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A Study on the Performance Analysis of Peacock Ginger (*Kaempferia rotunda* L.) Accessions from Kerala State of India

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ABSTRACT

Peacock ginger (*Kaempferia rotunda* L.) is a highly valued medicinal plant cultivated for its rhizomes. Sixty-eight accessions of peacock ginger collected from different locations across Kerala State of India were subjected to comparative performance analysis based on fifteen growth and yield characters with the help of cumulative performance index. It was used to find out the most promising genotypes with desirable characters for further improvement of the species. Being a marginalized crop, the improvement of yield potential in *Kaempferia rotunda* is very important for popularization of the crop as food component and also for product diversification.

***Key words*:** Accessions, Cumulative performance index, *Kaempferia rotunda,* Peacock ginger, Performance analysis

Peacock ginger (*Kaempferia rotunda* L.) is a highly valued medicinal plant belonging to the family Zingiberaceae. *Kaempferia rotunda* is also known as Indian crocus. It is a handsome aromatic herb with very fragrant sub globose yellow-white tuberous rhizome used in traditional medicine of Kerala. The rhizomes and root tubers of the plant have a bitter, camphoraceous taste and have been widely used as a vegetable and a food flavouring spice in India and south East Asia. The plant is widely distributed in the tropics and sub-tropics of Asia and Africa. It is distributed throughout the Indian subcontinent from eastern Himalayas to Sri Lanka and the Malay Peninsula to Malay Island. It is seen naturally growing in the Western Ghat region of Kerala State of India. To enhance the production and productivity, large scale planting of high yielding varieties is imperative. The superior accessions which possess significantly maximum values of agronomic traits for the cumulative performance index compared to the other accessions can be subjected to further crop improvement programmes so that promising genotypes with better agronomic characters can be made available to the farmers. Similar experiments on performance analysis of different crops for the selection of superior genotypes from the existing germplasm have been carried out by earlier workers like Chaudhary *et al*. [1] and Salimath *et al*. [2] in turmeric, Anand *et al*. [3] in pepper, Ahmad *et al*. [4] in tomato, Elavarasan *et al*. [5] in cabbage, Jayasree *et al*. [6] in mango ginger and Chandramohanan *et al*. [7] in rice.

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MATERIALS AND METHODS

The experiment was conducted in the experimental plot of the Genetics and Plant Breeding Division of the Department of Botany, University of Calicut, Kerala, India during 2017-2020. The experiments were laid out in randomized block design (RBD) with three replications in open field condition. The experimental plot is located at 75°46' E longitude and11°15' N latitude at an elevation of 50 m from MSL. Average temperature of the study area ranges from 17.83°C to 36.83°C with an annual rainfall of 247 cm. Sixty-eight accessions of *Kaempferia rotunda* collected from different locations of Kerala State of India formed the experimental material. Fresh, healthy and disease-free rhizomes of about 3 cm - 5 cm length and 25 g - 30 g weight were used for raising the crop and the plants were irrigated regularly on non-rainy days to maintain optimum soil moisture. Recommended package of practices and plant protection measures were followed for cultivation. The growth and yield characters were recorded after six months of growth. The yield characters were recorded by destructive sampling. The morphometric observations recorded for three consecutive crop seasons were pooled and the resultant data were used for the statistical analysis. The data consist of measurements on 15 growth and yield attributes such as plant height (cm), number of tillers, number of leaves per tiller. leaf length (cm), leaf breadth(cm), leaf area (cm^2), number of primary fingers, number of secondary fingers, length of primary fingers, diameter of primary fingers, length of secondary fingers, diameter of secondary fingers, length of mother rhizome (cm), diameter of mother rhizome (cm) and yield per plant (g). Comparative performance of the accessions of *K. rotunda* was analyzed based on fifteen growth and yield characters with the help of performance index calculated as per Amaravenmathy and Srinivasan [8]. The performance index was calculated using the following formula:

$$\text{Performance index} = \frac{\text{Accession mean of the character}}{\text{Grand mean of the character}}$$

