



ISSN (E): 2277-7695  
ISSN (P): 2349-8242  
NAAS Rating: 5.23  
TPI 2023; 12(8): 1074-1076  
© 2023 TPI  
[www.thepharmajournal.com](http://www.thepharmajournal.com)  
Received: 09-05-2023  
Accepted: 19-06-2023

**AS Rathore**  
Department of Horticulture,  
RCA (MPUAT), Udaipur,  
Rajasthan, India

**KD Ameta**  
Department of Horticulture,  
RCA (MPUAT), Udaipur,  
Rajasthan, India

**RA Kaushik**  
Department of Horticulture,  
RCA (MPUAT), Udaipur,  
Rajasthan, India

**Devendra Jain**  
Department of MBBT, RCA  
(MPUAT), Udaipur, Rajasthan,  
India

**Roshan Choudhary**  
Department of Agronomy, RCA  
(MPUAT), Udaipur, Rajasthan,  
India

**HL Bairwa**  
Department of Horticulture,  
RCA (MPUAT), Udaipur,  
Rajasthan, India

**Om Prakash**  
Department of Horticulture,  
RCA (MPUAT), Udaipur,  
Rajasthan, India

**Pavan Prajapati**  
Department of Horticulture,  
RCA (MPUAT), Udaipur,  
Rajasthan, India

**Rajat Singh**  
Department of Horticulture,  
RCA (MPUAT), Udaipur,  
Rajasthan, India

**Monu Kumari**  
Department of Horticulture,  
RCA (MPUAT), Udaipur,  
Rajasthan, India

**Corresponding Author:**  
**AS Rathore**  
Department of Horticulture,  
RCA (MPUAT), Udaipur,  
Rajasthan, India

## Study of morphological variability in curry leaf (*Murraya koenigii* L.) Germplasm of Southern Rajasthan

**AS Rathore, KD Ameta, RA Kaushik, Devendra Jain, Roshan Choudhary, HL Bairwa, Om Prakash, Pavan Prajapati, Rajat Singh and Monu Kumari**

### Abstract

The investigation is carried out in Udaipur and Bhilwara region of Southern Rajasthan. The morphological characters *i.e.*, Number of leaflets, Length of leaflet, Width of leaflet, Weight of 100 fresh leaves with rachis and without rachis, Weight of 100 dried leaves with rachis and without rachis. The following observation has been recorded *i.e.*, number of leaflets having wide variation range from 16 to 24.2, length of leaflet ranges from 2.87 to 5.13 cm and width of leaflet with range from 1.45 cm to 2.76 cm and having mean values of 20.68, 4.19 and 2.21, respectively, while for other parameter *i.e.*, 181.24 g to 290.54 g for weight of 100 fresh leaves with rachis, 160.65 g to 274.43 g for weight of 100 rachis without rachis, 70.49 g to 113.72 g for weight of 100 dried leaves with rachis and 56 g to 99 g for weight of 100 dried leaves without rachis. Germplasm CL-10 showed best results in respect to growth parameters among all curry leaf germplasm.

**Keywords:** Curry leaf, Number of leaflets, length of leaflets, width of leaflet, fresh leaf weight, dried leaf weight

### Introduction

Curry leaf (*Murraya koenigii* L.), an aromatic semi evergreen tree is a perennial leafy vegetable. The leaves of the plant are used extensively for seasoning and flavouring dishes. *Murraya* leaves are full of antioxidants namely tocopherol,  $\beta$ -carotene and lutein. It is also possessed antioxidative activities providing protection against oxidative stress. Curry leaves are good source of beta carotene. Traditionally fresh leaves, dried leaf powder and essential oil are widely used for flavouring food preparations. The essential oil is also utilized in soap, cosmetic industry and aromatherapy. Branches are used as brushes for clean teeth which protect dental caries caused by bacteria. The sources of the breeding program are largely determined by genetic diversity as well as by key parameters related to adaptation and productivity. The phenotypic expression of the plant characters is mainly controlled by the genetic makeup of the plant and environment. Further, the genetic variance of any quantitative trait is composed of additive variance (heritable) and non-additive variance which include dominance and epistasis (non-allelic) interaction.

