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Amazing Benefits of *Gaultheria fragrantissima* (Wintergreen) on Human Health

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Abstract

G*aultheria fragrantissima* or Wintergreen plant which has been long used in India for Ayurvedic medicines, harbour essential oils with various uses and cures. It's cultivation in the diverse flora of Indian biotic sphere across the geographical variation, extraction or the artificial manufacturing, it's dosage and description, availability and conclusion gets a light of discussion hereby.

Introduction

In this world of fast pace and growth we have really come so far. Humans as they are today can do almost anything which they desire to. Nature seems like under our control. But as everything flourished so did the wide array of problems. Major being the health. It's no surprise that human beings have been dealing with various ailments since ages but recently both the pathogens and bad food habits have gotten stronger and increased respectively.

Although medical science is now advanced with cures almost all diseases and disorders except major few. But despite of these modern advancements doctors and scientists today vouch for some traditional herbal methods of dealing with low grade ailments. We are aware of traditional Ayurvedic School of medicine practiced in India since antiquity.

What if I tell you there is a herb practically being used in India since ages for various medical conditions from simple knee pain and back ache to arthritis.

Yes, no kidding but it is no rocket science. "*Gandhapura*" (*Gaultheria fragrantissima*) or simply Indian winter green tree in English, which is native to Himalaya mainly Central and Eastern, Nilgiri and north eastern Khasi hills. It is an Evergreen plant found even at the height of 5000 to 6000 meters and bears flower with white purplish color. The leaves of Wintergreen contain aromatic essential oils. It is aromatic primarily due to the presence of methyl salicylate, which is extracted through fermentation and steam distillation process of the material. Beside it also contains methyl salicylate derivatives, terpenes and steroids (Zhiping et al., 2018).

Methyl salicylate is an organic ester, which is a topical analgesic parallel to aspirin in treating sprains, aches, and pain. Apparently they are used to prepare many pharmaceutical creams for topical use for extreme and mild pain.

So to begin with let's see some uses of Wintergreen oil (Figure 1).

Uses of *Gaultheria fragrantissima*

➤ **For Pain or Sprain:** As mentioned methyl salicylate which is the chief component of Wintergreen Oil is an effective

analgesic and helps minimalizing inflammatory reactions in the body leading to pain (Wei-Rui *et al.*, 2013). So creams or sprays containing the oil can be a good reliever for the same. It fulfills its pharmaceutical purposes. Its anti-inflammatory abilities also work well against skin issues, fever, bacterial pathogenic infections and also tooth conditions.



Figure 1: Wintergreen plant & its leaves

- **As An Ingredient for Flavor:** In many fast food industry products several factories manufactured food like chewing gums, mints, candies, beer and other beverages contain Wintergreen oil to give fresh and exotic taste. It is also used in mouth cooling products, mouth freshness and toothpastes due to its scent.
- Apart from this, Wintergreen oil also has some insect repelling properties. It is an effective insecticide antiseptic fumigant used in treating dermatitis linearism in humans. Wintergreen oil showed significant insecticidal activity against *P. fuscipes* by inhibiting acetyl hydrolase or acetylcholinesterase (AChE) activity when it was tested in vivo at different levels (Zhiping *et al.*, 2018).
- Wintergreen extracts has also shown positive results in treating chronic conditions like asthma, and gout. Presence of EtOAc and n-butanol extracts in Gaultheria reduces the joint swellings remarkably, and can help in the treatment of rheumatoid arthritis (Zhiping *et al.*, 2018).
- It can be beneficial for women having to deal with dysmenorrhea or menstrual cramps (Wei-Rui *et al.*, 2013).
- Other uses include to treat muscle soreness and even to treat kidney stones. This however is not backed by enough scientific research and testings (Wei-Rui *et al.*, 2013).
- Wintergreen oil has brilliant antioxidant properties. Antioxidant activity can be seen in Gaultheria through ABTS and DPPH radial scavenging activities (Wei-Rui *et al.*, 2013).
- It also finds a place for its peculiar use in painting and printing applications.
- It fulfils its pharmaceutical purposes by having anti-inflammatory abilities also against skin issues and tooth conditions (Zhiping *et al.*, 2018).
- **Bacterial pathogenic infections:** Due to the presence of EtOH extracts, EtOAc and n-butanol from the roots and stem

parts of Gaultheria plants, it shows particular anti-bacterial activities towards bacteria like *Staphylococcus aureus*, *Pseudomonas aeruginosa*, *E. coli*. These anti pathogenic activities source its uses in common cold and feverish conditions too (Zhiping *et al.*, 2018) (Figure 2 and 3).



Figure 2: Inflorescence of Wintergreen

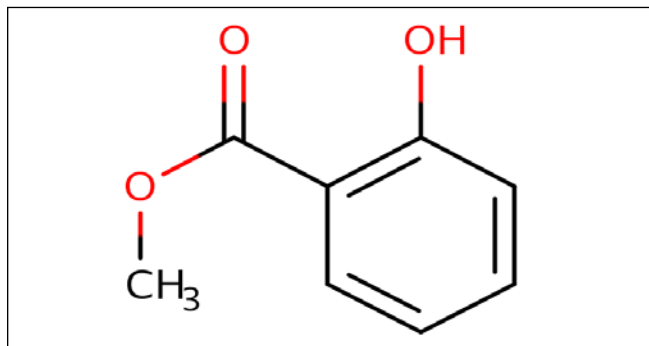


Figure 3: Structure of Methyl salicylate

Despite its wide array of applications, the scientific work however regarding effectiveness of the oil in some of its uses is mostly anecdotal. The therapeutic properties of the oil are mostly due to the acid which is a proven NSAID. It being aromatic with tint of refreshment also makes it an ancillary to tea and other beverages.

Beside its natural source today artificial Wintergreen oil is also available mainly due to the oil being mostly methyl salicylate in its purest form (95%), which can be artificially produced too.

Description and Direction of Use

Description

- Wintergreen oil is aromatic and pale yellow pinkish in colour.
- It is sweet and has woody odour.

Direction of Use

- Methyl salicylate can be toxic if taken more than the required amount. So proper care should be taken. It is 6 times more powerful than an adult aspirin tablet. 1 milliliter or 20 drops of it is equal to 1860 mg of aspirin.
- Particular care should be taken while using for pregnant ladies and people with allergic reactions to aspirin. It should never be used for children so should be safely contained in childproof bottles.
- Wintergreen oil sometimes shows reactivity towards Warfarin (Coumadin), a blood clotting agent. Wintergreen oil hinders the clotting process of blood so people with bleeding disorders like haemophilia should avoid using it.
- Wintergreen oil should not be ingested without being prescribed as it can be poisonous in inappropriate amounts.
- It should be diluted before use with other oils such as grape seed oil and should not exceed 2 to 5% of the solution.

Where to Look For the Oil?

Many E-commerce platforms have wintergreen oil; both natural and artificially manufactured one's available with them (Figure 4).



Figure 4: A representative image of wintergreen essential oil

It's important however to look for the authentic one's by checking the labels and the smell which should be sweet and woody in odour in pure form.

Conclusion

Wintergreen oil which has been used since ages can be very effective against many low grade medical conditions and has also shown effectivity towards other major conditions. Realizing its economic and pharmaceutical value, it must be encouraged to be farmed in India. With greater benefits also come some serious responsibilities so that saying its use and dozes should be controlled as per prescribed.

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