RESULTS AND DISCUSSION

Performance analysis of sixty-eight accessions of *Kaempferia rotunda* was carried out on the basis of the performance indices of major morphometric characters. The cumulative performance index was calculated (Table 2) to find out the most promising genotypes with the desirable characters for further improvement of the species. Of the sixty-eight accessions of *K. rotunda*, accession number CUR 64 ranked the first with a cumulative performance index of 19.53. The accessions CUR 61 and CUR 34 have been placed at the second and third rank with cumulative performance index of 18.99 and 17.97 respectively. The accessions CUR 21, CUR 47, CUR 32, CUR 7, CUR 45, CUR 28 and CUR 15 ranked from 4 to 10 with a cumulative performance index of 17.78, 17.37, 17.17, 17.00, 16.80, 16.73 and 16.71 in that order (Table 1-2). These superior accessions possess significantly maximum values of agronomic traits compared to the other accessions and these superior accessions can be subjected to further crop improvement programmes so that promising genotypes with better agronomic characters can be made available to the farming community.

Table 1 Performance analysis of the accessions of *Kaempferia rotunda* studied - Mean value of the characters

Accession Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
CUR 1	60.56	3.10	5.77	31.93	7.33	145.01	123.88	10.22	4.45	2.16	17.33	3.76	1.46	5.54	2.90
CUR 2	62.84	3.44	5.49	33.35	7.53	154.18	94.16	9.88	4.40	2.44	12.88	3.02	1.70	6.37	3.07
CUR 3	64.08	3.33	7.35	34.00	7.28	154.28	135.55	10.44	3.99	2.41	16.88	2.95	1.60	4.93	2.76
CUR 4	57.42	2.49	6.97	30.10	6.51	127.09	155.27	5.66	3.13	1.48	6.00	2.28	1.00	3.30	1.99
CUR 5	62.83	2.22	6.62	36.00	6.98	155.31	86.11	6.32	3.72	1.89	9.66	2.56	1.35	3.84	2.52
CUR 6	51.20	2.44	6.12	30.14	6.10	116.86	84.72	10.44	3.00	1.64	9.22	2.28	1.06	4.64	2.50
CUR 7	69.06	3.33	6.18	36.84	8.45	193.70	139.88	9.21	4.66	2.81	15.21	3.68	1.64	5.75	3.26
CUR 8	45.83	2.66	5.64	27.12	8.54	143.67	116.66	8.77	4.23	2.17	18.55	2.29	1.33	5.08	2.65
CUR 9	43.96	2.77	6.58	28.36	7.67	138.91	125.00	10.22	3.64	1.98	14.77	2.28	1.16	4.72	2.57
CUR 10	44.14	3.22	5.16	27.13	8.97	150.62	116.66	8.66	3.99	2.22	11.55	2.64	1.41	5.18	2.90
CUR 11	48.14	3.33	4.76	29.40	8.87	161.87	128.33	8.77	3.56	1.98	10.99	2.76	1.29	5.01	2.72
CUR 12	48.55	2.99	5.70	28.33	8.34	145.06	97.77	8.99	3.47	2.04	17.88	2.67	1.15	4.74	2.61
CUR 13	58.64	3.05	5.47	34.03	8.53	179.95	148.61	8.27	3.65	2.56	12.00	2.35	1.43	4.49	2.79
CUR 14	66.55	2.99	5.90	36.82	7.93	179.96	117.21	7.66	4.47	2.76	13.55	3.23	1.72	5.65	3.24
CUR 15	66.88	3.33	5.96	37.98	8.91	206.30	165.55	10.21	4.35	2.42	15.88	2.97	1.58	5.40	3.03
CUR 16	70.09	3.44	5.21	39.31	8.42	204.61	129.44	9.88	4.13	2.32	13.10	2.85	1.49	5.72	3.02