### Materials and Methods

The leaves of *Murraya koenigii* were collected from the different locations of Udaipur and Bhilwara district of Rajasthan. Udaipur is situated at 24° 34' N latitude and 73° 42' E longitude at an elevation of 582.17 meter above mean sea level. The region falls under agro climatic zone IV-a (Sub-Humid Southern plain and Aravalli Hills) of Rajasthan. To study genetic variability in this experiment, 25 samples of leaves of curry leaf were collected and studied in Randomized Block Design with three replications. The observation recorded for Number of leaflets, Length of leaflet (cm), Width of leaflet (cm), Weight of 100 fresh leaves with rachis (g) and without rachis (g), Weight of 100 dried leaves with rachis (g) and without rachis (g).

**Table 1:** Mean values for number of leaflets, length of leaflet and width of leaflet of curry leaf genotypes

Accession	Number of Leaflets	Length of leaflet (cm)	Width of leaflet (cm)
CL-1	22.2	4.96	1.92
CL-2	17.8	4.75	2.12
CL-3	21.2	4.43	2.41
CL-4	20.6	4.64	1.67
CL-5	22.4	4.12	2.28
CL-6	19.6	4.08	1.77
CL-7	16.0	2.87	1.45
CL-8	20.2	3.96	2.16
CL-9	23.4	4.25	2.32
CL-10	24.2	5.13	2.76
CL-11	20.8	4.57	2.42
CL-12	19.4	4.47	2.14
CL-13	21.2	3.62	2.07
CL-14	18.4	3.79	1.92
CL-15	20.8	4.21	1.51
CL-16	22.2	4.34	2.63
CL-17	23.6	4.81	1.72
CL-18	20.4	3.76	2.18
CL-19	22.2	4.26	1.83
CL-20	19.6	4.13	1.80
CL-21	17.8	3.89	2.41
CL-22	20.2	4.77	2.56
CL-23	19.6	3.37	1.63
CL-24	22.4	3.52	1.87
CL-25	20.8	4.08	2.21
SE(m)±	0.32	0.07	0.03
C.D. (P=0.05)	0.92	0.19	0.07

## Results and Discussion

The morphological characters are important for assessing the genetic diversity of various germplasms and further utilization for crop improvement. The number of leaflets recorded wide variation having range from 16 to 24.2, length of leaflet ranges from 2.87 to 5.13 cm and width of leaflet with range

from 1.45 cm to 2.76 cm and having mean values of 20.68, 4.19 and 2.21, respectively. Maximum number of leaflets and highest length of leaflet as well as width of leaflet were recorded for germplasm CL-10. Significant variations for number of leaflets, length of leaflet and width of leaflet were also reported by Lalitha *et al.* (1997) [3] who studied fifteen genotypes of curry leaf and observed variations in number of leaflets ranging from 14.17 to 21.35 and width of leaflet ranging from 0.97 to 2.55 cm, whereas Peter (2019) [4] noted the leaflet length ranging from 3.75 to 4.56 cm and width of leaflet range between 1.25 cm to 2.01 cm while working with various germplasm of curry leaf, further, Subha *et al.* (2010) [6] reported 17 to 20 number of leaflets and Siddappa and Hedge (2011) [5] recorded number of leaflets per leaf (20.52) while working with curry leaf, similarly Aravind *et al.* (2012) [1] also reported variation in leaflets with a mean value of 19.66 for this trait in curry leaf.

