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A Review Literature On Ginger

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Abstract

Ginger (*Zingiber officinale*) is a flowering plant whose rhizome, ginger root or ginger, is widely used as a spice and a folk medicine. Ginger is loaded with antioxidants, compounds that prevent stress and damage to your body's DNA. They may help your body fight off chronic diseases like high blood pressure, heart disease, and diseases of the lungs, plus promote healthy aging. Doctors recommend consuming a maximum of 3–4 grams of ginger extract per day. If you're pregnant, don't consume more than 1 gram of ginger extract per day. Ginger is not recommended for children under the age of 2. The first written record of ginger comes from the Analects of Confucius, written in China during the Warring States period (475–221 BC). Though it is grown in many areas across the globe, ginger is "among the earliest recorded spices to be cultivated and exported from southwest India".

Key Words- Zingiber officinale, Rhizome, Ginger, Anti-inflammatory, Resins.

Introduction

Ginger the root of the plant *Zingiber officinale* roscoe that belongs to the family *Zingiberaceae*, is globally one of the most commonly used spice and medicinal agent. The plant is known as Sringavera in Sanskrit and it is speculated that this term may have given way to Zingiberi in Greek and then to the Latin term Zingiber (Vasala, 2004) (1). Ginger is loaded with antioxidants, compounds that prevent stress and damage to your body's DNA. They may help your body fight off chronic diseases like high blood pressure, heart disease, and diseases of the lungs, plus promote healthy aging. Powdered ginger is the buff-coloured ground spice made from dried root (2). Preserved or 'stem' ginger is made from fresh young roots, peeled and sliced, then cooked in a heavy sugar syrup. The ginger pieces and syrup are canned together. They are soft and pulpy, but extremely hot and spicy. Ginger, ginger rhizome, and its major active components: 6-gingerol, 6-shogaol, and 6-paradol (3). The aromatic constituents include zingiberene and bisabolene, while the pungent constituents are known as gingerols and shogaols (4).

Synonyms- Ginger root, Black Ginger, Zingiberic rhizome, Zingiber, Zingiberis

Biological source- Ginger consist of the dried rhizomes of *Zingiber officinale* Roscoe.

Botanical Classification-

Kingdom: Plantae

Subkingdom: Tracheobionta

Superdivision: Spermatophyta

Division: Magnoliophyta

Class: Liliopsida-Monocotyledons

Subclass: Zingiberidae

Order: Zingiberales

Family: Zingiberaceae

Genus: Zingiber P. Mill

Species: Zingiberofficinale Roscoe.

Fig- Ginger (*Zingiber officinale*)