CUR 17	64.05	3.33	4.67	38.28	9.15	214.84	105.55	8.05	4.11	2.75	13.22	2.69	1.66	5.13	3.04
CUR 18	61.63	2.88	5.88	35.64	8.46	186.48	144.99	8.88	2.24	2.24	16.33	3.08	1.38	4.83	2.83
CUR 19	72.09	2.66	5.93	41.17	8.77	220.67	122.22	7.33	3.92	2.27	8.22	2.67	1.15	5.40	2.80
CUR 20	66.85	2.88	4.51	39.86	9.25	229.36	114.16	8.72	3.99	2.63	11.44	3.14	1.65	5.40	3.16
CUR 21	71.28	3.10	5.44	39.28	9.96	239.55	157.77	11.33	4.74	3.03	16.44	3.29	1.64	5.61	3.32
CUR 22	71.99	2.44	7.10	37.79	7.94	184.55	115.55	8.22	4.10	2.06	11.10	2.77	1.47	5.12	2.82
CUR 23	74.60	2.44	5.75	39.83	8.02	196.94	99.99	6.77	3.33	1.80	7.10	2.20	0.96	4.3	2.63
CUR 24	64.85	2.66	6.68	34.73	7.48	168.78	76.11	6.99	4.05	2.05	7.55	3.15	1.32	4.75	2.72
CUR 25	75.08	3.44	5.65	38.43	8.29	196.16	146.10	8.88	5.25	2.38	13.55	3.49	1.49	5.65	2.90
CUR 26	70.28	3.33	5.16	38.45	8.99	213.96	103.88	9.88	4.56	2.67	13.77	3.18	1.83	5.57	3.37
CUR 27	72.45	3.10	6.25	41.02	8.03	202.94	93.88	6.55	3.79	2.04	8.33	2.51	1.33	5.14	2.58
CUR 28	71.78	3.44	6.01	40.52	8.90	221.05	147.21	7.55	4.12	2.47	14.11	3.64	1.87	4.87	3.07
CUR 29	69.93	2.88	5.05	39.05	9.17	222.85	89.44	4.10	2.71	1.55	4.22	2.16	1.04	4.76	2.41
CUR 30	82.25	2.88	7.21	48.37	8.89	251.64	121.66	7.33	4.39	2.21	9.22	3.17	1.37	5.35	3.05
CUR 31	64.43	3.55	4.84	37.40	7.88	199.46	176.10	5.33	3.83	2.14	6.32	2.56	1.26	5.35	2.69
CUR 32	69.06	3.66	5.71	41.78	8.32	213.87	131.66	9.11	4.59	2.80	15.55	3.25	1.88	5.82	3.06
CUR 33	49.78	3.22	5.46	28.56	7.73	137.30	111.66	7.88	3.63	1.99	10.44	2.37	1.20	4.35	2.21
CUR 34	76.13	4.33	7.32	38.96	8.16	195.04	164.44	9.66	4.10	2.67	18.88	3.86	1.78	5.33	3.12
CUR 35	83.08	3.38	6.95	41.64	8.22	210.80	104.99	9.88	3.85	2.37	12.88	3.54	1.77	5.32	2.98
CUR 36	66.01	2.44	7.21	36.30	7.32	164.28	134.44	7.22	3.84	2.08	10.44	2.62	1.47	4.36	2.68
CUR 37	68.55	2.66	7.56	36.63	6.82	153.99	190.55	3.88	3.44	2.00	4.88	1.56	1.10	4.38	2.37
CUR 38	62.09	2.66	5.40	36.17	7.81	173.85	117.77	9.55	3.94	2.11	13.44	2.53	1.48	5.66	3.16
CUR 39	60.89	2.33	6.66	34.79	7.11	152.85	131.66	7.88	3.45	2.13	13.99	2.50	1.31	4.78	2.84
CUR 40	61.02	2.77	6.51	35.40	7.51	164.40	133.11	8.00	3.38	2.04	8.22	2.42	1.19	4.40	3.04
CUR 41	75.86	1.88	7.62	37.66	6.66	154.41	132.77	9.10	3.78	1.89	13.10	2.47	1.27	5.09	2.55
CUR 42	61.93	2.11	7.97	36.22	8.17	187.64	165.27	9.77	4.13	2.19	9.61	2.48	1.28	5.03	2.68
CUR 43	68.64	2.33	6.97	35.04	6.86	148.74	127.77	7.22	2.61	1.38	4.88	2.15	0.85	4.35	2.18
CUR 44	75.61	2.88	8.16	37.24	7.70	181.46	278.32	8.21	3.92	1.97	11.66	2.52	1.35	4.21	2.60
CUR 45	80.37	2.88	7.99	40.66	8.82	220.44	349.99	8.88	4.09	1.92	13.10	2.57	1.23	4.50	2.40
CUR 46	78.14	2.55	6.82	40.21	7.79	188.53	198.88	7.10	3.50	2.00	9.10	2.57	1.14	4.04	2.06

