

**Journal of Pharmaceutical Advanced Research****(An International Multidisciplinary Peer Review Open Access monthly Journal)**Available online at: [www.jparonline.com](http://www.jparonline.com)***Zingiber zerumbet* (linn.): Traditionally important Medicinal Plant****Abinash Kumar Sahu<sup>1\*</sup>, Ranjan Kumar Sahoo<sup>1</sup>, P.Sudhir Paidsetty<sup>2</sup>**<sup>1</sup>Department of Medicinal Chemistry, The Pharmaceutical College, Tingipali, Barpali, Bargarh - 768029, Odisha, India.<sup>2</sup>Dept. of Medicinal Chemistry, School of Pharmaceutical Sciences, 'SOA' University, Bhubaneswar, Odisha.

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**ABSTRACT:** This *Zingiber zerumbet* (syn: *Ammomum zerumbet*) is better known as wild ginger or bitter ginger. This plant was previously introduced by early Polynesians but they are native to Asia (India) and also widely distributed east-ward through Polynesia. All the parts of the pine cone ginger were spicy and fragrant. It is smooth, erect, herbaceous plant. This plant is found to contain many flavonoids and alkaloids. Traditionally this plant is used as fish poisoning, cough suppressant, anti-bacterial, anti-diabetic, in many treatments of skin diseases. The *Z. zerumbet* also used as anti-hypertensive, carminative, flavorant, anti-leprosy, used as shampoo and perfumes. This plant pharmacologically reported as anticancer, anti-tumor, anti-inflammatory, anti-microbial and anti-fungal activities.

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**INTRODUCTIONS:**

Medicinal herbs contain substances known to modern and ancient civilizations for their healing properties. Until the development of chemistry and particularly of the synthesis of organic compounds in the 19 century, medicinal plants and herbs were the sole source of active principles capable of curing man's ailments. They continue to be important to people that do not have access to modern medicines and moreover modern pharmaceuticals rely heavily on the same active principles, be they natural or synthetic. The active principles differ from plant to plant due to their biodiversity i.e. to the plant's genetic coding ability to

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produce them. With thousands of active principles yet to be discovered or fully evaluated. The genetic material of old and new herbs and plants are coveted for their potential in discovering, combining, manipulating and synthesizing new medicine. Thus, even if people are not aware of or the pharmaceutical industry does not stress the point, medicinal plants and medicinal herbs continue to be the source of proven medicaments and of new and revolutionary drugs. If the active principles of synthetic drugs are so important and can be found in many plants and herbs, cheaply and easily bought at your home market or Herbalist, why not use them? While many medicinal herbs contain powerful compounds that, if used correctly, can heal. Not all plants are necessarily safe or useful. Medicinal plant is the local heritage with the global importance world is endowed with a reach wealth of medicinal plants. So the proper understanding of the medicinal plants for mankind requires the proper scientific explanation so that these medicinal plants have been the crucial sustaining the health and the well being mankind. So one of the medicinal plant *Zingiber zerumbet* is also a very important medicinal plant for the mankind which shows many pharmacologically as well as therapeutically effective for the different purposes <sup>[1-3]</sup>.

#### PLANT PROFILE:

This *Zingiber zerumbet* (syn: *Ammomum zerumbet*) is widely cultivated in mainly tropical and sub tropical areas around the world. It is smooth, erect, herbaceous plant <sup>[4-7]</sup>. The juice of the boil rhizomes of this plant also can be used for worm infection in the children <sup>[6]</sup>. This also can be used for cure for swelling, sores and for loss of appetites <sup>[7]</sup>. This habit of this wild ginger grows besting the lower part of the damp, open forest and can form continuous ground lower <sup>[6-7]</sup>. It needs worm or wet and shade darkish region on wind words sides of islands where rain fall is plentiful. It is smooth, erect, herbaceous plant <sup>[6-7]</sup>. The root stocks are tuberous and pale yellow with in. The leaf stem is 0.6 to 2.0 m high. The leaves are numerous and long narrow types that they are distichous, lanceolate, 15 to 30 cm long, 5 to 8 cm wide and leaves are oppositely arranged. The flowering stem which directly grows from the root stock in late summer resembles pine cones. The green cone turns red over a couple of weeks and then small creamy flowers appear on the cone. The flower stems clothed with long ,appressed, obtuse sheath bearing at its apex an ovoid to oblong or cylindrical green or red spike 5 to 20 cm long. The bract are numerous, imbricate or bicular, 2 to 3 cm

long greenish merging in to red and holding water. The fruit is oblong red color and about 2.5 cm in length. The seeds are oblong and 4 mm in diameter. Typically this plant is a multi trunk or clumping stem <sup>[7]</sup>.



