business
Other
5. Which of the following natural herbs you have used during covid 19 ?
Tulsi
Turmeric
Guduchi (Gulwel)
Cinnamon/clove /pepper
Lemon
Ginger
6. For how much time you are using these natural herbs ?
1 months
2 months

3 months
more than 3 months

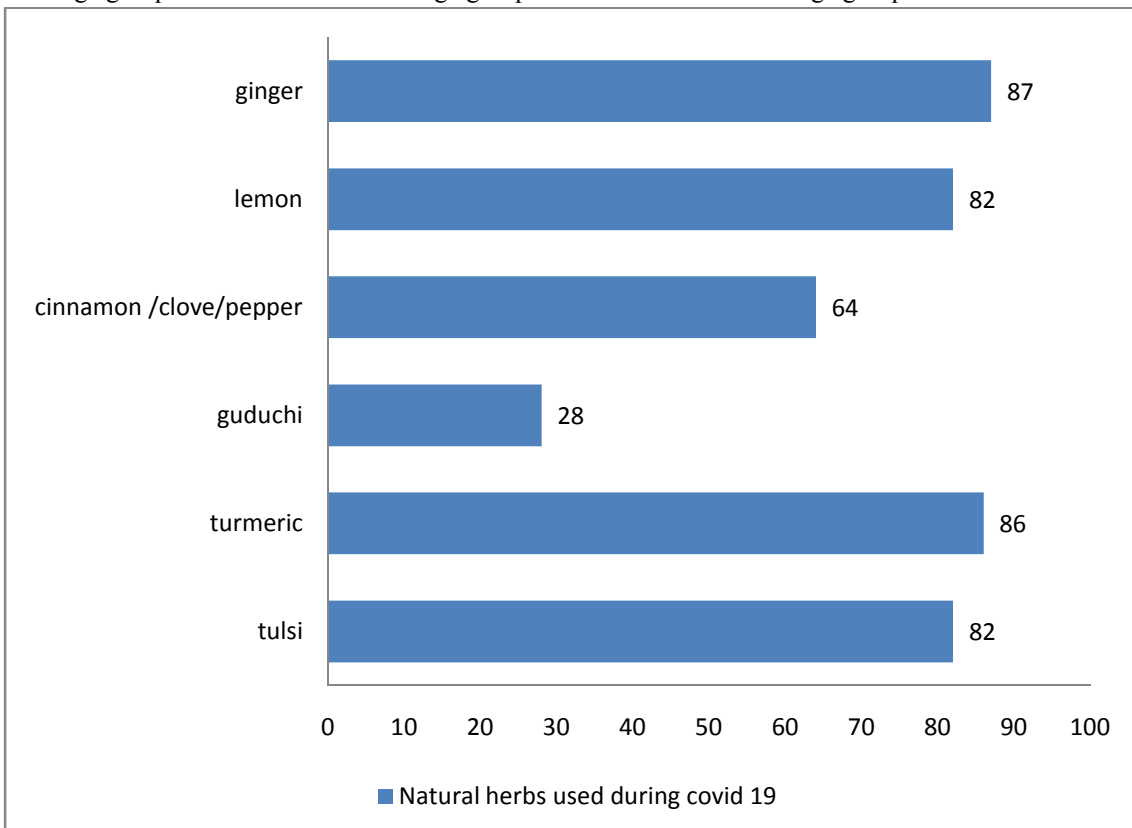
7. How frequently you use these herbs?
Once in a day
Twice a day
Once in a week
Twice or thrice in a week
8. Why you started using natural herbs ?
For prevention of covid 19
To boost the immunity
During the treatment of covid 19
All of above
9. Have you ever tested covid 19 positive ?
Yes
NO
10. What is the source of information behind using these natural herbs ?
Internet
Traditional source
Physician
All of above
11. Do you really feel boost in your immunity after using above herbs ?
Yes
No
12. The natural herbs you have used is effective on which following covid 19 symptoms?
Cold
Fever
Cough
Sore throat
Shortening of breath
Headache
Weak immunity
13. Do you think ,it is effective to use these natural herbs during covid 19 ?
Yes
No
14. Which natural herbs do you think is more effective in covid 19 infection ?
Tulsi
Turmeric
Guduchi (Gulwel)
Cinnamon/clove /pepper

REPORT :