CUR 47	86.72	2.66	8.49	45.67	8.84	246.31	233.88	11.44	3.85	2.11	15.77	2.64	1.23	5.11	2.93
CUR 48	73.99	3.00	5.90	35.77	6.98	157.66	197.77	8.55	3.98	2.13	11.55	2.85	1.30	4.26	2.56
CUR 49	67.40	2.66	7.27	37.54	8.04	186.29	249.44	8.11	3.98	2.05	11.55	2.59	1.37	4.65	2.76
CUR 50	66.15	2.55	6.82	34.43	7.16	153.64	187.77	9.66	3.60	2.26	14.44	3.05	1.56	5.56	2.90
CUR 51	64.05	2.55	6.01	35.10	7.22	158.28	155.55	7.77	3.81	2.14	6.99	2.69	1.35	4.80	2.75
CUR 52	65.51	3.49	6.04	32.82	6.98	141.17	111.38	9.61	3.96	2.04	9.66	2.45	1.20	4.69	2.65
CUR 53	52.14	2.66	6.10	27.79	6.38	109.38	81.10	6.55	2.54	1.29	6.44	1.62	0.80	3.97	2.05
CUR 54	57.80	2.88	6.84	30.19	6.56	123.40	98.33	8.33	2.33	1.42	8.44	1.32	0.87	3.64	1.94
CUR 55	74.33	2.66	7.82	41.90	7.56	200.58	258.33	9.33	3.94	2.15	12.55	2.48	1.42	5.05	2.74
CUR 56	66.13	3.10	5.58	35.52	7.32	161.74	190.83	9.88	3.09	2.02	9.77	2.62	1.29	4.92	2.56
CUR 57	73.76	2.77	6.18	37.28	7.61	175.60	168.33	8.77	3.25	1.84	5.88	2.18	1.17	4.60	2.23
CUR 58	67.14	2.10	6.54	34.48	7.20	157.80	158.88	6.88	2.46	1.46	6.33	1.57	0.94	3.38	1.92
CUR 59	66.68	2.88	6.95	36.06	7.32	163.46	226.66	10.11	3.14	1.85	11.99	2.24	1.21	4.30	2.47
CUR 60	76.44	2.99	7.68	40.84	8.13	202.90	312.77	10.22	3.20	1.65	11.99	1.94	1.03	4.14	2.25
CUR 61	85.39	3.11	9.17	43.45	9.01	238.03	363.33	8.66	4.67	2.32	14.55	4.15	1.81	4.82	2.54
CUR 62	71.02	3.00	6.34	36.34	7.29	165.73	273.88	6.22	3.62	2.08	11.16	2.7	1.30	4.57	2.55
CUR 63	80.40	1.94	8.01	45.28	9.08	252.05	252.77	10.88	3.96	1.90	10.38	2.22	1.07	5.17	2.82
CUR 64	70.86	3.44	7.06	38.85	8.64	207.78	401.10	9.99	4.61	2.76	20.77	3.77	1.85	5.30	3.11
CUR 65	52.11	3.00	6.11	28.94	7.60	138.28	120.07	8.00	3.70	1.80	9.55	2.37	1.18	3.76	2.10
CUR 66	83.79	2.83	8.15	44.04	7.95	191.75	243.88	7.55	3.28	2.00	10.05	2.73	1.3	4.71	2.50
CUR 67	67.64	2.55	7.57	36.30	7.99	179.74	321.66	8.77	4.19	2.13	14.44	3.24	1.34	5.00	2.51
CUR 68	73.75	2.66	6.62	40.12	8.54	213.43	239.99	7.66	4.09	2.1	10.11	2.70	1.22	4.95	2.54

