



PHARMACOGNOSY OF GINGER OFFICINALE

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ABSTRACT

We are found the 350,000 species of plants which are found in earth, these plant are produce great medicinal properties. The plant of Ginger is also known as Gingerin, Rhizoma zingiberis, Zingibere and Ginger Officinale which is belong from the family of Zingiberaceae. The ginger rhizome is yellowish green colored. The ginger plant is very useful across the world-wide and it can be cultivated in dry and nutritional condition. The plant is consitituent with following chemical consitituents which are play a vital role in medicinal field. It is used to treatment and prevention of various diseases such as cough, morning sickness, motion sickness, vomiting after surgery, respiratory problems and bronchitis.

KYEWORDS

Introduction, Biological source, Geographical source, Botanical classification, Vascular name, Organoleptic property, Microscopic property, Cultivation, Chemical consitituents, Pharmaceutical uses

INTRODUCTION

The Ginger (*Zingiber officinale*) are the flowering plants rhizome, ginger root or ginger, it is broadly use for spice and a phytomedicine. [1] The ginger are leafy steam and yellowish green flowering plant. The ginger are spice plant, then the spices comes from the roots of the plant. The ginger is domestic to warming parts of Asia such as Japan, China and India, but these are growing parts of South America and Africa. It is used as medicine and with food in the middle East. [2]



The ginger is introduced in Mediterranean in 1st century in Japan, 11th century in England and America in 1585. It is broadly cultivated in subtropical and tropical area's in the world but most of the cultivates in Asia and Africa. Ginger is basically used in flavoring agent for foods and used as spice. [3]

Ginger Officinale

SYNONYMS

Gingerin , Rhizoma zingiberis , Zingibere , Ginger Officinale [4]

FAMILY

Zingiberaceae

BIOLOGICAL SOURCE

The ginger is the rhizomes of Zingiber officinale, Roscose and dried in the sun. [4]

GEOGRAPHICAL SOURCE

The ginger sre mostly cultivates in India, Japan, Nigeria, Jamaica, West Indies and Africa.[5]

BOTANICAL CLASSIFICATION [6]

- **Botanical Name-** Zingiber officinale
- **Family Name** - Zingiberaceae
- **Kingdom** - Plantae
- **Division** - Tracheophyta- Vascular plant
- **Class** - Magnoliopsida
- **Order** - Zingiberales
- **Family** - Zingiberaceae
- **Genus** - Zingiber Mill.-ginger
- **Species** - Zingiber officinale Roscoe- garden ginger

VASCULAR NAME [7]*International Common Names*

- **English:** common ginger; garden ginger; true ginger
- **Spanish:** gengibre; Jengibre; jenjibre dulce; kion
- **French:** gingembre; gingembre chinois
- **Chinese:** jiang
- **Portuguese:** gengibre-comum

Local Common Names

- **Bulgaria:** dzhindzhifil
- **Cambodia:** chnay; khnhei; khnhei phlung
- **Croatia:** dumber
- **Ecuador:** agiringuire; sach a ajo
- **French Polynesia:** rea moru; rea tinito; re'a-ma'ohi; re'amoruru
- **Germany:** Ingwer
- **Guam:** asngod; hasngot
- **India:** aale; ada; adi; adrak; adraka; adu; aduwa; alha; allam; inchi; inji; shing; shonti; shunthi; sunth
- **Indonesia:** atuja; beuing; jae; jahe; jahi; lia
- **Italy:** Zenzero
- **Japan:** oshoga
- **Korea, Republic of:** saeng gang
- **Laos:** khi:ng
- **Malaysia:** haliya; jahi
- **Morocco:** kenjabil
- **Myanmar:** gyin
- **Netherlands:** djahe; Gember
- **Palau:** kesol ra ngebard; sionga
- **Papua New Guinea:** kawawar; kawawari
- **Philippines:** baseng; laya; luya
- **Slovakia:** dumbier lekartsy

- **Sweden:** Ingefaera
- **Thailand:** khing; khing-daeng
- **Vietnam:** cay gung

ORGANOLEPTIC PROPERTIES

Colour - Yellowish green

Odour - Aromatic

Taste - Spicy, pungent, bitter

Height - Upto 1m

- The plant of ginger grow upto 1m height.
- Its leaves are the 6-12 inches long.
- The flowers of ginger is green purple color of it's terminal spikes.
- The rhizomes of ginger is buff colored.[8]

MICROSCOPIC PROPERTIES

1] Cork –

The two cork are present in ginger.