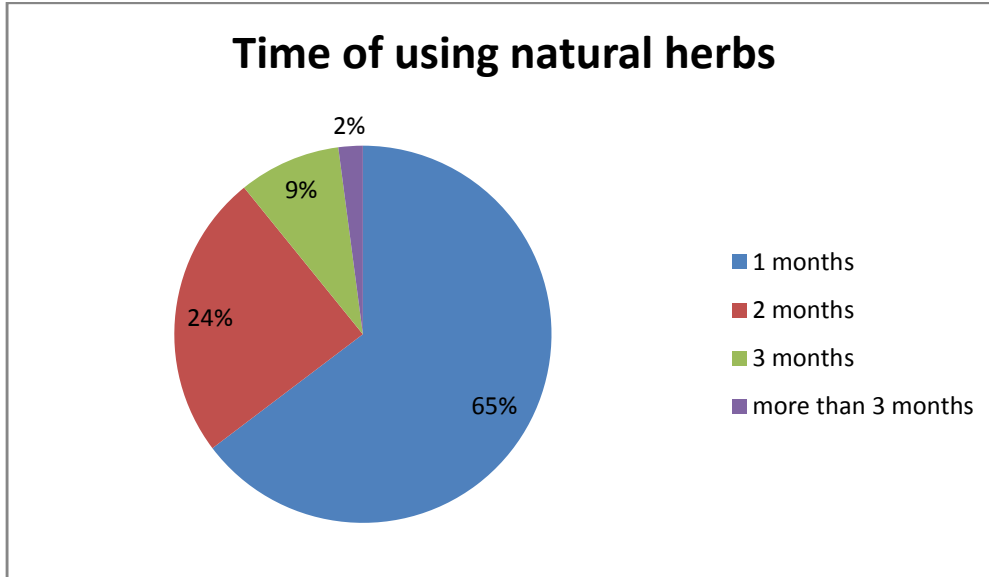
The corona virus disease is highly transmittable with no effective antiviral therapy to combat the infection. However, in our study we highlighted the role of natural immunomodulators in the treatment of COVID-19.



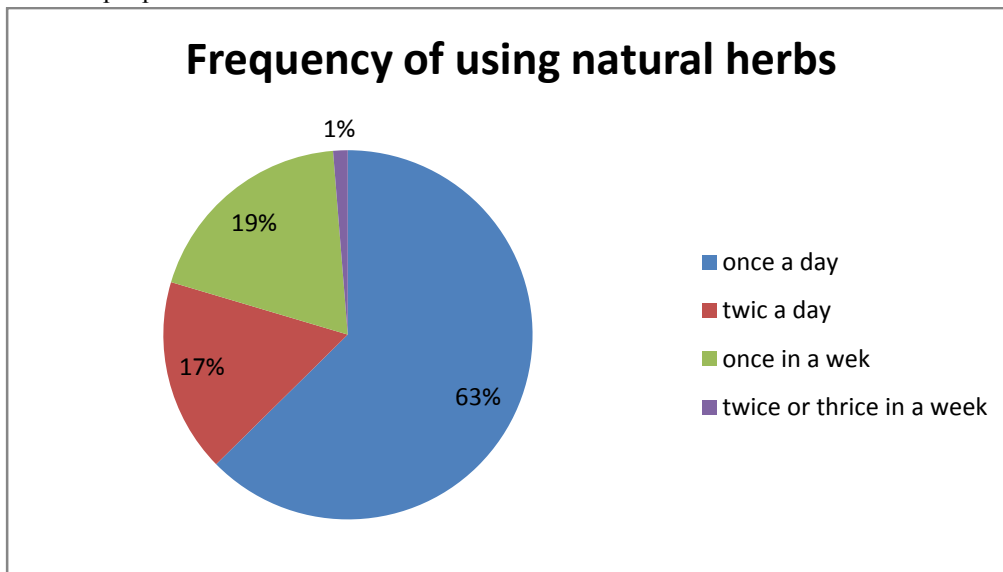
The responses which we get are from mostly 20-30 age group about 86% are from these age group. About 7 % are from 30-40 age group and 6% are from 40-50age group. And 1% from above 50 age group.