1: Plant height (cm); 2: Number of tillers; 3: Number of leaves per tiller; 4: Leaf length (cm); 5: Leaf breadth (cm); 6: Leaf area (cm^2); 7: Yield per plant (g); 8: Number of primary fingers; 9: Length of primary finger (cm); 10: Diameter of primary finger (cm); 11: Number of secondary fingers; 12: Length of secondary finger (cm); 13: Diameter of secondary finger (cm); 14: Length of mother rhizome (cm); 15: Diameter of mother rhizome (cm)

Table 2 Performance analysis of the different accessions of *Kaempferia rotunda* studied - performance indices

Accession number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total	Rank
CUR 1	0.90	1.07	0.89	0.87	0.92	0.80	0.75	1.20	1.17	1.01	1.49	1.39	1.08	1.13	1.07	15.74	22
CUR 2	0.93	1.19	0.85	0.91	0.94	0.85	0.57	1.16	1.16	1.15	1.10	1.11	1.25	1.31	1.14	15.62	25
CUR 3	0.95	1.15	1.13	0.92	0.91	0.85	0.83	1.23	1.05	1.13	1.45	1.09	1.18	1.01	1.02	15.90	19
CUR 4	0.85	0.86	1.08	0.82	0.81	0.70	0.95	0.66	0.82	0.69	0.51	0.84	0.74	0.67	0.73	11.73	64
CUR 5	0.93	0.76	1.02	0.98	0.87	0.86	0.52	0.74	0.98	0.89	0.83	0.94	1.00	0.79	0.93	13.04	57
CUR 6	0.76	0.84	0.94	0.82	0.76	0.64	0.51	1.23	0.79	0.77	0.79	0.84	0.78	0.95	0.92	12.34	61
CUR 7	**1.03**	**1.15**	**0.95**	**1.00**	**1.06**	**1.07**	**0.85**	**1.08**	**1.23**	**1.32**	**1.30**	**1.36**	**1.21**	**1.18**	**1.21**	**17.00**	**07**
CUR 8	0.68	0.92	0.87	0.74	1.07	0.79	0.71	1.03	1.11	1.02	1.59	0.84	0.98	1.04	0.98	14.37	40
CUR 9	0.65	0.95	1.02	0.77	0.96	0.76	0.76	1.20	0.96	0.93	1.26	0.84	0.85	0.97	0.95	13.83	51
CUR 10	0.65	1.11	0.80	0.74	1.12	0.83	0.71	1.02	1.05	1.04	0.99	0.97	1.04	1.06	1.07	14.20	45
CUR 11	0.71	1.15	0.73	0.80	1.11	0.89	0.78	1.03	0.94	0.93	0.94	1.02	0.95	1.03	1.01	14.02	48
CUR 12	0.72	1.03	0.88	0.77	1.05	0.80	0.59	1.06	0.91	0.96	1.53	0.98	0.85	0.97	0.97	14.07	47
CUR 13	0.87	1.05	0.84	0.93	1.07	0.99	0.91	0.97	0.96	1.20	1.03	0.87	1.05	0.92	1.03	14.69	36
CUR 14	0.99	1.03	0.91	1.00	0.99	0.99	0.71	0.90	1.18	1.30	1.16	1.19	1.27	1.16	1.20	15.98	18
CUR 15	**0.99**	**1.15**	**0.92**	**1.03**	**1.12**	**1.14**	**1.01**	**1.20**	**1.15**	**1.14**	**1.36**	**1.1**	**1.17**	**1.11**	**1.12**	**16.71**	**10**