Fig 1. The growing Plant *Z. zerumbet*.



Fig 2. The flower of *Z. zerumbet*.



Fig 3. Rhizome of *Z. zerumbet*.

**TAXONOMICAL CLASSIFICATION** <sup>[5, 6]</sup>:

Botanical name	: <i>Zingiber zerumbet</i>
Synonym	: <i>Amomum zerumbet</i> <sup>[2]</sup>
Family	: <i>Zingiberaceae</i>
Genus	: <i>Zingiber</i>
Growth habitat	: Forbs
Kingdom	: Plantae
Subkingdom	: Tracheobionta
Super division	: Spaermatophyta
Division	: Magnoliophyta
Class	: Liliopsida
Sub class	: Zingiberidae
Order	: Zingiberales

**CULTIVATION:**

This “pine cone ginger” is cultivated in large clumps from or single rhizome in a couple of years. It grows easily with the providing of sufficient moisture and fertile organic soil. This will require full sun to partial shade, which requires regular moisture to fairly wet soil <sup>[5]</sup>. The pH of the soil should be 6.1 to 6.5 (mild acidic). It is generally propagated by division of clumps or pieces of rhizomes <sup>[5]</sup>.

**CHEMICAL CONSTITUENTS:**

This plant is found to contain many flavonoid and alkaloid. Some of the major chemicals isolated from this plant are as follows. It contains many alkaloid as <sup>[7-9]</sup> Camphene, camphor and monoterpenoids as gingerol, zingerone, sesquiterpenoids zerumbone, zerumbone epoxide, oxalic acid, kaempferol derivative terpine. Humulene. Flavonoids <sup>[3, 7-9]</sup> as many flavonoids group are also found to be present in this plant which is as follows that are afzelin, flavonoid glycosides, essential oils, chlorogenic acid and ferulic acid.

**TRADITIONAL USES:**

This drug has different uses in the traditional as well as pharmaceutical purposes. Traditionally this can be used as follows as fish poisoning <sup>[6]</sup>, as a cough remedy <sup>[6]</sup>, to treat many bacterial diseases <sup>[6]</sup>, to treat diabetes <sup>[6]</sup>, to treat skin diseases <sup>[12]</sup>, the juice of the plant can also be used to quench thirst when out walking in the forest and can be combined with the mountain apple as a meal <sup>[12]</sup>, the juice of the boiled rhizomes also can be used for worm infection in the children <sup>[12]</sup>, this also can be used for cure for swelling, sores and for loss of appetites <sup>[3]</sup>. The rhizome part of the plant can be used as for the stimulating action <sup>[6]</sup>, it is used for anti-hypertensive action <sup>[6]</sup>, it is used for carminative purpose <sup>[6]</sup>, it is used

for flavoring purpose <sup>[6]</sup>, it is used for perfume purpose i.e. generally the rhizome part is powdered and used as a perfume <sup>[12]</sup>, it is used as shampoo i.e. the swollen end of the club shaped stem are gathered even today and squeezed over the pulverized to liberate their fluid for the preparation of the shampoo <sup>[6]</sup>, it is also used to treat dyspepsia wound treatment and for hemorrhoids and flatulent colic for the cure of the stomach trouble and fever <sup>[6]</sup>. It is used for the treatment for leprosy <sup>[12]</sup>. It is used for peptic ulcer treatment and for other stomach problems and for mouth infection <sup>[6]</sup>. In Philippines a decoction is prescribed for the treatment of asthma and in tropical in rheumatism purpose <sup>[12]</sup>.

**Pharmacological uses:**

Some of the potent pharmacological activities of this plant *Z. zerumbet* as anti-cancer effects, anti-tumor effects, anti-inflammatory effects, anti-fungal activity, anti-microbial activity of zerumbone, anti-bacterial activity, anti-hyperglycemic activity has been reported from different literature survey studies <sup>[13-16]</sup>.

**CONCLUSION:**

This article review helps to study a good literature survey of this plant with many medicinal properties. This is to be focused in many researches in pharmacy and other branches. It has many effects as anti-helminthic, anti-cancer, anti-tumor, anti-inflammatory, anti-microbial, antifungal, antibacterial, anti-hyperglycemic activities showing *Zingiber zerumbet* as a future herbal effect for herbal medicines.

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