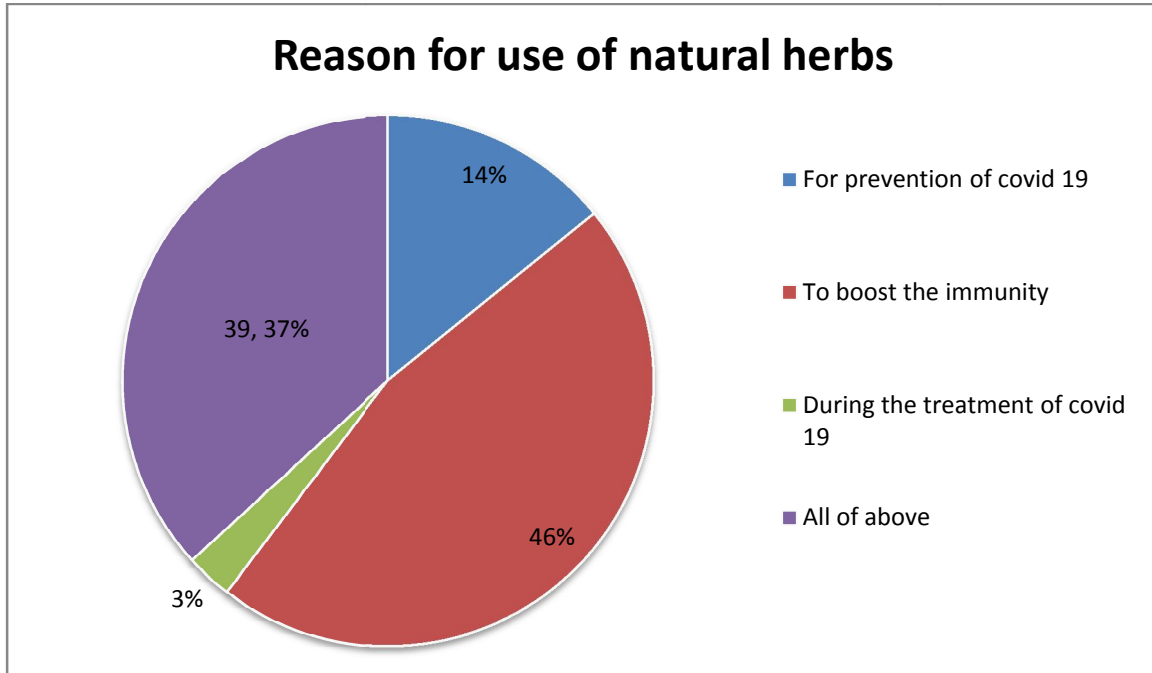
We have analyzed that most of the people have used ginger that is about 87% people during the COVID-19 pandemic, 86% people used turmeric, 82% tulsi and lemon, 64% people has used the cinnamon, clove and pepper where as 28% guduchi.



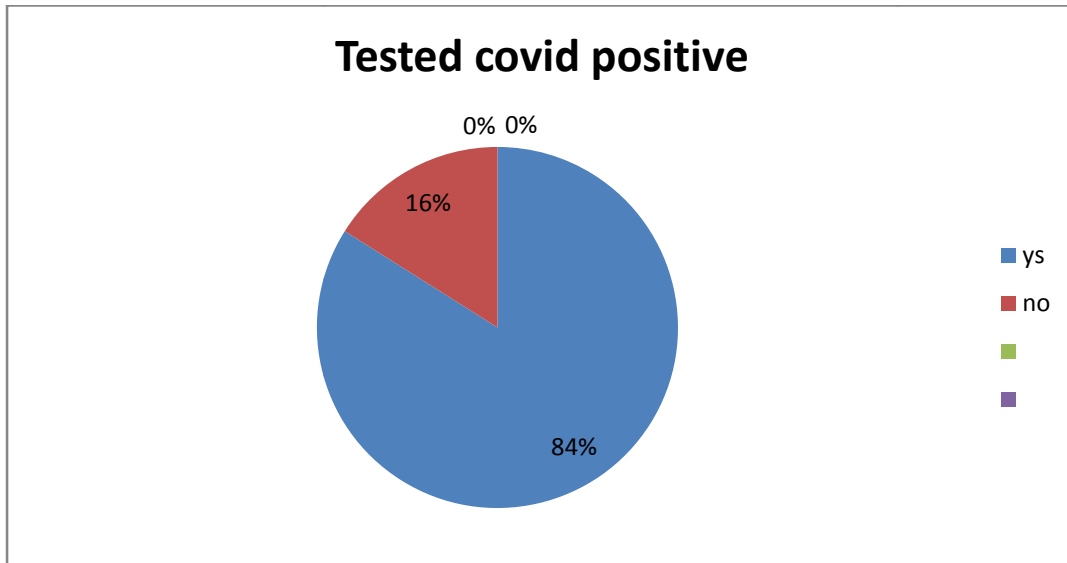
The survey has been conducted to identify the various home remedies used during COVID-19 which include many species and herbs in which 65% people have used the natural herb for 1 month, 24% people for 2 months, 9% people for 3 months and 2% people for more than 3 months .