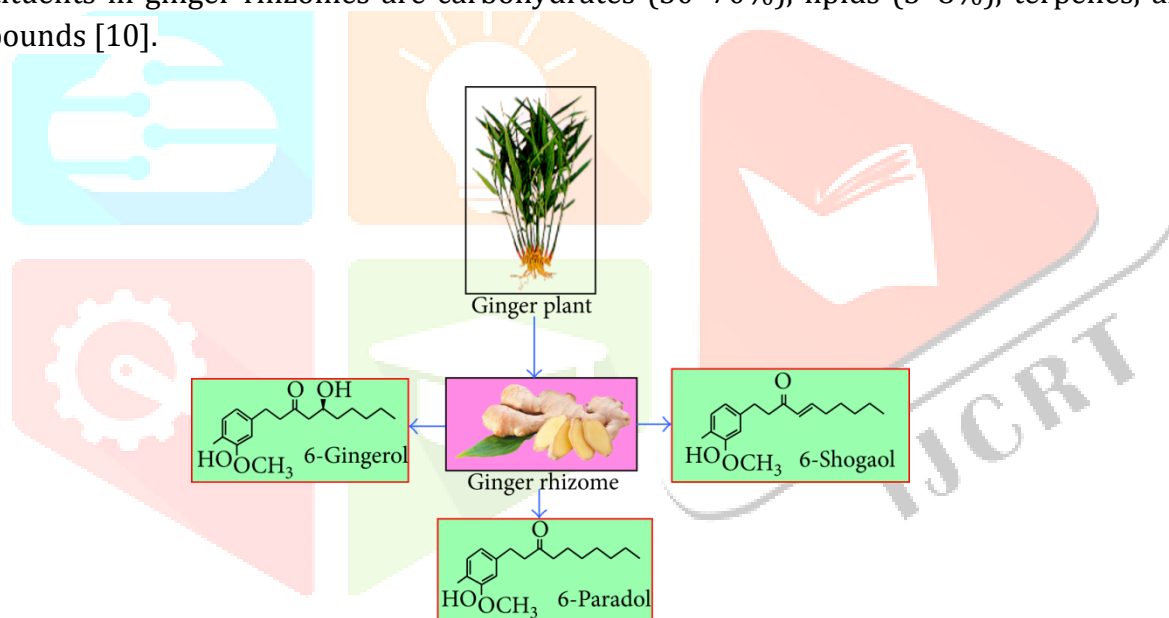
History & Origin

Ginger first appeared in the southern parts of the ancient China. From there, it spread to India, Maluku Islands (so-called Spice Islands), rest of the Asia and West Africa. Europe saw ginger for the first time in the 1st century when the ancient Romans traded with the India(2,5).Ginger, (*Zingiber officinale*), herbaceous perennial plant of the family Zingiberaceae, probably native to southeastern Asia, or its aromatic, pungent rhizome (underground stem) used as a spice, flavouring, food, and medicine(6). An early form of gingerbread can be traced to the ancient Greeks and Egyptians who used it for ceremonial purposes. Gingerbread made an appearance in Europe when 11th-century Crusaders brought back ginger from the Middle East for the aristocrats' cooks to experiment with (7).The first written record of ginger comes from the Analects of Confucius, written in China during the Warring States period (475–221 BC). In it, Confucius was said to eat ginger with every meal. In 406 AD, the monk Faxian wrote that ginger was grown in pots and carried on Chinese ships to prevent scurvy (8) .During the Song Dynasty (960–1279), ginger was being imported into China from southern countries. Ginger first appeared in the southern parts of the ancient China. From there, it spread

to India, Maluku Islands (so-called Spice Islands), rest of the Asia and West Africa. Europe saw ginger for the first time in the 1st century when the ancient Romans traded with the India. Ginger originated from Maritime Southeast Asia. It is a true cultigen and does not exist in its wild state (2,9). The most ancient evidence of its domestication is among the Austronesian peoples where it was among several species of ginger cultivated and exploited since ancient times. The ginger plant itself is a perennial that grows from 1- 3 feet in height. Its lush green spears sprout from thick underground rhizomes (10).

Chemical Composition-

Chemical analysis of ginger shows that it contains over 400 different compounds. ... Ginger, ginger rhizome, and its major active components: 6-gingerol, 6-shogaol, and 6-paradol. The aromatic constituents include zingiberene and bisabolene, while the pungent constituents are known as gingerols and shogaols. Ginger extract reduces biofilm formation for various bacteria including some Gram-positive (e.g., Staphylococcus aureus and Bacillus megaterium) and Gram-negative bacteria (e.g., Escherichia coli and Pseudomonas aeruginosa)(6,11).Ginger extract reduces biofilm formation for various bacteria including some Gram-positive (e.g., Staphylococcus aureus and Bacillus megaterium) and Gram-negative bacteria (e.g., Escherichia coli and Pseudomonas aeruginosa)(11,12).The major constituents in ginger rhizomes are carbohydrates (50–70%), lipids (3–8%), terpenes, and phenolic compounds [10].



Terpene components of ginger include zingiberene, β -bisabolene, α -farnesene, β -sesquiphellandrene, and α -curcumene, while phenolic compounds include gingerol, paradols, and shogaol. The ginger oil contains a mixture of constituents such as monoterpenes, namely phellandrene, camphene, cineole, linalool, limonene, citral, geraniol, citronellol, borneol and sesquiterpenes, namely α -zingiberene, α -curcumene, β -bisabolene, β -sesquiphellandrene, zingiberol and zingiberenol along with some aliphatic aldehydes and alcohols (12). The characteristic fragrance and flavor of ginger result from volatile oils that compose 1-3% of the weight of fresh ginger, primarily consisting of zingerone, shogaols, and gingerols with [6]-gingerol (1-[4'-hydroxy-3'-methoxyphenyl]-5-hydroxy-3-decanone) as the major pungent compound. Fresh ginger also contains an enzyme zingibain which is a cysteine protease and has similar properties to rennet(13).

Pharmacological Activities of Ginger

The main pharmacological actions of ginger and compounds isolated therefrom include immuno-modulatory, anti-tumorigenic, anti-inflammatory, anti-apoptotic, anti-hyperglycemic, anti-lipidemic and anti-emetic actions(14).

- **Lowering cancer risk:**

Ginger does not provide protein or other nutrients, but it is an excellent source of antioxidants. Studies have shown that, for this reason, ginger can reduce various types of oxidative stress. Oxidative stress happens when too many free radicals build up in the body. Free radicals are toxic substances produced by metabolism and other factors. Researchers found that ginger was very effective in blocking prostate cancer cells and their growth. However, due to its anti-inflammatory properties, it is able to reduce your risks of having cancer (3,15).

- **Reduces Cold and Flu:**

Winter is the best climate to sip a hot cup of ginger tea and this will automatically stabilize your body condition and keep you warm. It enables you to sweat once you consume it and this is said to be good for your body. So, if you are suffering from a bad cold and flu all you need to do is to prepare some ginger tea and you will feel better in no time (7,16).

- **Good for Heart:**

Ginger is good for your heart such that it reduces cholesterol and lowers your risk of having any sort of blood clots. Most importantly, it regulates blood sugar levels. Ginger can in future become an integral medicine for treating diabetes and heart diseases. So, a little bit of ginger added to your everyday diet can work the trick of keeping your heart healthy (1,17).