Outer cork – It may present some layer, which is dark brown in color, it is made up of irregular parenchymatous cell.

Inner cork - It may be present some layer, which is colorless, parenchymatous cell radially arranged in regular rows.

2] Cortex – It is consist for the thin walled, cellulosic, rounded parenchyma with intercellular spaces.

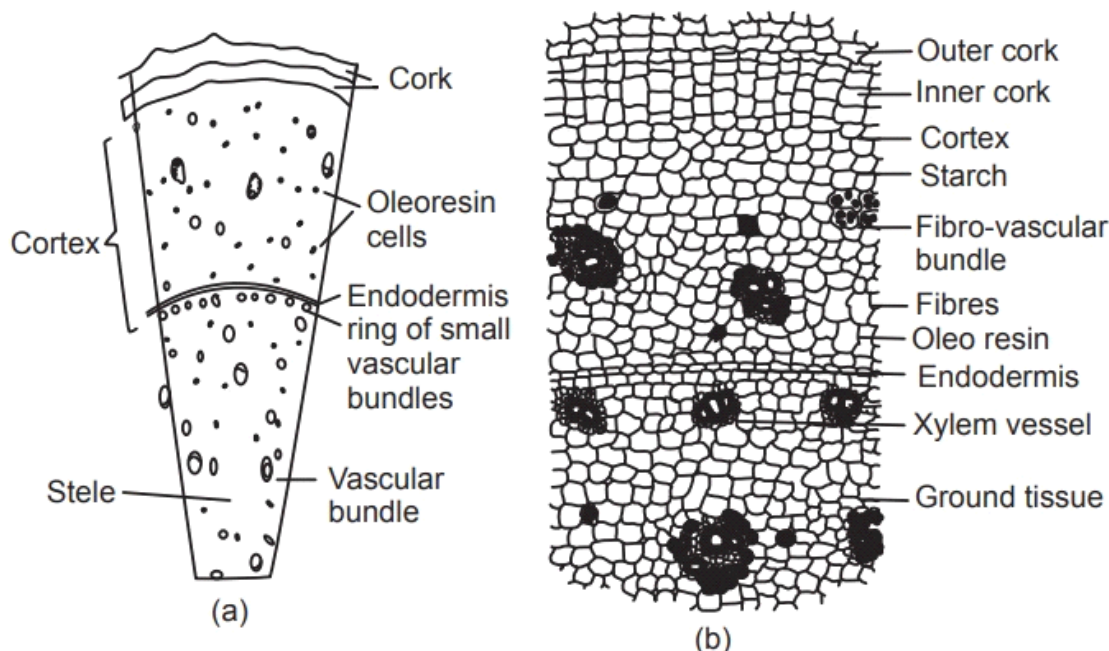
3] Parenchyma cortex is consist of starch grains.

4] Closed collateral fibro Vascular bundles are present in the cortex.

5] Brown oleoresin cells is present.

6] Style- Vascular bundle rings is just under the endodermis, ground tissue of parenchymatous cell are consist fibro vascular bundle, oleoresin cells and starch.

7] Xylem vessels – Annual, spiral or reticulate thickenings un lignified.