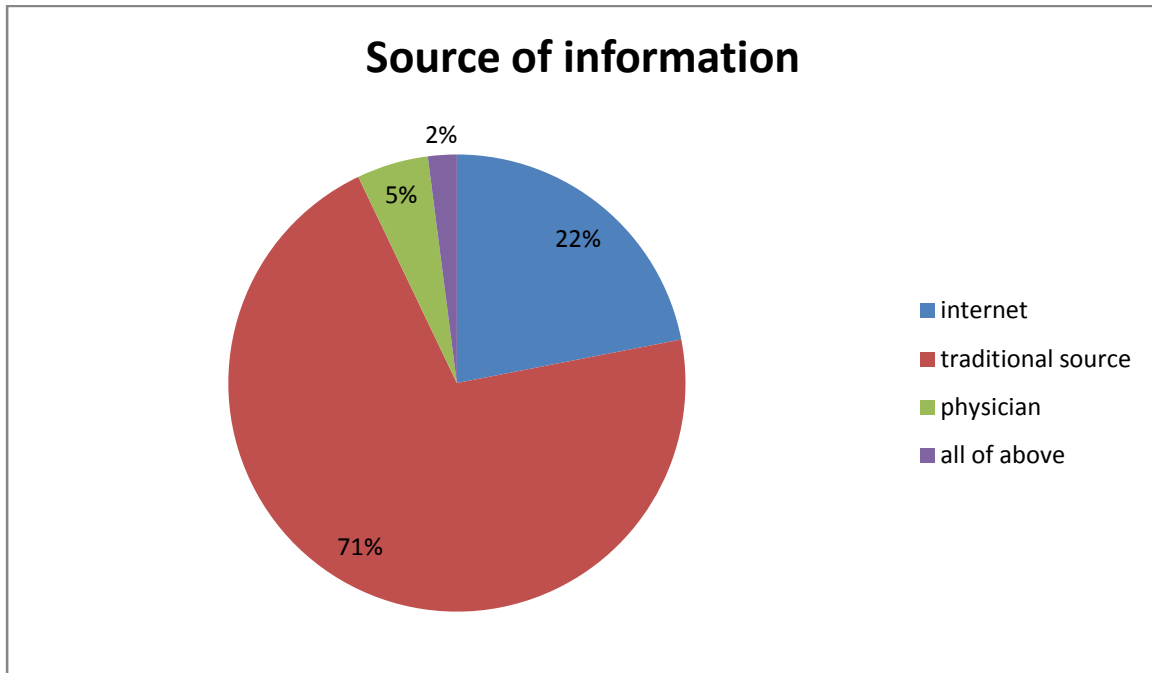
The frequency of using natural herbs in a day is most probably seen 63% once in a day, 17% twice a day, and 19% once in a week also 1% have used twice or thrice in a week.



