

ETHNO-BOTANICAL ASPECTS OF *Zingiber officinale* Rosc.Shambhu Kr. Gupta¹, Rohit Sharma², Rahul Sharma³, S. K. Pandey⁴Key words : Ethnobotanical aspects, *Zingiber officinale*

The medicinal plants find application in pharmaceutical, cosmetic, agricultural and food industry. The efficacy of some herbal products is well established, the most recent examples being *Centella asiatica* (Apiaceae), *Plumbago zeylanica* (Plumbaginaceae), *Vernonia cineria* (Asteraceae) and *Tinospora cordifolia* (Menispermaceae).

Randomized controlled trials have proved the efficacy of some established remedies, for instance, *Zingiber officinale* (Zingiberaceae) commonly known as ginger. After extensive pharmacological studies, it has been concluded that ginger has significant anti-inflammatory, anti emetic and chemo-protective effects.

INTRODUCTION

Zingiber officinale is a creeping perennial with thick tuberous rhizomes spreading underground. In the first year, a green erect reed like stem grows about 60 cm tall. The plant has narrow lanceolate to linear - lanceolate, 20-30 cm long leaves which die off each year. The odour and taste are characteristically aromatic and pungent.

Ginger valued as a spice has been used through the ages in almost all systems of medicine against many a maladies. The smell and taste of the drug are aromatic. The parts of the plant used in drugs are rhizomatous rootstock.

It is now recognized as a drug of choice for nausea and vomiting. It has been found useful in pregnancy related morning sickness, in rheumatoid arthritis and is also used as a natural pain reliever and an anti-inflammatory agent. It is also valuable in curing ulcer and preventing heart attack among ageing persons.

MATERIALS AND METHODS

The rhizomes of *Zingiber officinale* were procured from vegetable market and preserved in exposed dark atmosphere. The drugs were prepared in the form of infusion, decoction, tablets, capsules etc.

RESULTS AND DISCUSSION

The present communication provides a comprehensive account of important medicinal properties of the rhizome of this versatile herb.

PHYTOCHEMISTRY : The rhizome of *Zingiber officinale* is a rich source of volatile oils, viz., zingiberol, zingiberene, phellandrene and linalool. They all account for the aroma of the drug. The pungence of the rhizome is due to the presence of gingerols and shogaols. Investigations have shown gingerol and shogaols as mutagenic (Nagabhushan *et al.*, 1987). In addition, it contains diarylheptanoids and gingerenone (Kikuzaki *et al.*, 1991).

PHARMACOLOGICAL ACTIVITIES : Folk-lore have been found to indicate that the infusion of dried rhizome or its decoction are used as carminative, expectorant and astringent. Various pharmacological effects of the rhizome are as below :

Hypolipidemic : The effects of ethanolic extracts of rhizome have been studied in cholesterol fed rabbits. The marked rise in serum and tissue cholesterol, serum triglyceride, serum lipo-proteins and phospholipids that followed 10 weeks of cholesterol feeding, was significantly reduced by the ethanolic ginger extract and results were compared with Gemfibrozil, an effective hypolipidemic drug (Bhandari *et al.*, 1998).

Anti-emetic : Cisplatin causes nausea, vomiting and inhibition of gastric emptying. In a study, acetone and ethanolic extracts of ginger demonstrated anti-emetic effect against cisplatin induced emesis in dogs. (Bone *et al.*, 1990).

Anti-inflammatory : The inhibitors of prostaglandin biosynthesis are directly associated with anti-inflammatory and anti-platelet aggregation activities (Couch *et al.*, 1992). The rhizome of ginger contains potent inhibitors against prostaglandin biosynthesizing enzyme (PO Synthetase). This also accounts for rational use of the drug in arthritis and rheumatism. Oral administration of eugenol, a major component of clove oil and ginger oil, to rats following induced severe arthritis in the paw and knee gave positive results. The oil was given for 20 days which caused a significant suppression of paw and joint swelling.

CONCLUSION

Medicinal herbs are rich source of synthetic and herbal drugs. They contain a wide range of chemical compounds, commonly referred to as phytochemicals. Ginger's potential as an effective anti-inflammatory and anti-emetic agent cannot be ruled out. Gingerol, the active constituent of ginger, has been isolated and studied for pharmacological effects.

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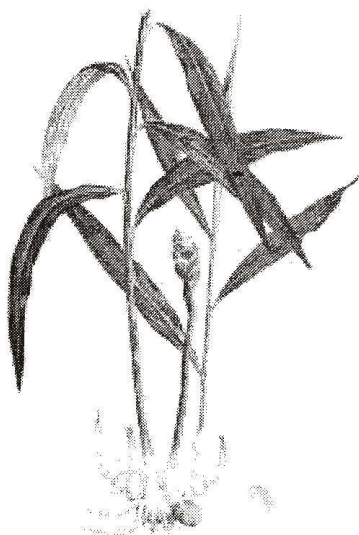


Fig.1 : A plant of *Zingiber officinale*

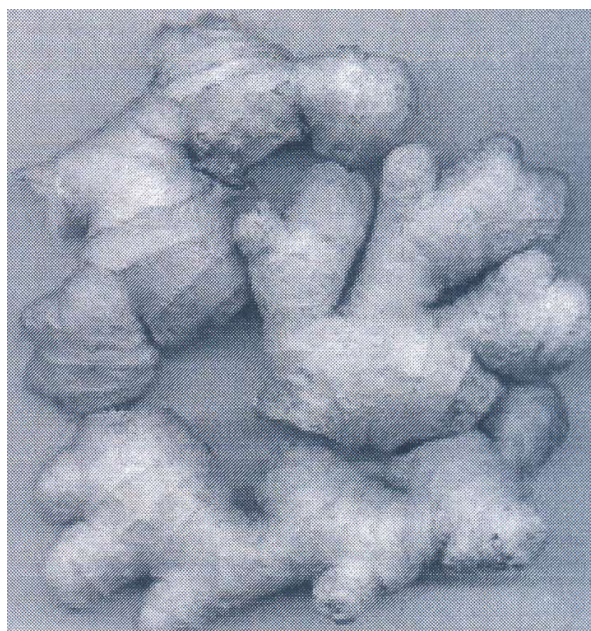


Fig.2 : *Zingiber rhizomes*

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