



“To evaluate the Physical and Chemical Behaviour of Curry Leaf plant (*Murraya koenigii*) ”

Pre-Dissertation

Submitted to the Lovely Professional University

in partial fulfilment of the requirements

for the degree of

MASTER OF SCIENCE

in

AGRONOMY

By

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INTRODUCTION

Murraya koenigii, commonly known as curry leaf or kari patta in Indian language, belongs to family Rutaceae which represent more 150 genera and 1600 species. *Murraya koenigii* is highly value plant for its characteristic aroma and medicinal value. India is the largest producer and consumer of curry leaf. Burma, Malaysia, South Africa are also the producing curry leaf. The Southern state of Tamil Nadu is one of the major curry leaf producing area.

Bioactive compounds of curry leaf plant have been utilized by developing countries for primary and traditional health care system since very long period of time. Vast number of therapeutic applications such as in bronchial disorders, piles, vomiting skin diseases etc. The medicinal Utilities have be described especially for leaf stem bark and oil. *M. koenigii* is a unarmed, semi deciduous aromatic shrub or small tree with slender but strong woody stem and branches covered with dark grey bark, leaves are imparipinnate, glabrous, and very strongly aromatic, leaflets 9-25 or more, short, stalked alternate, gland dotted and strongly aromatic. The stem of *M. koenigii* is an aromatic and more or less deciduous shrub or small tree up to 6 meters in height and 15-40 cm in diameter. The main stem is dark green to brownish. The bark of the stem can be peeled off longitudinally which exposes the white wood underneath. Flowers are small, white, fragrant, ebracteate, calyx deeply five cleft, pubescent. Petals five, free, whitish, glabrous and with dotted glands. Fruits occur in close clusters, small ovoid or sub-globose, glandular, thin pericarp enclosing one or two seeds having spinach green colour.

Curry leaves usually have moisture: 66.3%; protein: 6.1%; fat (ether extract) 1.0%; carbohydrates: 16.0%; fibre: 6.4%; and iron: 3.1 mg mineral matter: 4.2% calcium: 810 mg. phosphorus 600 mg. carotene as vitamin A -12600 TU nicotinic acid -2.3 mg and vitamin C : 4 mg per 100 gills. Thiamine and riboflavin are absent. The leaves are a fair source of vitamin A. They are also rich source of calcium, but due to presence of oxalic acid in high concentration (total oxalates 1.35%, soluble extracts 1.15%) its nutrient availability is affected.

The chemical composition of green (fresh) curry leaves at 3 stages of maturity namely tender, medium and mature was determined recently at CFTRI, Mysore on Moisture free basis. The composition of leaves at these three stages is as follows. Protein; 5.44, 6.44 and 7.19%, fat: 3.3, 4.74 and 6.15%; sugar: 14.9, 17.9 and 18.9%; starch: 11.4, 14.2 and 14.6%; crude fibre: 5.8, 6.2 and 6.2%; volatile oil: 0.82, 0.55 and 0.48%; acetone extractive (oleoresin): 1.6, 1.4 and 1.3%; total ash (mineral matter): 12.54, 12.7 and 13.1% and acid in soluble ash: 1.2, 1.3 and 1.35 per cent.



OBJECTIVES

Keeping in view the existing scenario a field experiment has been conduct to study the Physical and Chemical properties (*Murraya koenigii*) through with the following objectives:

- 1) **To identify and elucidate the physical behaviour of *Murraya koenigii*.**
- 2) **To find out the effect of different INM treatments on physical and chemical properties of curry leaf plant.**
- 3) **To extract, isolate and purify chemical components from stem bark, leaves and roots of *Murraya koenigii*.**

REVIEW OF LITERATURE:

Sucheta *et al.*, (2015) conducted an experiment to find the effect of antioxidant enhancing property curry leaf powder in type 2 diabetes mellitus. He found out that the carotenoids and vitamin C present in curry leaves possess antioxidant property, which helps to neutralize and counteract the deleterious free radicals, the study evaluates the antioxidant potential of *Murraya koenigii*.

Dheeraj *et al.*, (2014) conducted an ethnobotany, phytochemical constituents and various pharmacological activities of crude extracts, fractions and isolated compounds which could lead to development of viable drugs for the treatment of variety of ailments.

Harish *et al.*, (2016) studied the effect of multipotential properties of curry leaf plant

Satish *et al.*, (2015) studied the anti bacterial, anti fungal activity, anti protozoal activity. The medicinal utilizes have been described especially for leaf, stem, bark and oil.

Prasan *et al.*, (2017) conducted carbazole alkaloids which are present in the leaves, fruits, roots and bark of the plant have been reported antidiabetic, anticancer, antibacterial, antinociceptive and antioxidant activity.

Hanan *et al.*, (2016) the curry leaf extract showed a broad spectrum of very significant antibacterial activity by producing a clear zone of inhibition against, *Staphylococcus*, *E. coli* and *Streptococcus*.

MATERIALS AND METHODS:

Technical programme

A.Name of experiment: Physical and Chemical properties of curry leaf plant(*Murraya koenigii*)

B.Location: The experiment will be conducted on Agricultural research farm, LPU, Phagwara.

C.Experimental details

1. Year of experimentation : 2018
2. Recommended dose of fertilizers :F1,F2
3. No. of treatments :
4. No. of replications :
5. No. of pots : 38
6. Pot size : 12inch
7. Date of sowing :S1, S2
8. Experimental design : Suitable experimental design will be selected
9. Crop and variety :V1,V2,V3

D.Observations to be recorded

Physical Properties of Crop

Plant height at 30, 60 and 90 days after planting

Plant height (cm) will be recorded from five randomly selected plants from each net plot. The height will be measured from the ground level to the top of the selected plants in centimetre. The average value will be calculated and recorded separately.

Number of branches per plant

The branches arising from the main shoots will be counted from the randomly selected five plants in each net plot at the time of harvest. Average value of each plot will be worked out and recorded.

Area of leaf

Leaf area will be recorded at 30, 60 and 90 days after planting from five randomly selected plants from each net plot.

Chemical properties:

1. Protein content
2. Sugar content
3. Fat content
4. Oleoresin
5. Volatile oil
6. Starch.

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