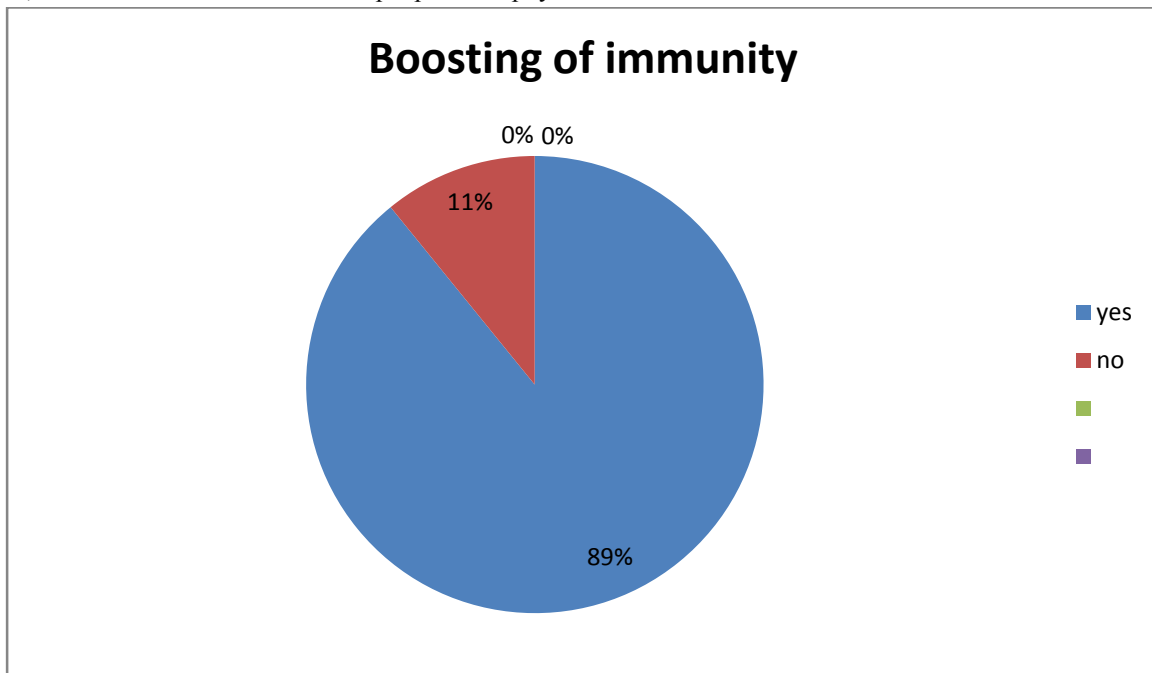
At 46% people use natural herbs to boost up their immunity, and 14% people for prevention of COVID-19, 39.37% for both the reasons.



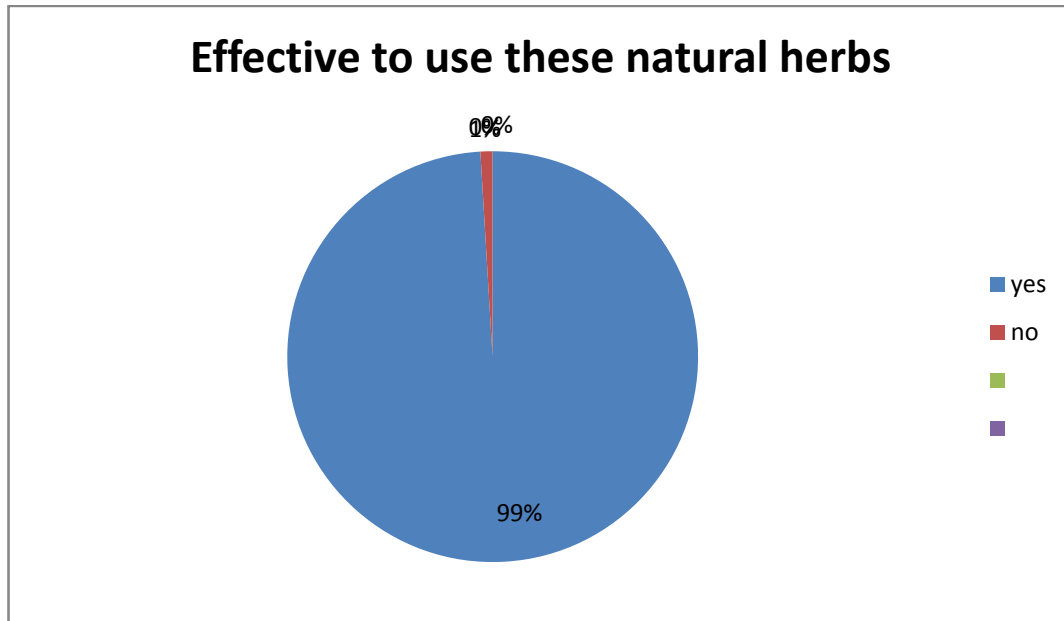
Out of 107 responses 84% people have tested positive for COVID-19, whereas 16% people have tested negative.