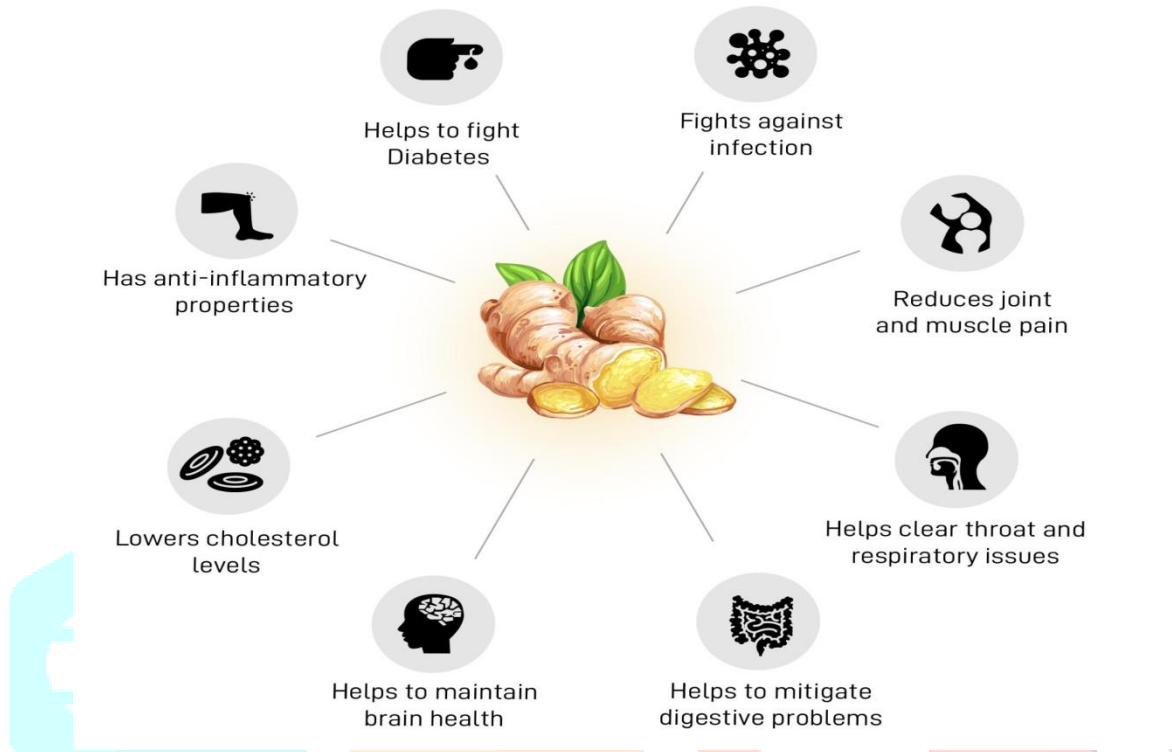
- **Treats Inflammation:**

Inflammation is said to be the process wherein white blood cells protects us from infection and viruses. But sometimes this may go wrong and cause severe joint pain and so forth. In this process, your bodies immune system begins to cause damage to its own tissues thus resulting in inflammation. Ginger consists of anti-inflammatory components and antioxidants that can cure inflammation (18).

- **Ginger Improves Brain Functionality:**

The anti-inflammatory properties available in ginger can also keep you alert and helps in good brain functionality. It basically increases your presence of mind. Ginger root can improve cognitive function as per a study by the Evidence-Based Complementary and Alternative Medicine (12).

8 FANTASTIC HEALTH BENEFITS OF GINGER



- **Treats Muscle Pain:**

Ginger is said to cure muscle pain and all you need to do is to consume 2 grams of ginger may it be in the form of powder or paste, you will witness the difference within 11 days. Also, it is advised that you conduct some simple elbow exercises in order to experience speedy relief. It may not have a faster impact, instead, it is a much safer way in which you can stay away from side-effects that western medicines offer(18).

- **Prevents Nausea:**

If you have vomiting sensation then you need to ginger as a natural home remedy to prevent it. All you need to do is to chew some raw ginger or simply sip some hot cup of ginger tea and this will cure you of nausea and reduce your risks of having cancer. If you are suffering from nausea due to motion sickness, then ginger again plays the trick. The best part about ginger is that it is best to use even when you pregnant and it prevents nausea quite well(5,7).

Side Effects & Rick

- Gas
- Heartburn
- Upset stomach
- Mouth irritation
- Diarrhea
- Burping
- Nausea
- Unsafe During Pregnancy
- Causes bleeding
- Affects heart(20).

Conclusion

Ginger is an ancient herb used widely in history for its many natural medicinal properties and particularly as an antiemetic. The best available evidence demonstrates that ginger is an effective and inexpensive treatment for nausea and vomiting and is safe.

This marvelous spice and medicinal plant, ginger, is constrained severely by the absence of seed set, and the breeder is left with the alternative of clonal selection or induced mutations with all its uncertainty and limitations.

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