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C Sri Datta Harshitha
PG Scholar, Department of Post Harvest Management, College of Horticulture, Dr. YSR Horticultural University, VR Gudem, Andhra Pradesh, India

V Sudha Vani
Professor and Head, Department of Post Harvest Management, College of Horticulture, Dr. YSR Horticultural University, VR Gudem, Andhra Pradesh, India

B Tanuja Priya
Principal Scientist (Horticulture), Horticultural Research Station, Lam, Guntur, Dr. YSR Horticultural University, Andhra Pradesh, India

RV Sujatha
Associate Professor, Department of Ag. Economics, College of Horticulture, Dr. YSR Horticultural University, VR Gudem, Andhra Pradesh, India

A Vijaya Kumar
Assistant Professor and Head, Department of Veterinary Public Health and Epidemology, College of Veterinary Science, Rajendra Nagar, P.V. Narasimha Rao Telangana Veterinary University, Telangana, India

Corresponding Author:
C Sri Datta Harshitha
PG Scholar, Department of Post Harvest Management, College of Horticulture, Dr. YSR Horticultural University, VR Gudem, Andhra Pradesh, India

Standardization of essential oil from fresh and dried leaves of Turmeric

C Sri Datta Harshitha, V Sudha Vani, B Tanuja Priya, RV Sujatha and A Vijaya Kumar

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Abstract
The present study on the "Standardization of essential oil from fresh and dried leaves of turmeric" was conducted at Horticultural Research Station, Lam, Guntur, Dr. YSR Horticultural University, Andhra Pradesh during the year 2023-24. In the present investigation, from the turmeric leaves essential oil is extracted through Clevenger apparatus for about 6 hours. The essential oil extracted from the dried leaves yielded about 1.3% whereas fresh leaves yielded about 0.8%.

Keywords: Essential oil, turmeric, curcuma longa, fresh leaves

Introduction
Turmeric (*Curcuma longa* L.) is an herbaceous perennial plant belonging to the Zingiberaceae family. *Curcuma* genus contains about 30 species. It originates from India and South East Asia and cultivated in the majority of tropical countries. The leaves of Curcuma species, which are known to be aromatic, are wasted during post harvest processing of the rhizomes. They are aromatic and contain an oil.
Studies have shown that turmeric leaves are excellent source of bioactive compounds which help in the prevention of diseases such as cancer and premature aging (Chan *et al.* 2009, Priya *et al.* 2012) [3, 6]. In Brazil, leaves are discarded during the cultivation of the rhizome thus, generating waste with great nutritional potential.
Crushed turmeric or haldi leaves can helps in boosting digestion and reduce problems of gas and bloating, has strong anti-inflammatory properties, beauty benefits, antiseptic properties.

Materials and Methods
The present investigation entitled "Standardization of essential oil from fresh and dried leaves of Turmeric" was carried out at Horticultural Research Station, Lam, Guntur, Dr. Y.S.R Horticultural University. Raw material such as turmeric leaves harvested at the 40-50 Days after sowing.
After harvesting, the leaves are immediately washed under running tap water for the removal of dust and dirt present on the leaves. In case of fresh leaf essential oil the leaves are cut into small pieces and placed in Clevenger apparatus for essential oil extraction whereas in dried leaf essential oil after washing the leaves are placed in shade for 10 minutes and they are packed in brown envelope covers for drying. The leaves are dried in hot air oven at a temperature of 65 ºC for a period of 3 hours. After drying, the leaves are cut into small pieces and are placed in Clevenger apparatus for essential oil extraction.

Essential oil extraction
Turmeric leaf essential oil content was obtained by hydro distillation with clevenger apparatus held to a round bottom flask. About 50 g of dried turmeric leaf powder was transferred quantitatively in 2000 ml flask. 500 ml of water was added to flask fitted with an electrical heating mantle and clevenger apparatus with condenser. The stand rod and stand base were connected to heating mantle by clump holder. The flask was rotated occasionally to wash down

any material adhering to the upper part of the walls. Distillation was continued for 5 hours. Turmeric essential oil is lighter than the water and then it was collected from the top layer of the collector. All the oil and vapour mixture were condensed and collected by using separator funnel having volume count up to 15 ml reading and quantified as volume-weight basis. Average value of volatile oil content, on moisture free basis, expressed in the unit of ml/100g of sample was reported along with standard deviation values.

Results and Discussion

1. **Essential oil recovery (%):** The fresh leaf essential oil recovered 0.8% of essential oil recovery percentage whereas the dried leaf essential oil recovered 1.3% of essential oil. The
   Results showed similar findings in Leela *et al.* (2002) [4], Pande *et al.* (2006) [5], Awasthi *et al.* (2009) [1] in turmeric leaf essential oil.
2. **Sensory evaluation:** The sensory evaluation includes the colour, flavour and viscosity

Table 1: Sensory evaluation of essential oils

Type of essential oil	Colour	Flavour	Viscosity
Fresh leaf essential oil	Light green	Mild spicy	Thick
Dried leaf essential oil	Light yellow	Less spicy	Thin

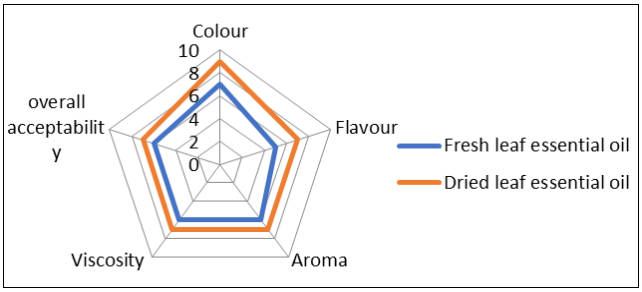

Fig 1: Graphical Representation of Sensory evaluation

Conclusion

In this study, the dried leaf essential oil is more in quantity than the fresh leaf essential oil.

Acknowledgments

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References

1. Awasthi PK, Dixit SC. Chemical composition of *Curcuma longa* leaves and rhizome oil from the plains of Northern India. J Young Pharm. 2009;1(4):312-316.
2. Babu GD, Shanmugam V, Ravindranath SD, Joshi VP. Comparison of chemical composition and antifungal activity of *Curcuma longa* L. leaf oils produced by different water distillation techniques. Flavour Fragr J. 2007;22:191-196.
3. Chan EWC, Lim YY, Wong SK, Lim KK, Tan SP, Lianto FS, et al. Effects of different drying methods on the antioxidant properties of leaves and tea of ginger species. Food Chem. 2009;113:166-172.
4. Leela NK, Tava A, Shafi PM, John SP, Chempakam B. Chemical composition of essential oils of turmeric (*Curcuma longa* L.). Acta Pharm. 2002;52:137-141.
5. Pande C, Chanotiya CS. Constituents of the leaf oil of *Curcuma longa* L. from Uttaranchal. J Essent Oil Res. 2006;18:166-167.
6. Priya R, Prathapan A, Raghu KG, Nirmala Menon A. Chemical composition and *in vitro* antioxidative potential of essential oil isolated from *Curcuma longa* L. leaves. Asian Pac J Trop Biomed; c2012. p. S695-S699.