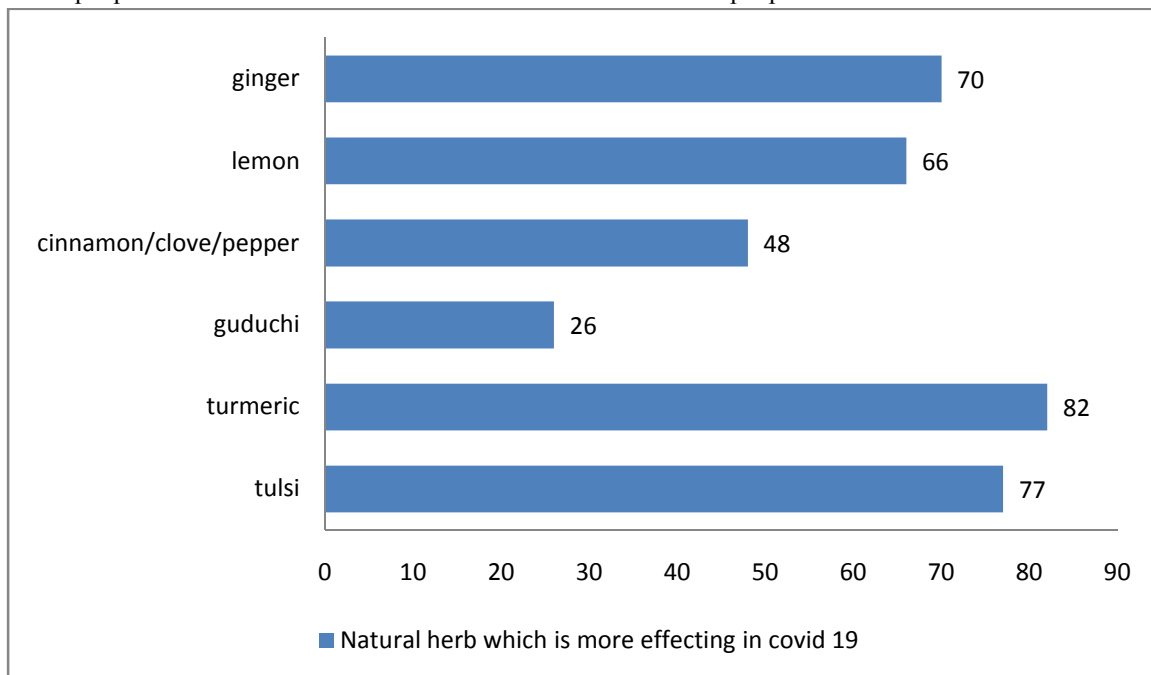
The source of information from which the use of natural ingredients or kadha have been obtained is 22% people from internet, 71% traditional source and 5% people from physician..



89% people used the natural herb for boosting the immunity and 11% have not used the natural herb for boosting the immunity.



About 99% people think that it is effective to use the natural herb and 1% people think that it is ineffective.



The natural herb which is more effective in COVID-19 is ginger used about 70% of people, 66% people used lemon, 48% people cinnamon, clove, pepper, 26% people used guduchi, 82% turmeric, and 77% people used tulsi. According to oral survey many people are used lemongrass, amla, lemon, ashwagandha, liquorice, camphor, eucalyptus oil, garlic, etc. during covid 19.

IV. CONCLUSION AND DISCUSSION

Our work on ‘use of natural herbs in the management of COVID-19 pandemic’ we concluded that several natural herbs have safety margins superior to those of reference drugs and enough levels of evidence to start a clinical discussion about their potential use of adjuvants in the treatment of early/mild common flu in otherwise healthy adults within the context of COVID-19. While these herbal drugs will not cure or prevent the flu, they may both improve general patient well-being and offer them an opportunity to personalize the therapeutic approaches. There is a wide

scope of natural herbs that have been used since traditional times. They have been considered as potent clinical agents against wide array of viral diseases due to their anti-viral properties. These natural herbs are being tested for treating COVID-19... It further corroborates the effectiveness and adverse events of natural herbs in the treatment of COVID-19. The natural herbs having the potential to combat COVID-19 and other viruses might have anti-viral activities against COVID-19 and can be used.

Use of natural herbs could be a complementary preventive therapy for COVID-19 and from our survey it was found that 87% people used ginger and 86% people used turmeric, 82% tulsi and lemon, 64% people used cinnamon, clove and pepper and 28% guduchi for the prevention of covid and 89% of people found increase in immunity. The frequency of using natural herbs in day is most probably seen 63% once in a day.

From oral survey it was concluded that other than above natural herbs people have also used camphor, amla, lemongrass, garlic in most of cases in day to day life during COVID-19 and 89% people used natural herbs for boosting the immunity.

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