Mean performance for weight of 100 fresh leaves with rachis and without rachis, weight of 100 dried leaves with rachis and without rachis showed considerable variability among different germplasms having mean values of 228.23, 209.68, 90.26 and 76.21, respectively, whereas these traits showed range of 181.24 g to 290.54 g for weight of 100 fresh leaves with rachis, 160.65 g to 274.43 g for weight of 100 rachis without rachis, 70.49 g to 113.72 g for weight of 100 dried leaves with rachis and 56 g to 99 g for weight of 100 dried leaves without rachis and best performing germplasm for these trait was CL-10 as it showed maximum values of 290.54, 274.43, 113.72 and 70.49 g, respectively. Significant variations for weight of fresh leaves with rachis and without rachis, weight of dried leaves with rachis and without rachis were also observed by Aravind *et al.* (2012) [1] in curry leaf, whereas, Chittaragi *et al.* (2022) [2] reported mean values for fresh leaf weight with rachis (2.90 g), fresh leaf weight without rachis (2.74 g), dry leaf weight with rachis (2.17 g) and dry leaf weight without rachis (2.04 g) while working with curry leaf germplasms.

**Table 2:** Mean values for weight of 100 fresh leaves with rachis, without rachis, dried leaves with rachis and dried leaves without rachis of curry leaf genotypes

Accession	Weight of 100 fresh leaves with rachis (g)	Weight of 100 fresh leaves without rachis (g)	Weight of 100 dried leaves with rachis (g)	Weight of 100 dried leaves without rachis (g)
CL-1	184.31	168.02	79.47	65.82
CL-2	261.64	241.47	101.42	87.51
CL-3	191.85	177.94	79.54	65.37
CL-4	242.34	228.34	97.85	83.46
CL-5	203.25	186.62	80.32	66.28
CL-6	246.48	232.54	99.14	85.34
CL-7	181.24	160.65	70.49	56.26
CL-8	217.12	203.38	93.28	79.16
CL-9	278.21	265.85	97.16	83.41
CL-10	290.54	274.43	113.72	99.62
CL-11	249.41	233.51	99.17	85.81
CL-12	236.74	215.17	96.44	82.27
CL-13	241.21	219.21	96.73	82.19
CL-14	258.21	223.14	94.38	80.41
CL-15	232.18	218.49	95.92	81.26
CL-16	229.74	220.34	93.72	79.33
CL-17	251.43	228.50	90.64	76.75
CL-18	223.70	207.17	88.46	74.22
CL-19	189.67	168.24	76.34	62.31
CL-20	198.28	172.51	75.87	61.74
CL-21	205.91	182.81	82.71	68.83
CL-22	216.18	198.72	85.93	71.97

CL-23	220.57	203.39	89.15	75.18
CL-24	212.40	191.44	83.04	69.29
CL-25	243.16	220.18	95.59	81.54
SE(m)±	3.26	2.93	1.12	1.21
C.D. (P=0.05)	9.26	8.33	3.17	3.43

### Conclusion

It is concluded from above investigation that CL-10 germplasm was found overall best among 25 germplasms regarding morphological characters of curry leaf of Southern Rajasthan.

### Conflict of Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

### Reference

1. Aravind S, Balakrishnamurthy G, Jansirani P. Influence of fertigation treatments on growth and yield of curry leaf (*Murraya koenigii* L.) during off season. *Crop Research*. 2012;44:461-465.
2. Chittaragi D, Ananthan M, Venkatesan K, Jeyakumar P, Mahalingam L. Per se performance of curry leaf (*Murraya koenigii* L.) accessions for growth and yield parameters. *The Pharma Innovation Journal*. 2022;11:1736-1739.
3. Lalitha S, Thamburaj S, Thangaraj T, Vijayakumar M. Evaluation of curry leaf (*Murraya koenigii* L.) ecotypes. *South Indian Horticulture*. 1997;45:78-80.
4. Peter A. Evaluation of curry leaf (*Murraya koenigii* L.) accessions for yield and quality. M.Sc. Thesis submitted to Kerala Agricultural University, Thrissur, Kerala; c2019.
5. Siddappa R, Hedge NK. Effect of foliar spray of vermiwash and nutritional treatments on growth and yield performance of curry leaf var. Suvasini. *Asian Journal of Horticulture*. 2011;6:68-70.
6. Subha R, Jansirani P, Babu CR. Studies on crop regulation in curry leaf (*Murraya koenigii* L.) during off season. *International Journal of Plant Sciences*. 2010;5:269-273.