8] Fibres – lumen lignified with pectosic transverse septa, thin walled with only centra.[4]

Schematic diagram

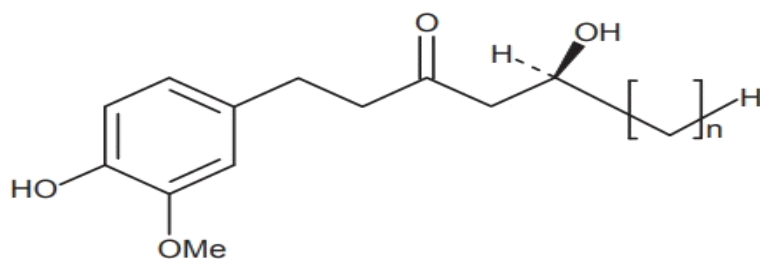
T.S of Ginger rhizomes

CULTIVATION

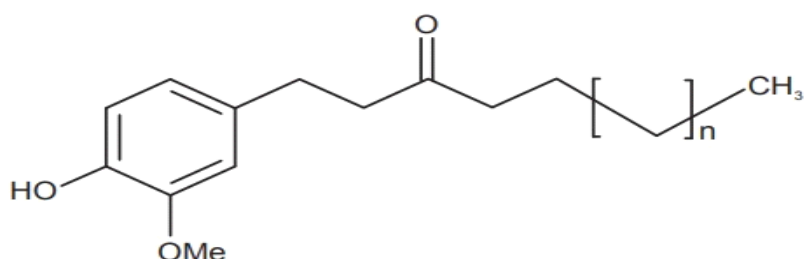
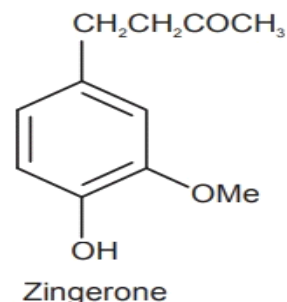
The ginger is vascular plant that grow up to 1m .This is cultivated on height of 600 to 1500m above sea level. The rhizomes are cut in pieces and it's cultivates than the all pieces continue a bud is planted into trenches in well drained and loamy soil in March or April months. The plant of ginger is required to the 80cm rainfall annually and if rainfall the sufficient water are supplied by watering. The collection of ginger is done in December or January for the plants dry up after flowering period. The rhizomes of ginger are the carefully discover , lofty steams , fibrous roots and buds are removed.

The ginger is washed and remove mould and soil . The rhizomes on flat surface as well as washed thoroughly between the running water. These is dried completed by keeping the sun rays, it is covered over night, and in rainy and cloudy seasons. The moisture are present in ginger, the drug may become moulds, after drying ginger is loses above 70% of it's weight.[4]

CHEMICAL CONSTITUENTS



Gingerols (n = 0,2,3,4,5,7,9)



Shogaols (n = 4,5,7,9,10)

The ginger is consist with 1-2% of volatile oil, 5-8% pungent principle, starch and resinous mass. Aromatic smell are responsible for volatile oil and it contains the Zingiberene 6% sesquiterpenes hydrocarbon zingiberol a sesquiterpene alcohol and besabolene. The gingerol are the chemical which is a yellow pungent oil liquid and give gingerone a ketone and aliphatic aldehyde. Shogaols and ginger are less pungent as compare the gingerol . The bitterness of ginger and gingerol is destroyed , which is boiled with 5%KOH or other alkaloids.[4]

PHARMACEUTICAL USES

The ginger is basically used for treatment of some types of "stomach problems," including motion sickness, morning sickness, colic ,upset stomach, gas ,diarrhea, irritable bowel syndrome (IBS), nausea, nausea caused by cancer treatment, nausea caused by HIV/AIDS treatment, nausea and vomiting after surgery, as well as loss of appetites.

Other uses of ginger-

- Pain relief from rheumatoid arthritis (RA)
- Osteoarthritis
- Menstrual pain
- Upper respiratory tract infection
- Cough
- Respiratory problems
- Migraine headache
- Bronchitis

- Diabetes
- Chest pain
- Low back pain
- Stomach pain
- Anorexia
- Stimulate breast milk
- Diuretic
- Increase sweating [2]

CONCLUSION

In this review literature we are concerned about the Ginger. It is widely used in medical field, spice and flavoring agent for foods. These contains various type of chemical constituents which are play the vital role in following diseases like cough, cold, nausea, morning sickness, motion sickness, migraine headache etc.

ACKNOWLEDGEMENT

I have express my special thanks to my respected professor who is provid me a golden chance at each and every steps. I have express my thanks to all of that who is involved directly and indirectly for completed this review. I have thanks to my respected parents who always supported us.

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