CUR 16	1.04	1.19	0.80	1.07	1.06	1.13	0.79	1.16	1.09	1.09	1.12	1.05	1.10	1.17	1.12	15.98	18
CUR 17	0.95	1.15	0.72	1.04	1.15	1.18	0.64	0.95	1.08	1.29	1.13	0.99	1.22	1.05	1.13	15.67	23
CUR 18	0.92	0.99	0.91	0.97	1.06	1.03	0.88	1.04	0.59	1.05	1.40	1.14	1.02	0.99	1.05	15.04	29
CUR 19	1.07	0.92	0.91	1.12	1.10	1.22	0.74	0.86	1.03	1.07	0.70	0.98	0.85	1.11	1.04	14.72	35
CUR 20	0.99	0.99	0.69	1.08	1.16	1.27	0.69	1.02	1.05	1.24	0.98	1.16	1.22	1.11	1.17	15.82	20
CUR 21	**1.06**	**1.07**	**0.84**	**1.07**	**1.25**	**1.32**	**0.96**	**1.33**	**1.25**	**1.42**	**1.41**	**1.21**	**1.21**	**1.15**	**1.23**	**17.78**	**04**
CUR 22	1.07	0.84	1.10	1.03	1.00	1.02	0.70	0.97	1.08	0.97	0.95	1.02	1.08	1.05	1.04	14.92	32
CUR 23	1.11	0.84	0.89	1.08	1.01	1.09	0.61	0.79	0.88	0.84	0.61	0.81	0.71	0.88	0.97	13.12	55
CUR 24	0.96	0.92	1.03	0.94	0.94	0.93	0.46	0.82	1.07	0.96	0.64	1.16	0.97	0.97	1.01	13.78	52
CUR 25	1.12	1.19	0.87	1.05	1.04	1.08	0.89	1.04	1.38	1.12	1.16	1.29	1.10	1.16	1.07	16.56	13
CUR 26	1.04	1.15	0.80	1.05	1.13	1.18	0.63	1.16	1.20	1.25	1.18	1.17	1.35	1.14	1.25	16.68	11
CUR 27	1.08	1.07	0.96	1.12	1.01	1.12	0.57	0.77	1.00	0.96	0.71	0.92	0.98	1.05	0.95	14.27	41
CUR 28	**1.07**	**1.19**	**0.93**	**1.10**	**1.12**	**1.22**	**0.90**	**0.89**	**1.08**	**1.16**	**1.21**	**1.34**	**1.38**	**1.00**	**1.14**	**16.73**	**09**
CUR 29	1.04	0.99	0.78	1.06	1.15	1.23	0.54	0.48	0.71	0.73	0.36	0.80	0.77	0.97	0.89	12.50	60
CUR 30	1.22	0.99	1.11	1.32	1.11	1.39	0.74	0.86	1.16	1.04	0.79	1.17	1.01	1.10	1.13	16.14	17
CUR 31	0.96	1.22	0.75	1.02	0.99	1.10	1.07	0.62	1.01	1.00	0.54	0.94	0.93	1.10	1.00	14.25	43
CUR 32	**1.03**	**1.26**	**0.88**	**1.14**	**1.04**	**1.18**	**0.80**	**1.07**	**1.21**	**1.32**	**1.33**	**1.20**	**1.39**	**1.19**	**1.13**	**17.17**	**06**
CUR 33	0.74	1.11	0.84	0.78	0.97	0.76	0.68	0.93	0.96	0.93	0.89	0.87	0.88	0.89	0.82	13.05	56
CUR 34	**1.13**	**1.49**	**1.13**	**1.06**	**1.02**	**1.08**	**1.00**	**1.14**	**1.08**	**1.25**	**1.62**	**1.42**	**1.31**	**1.09**	**1.15**	**17.97**	**03**
CUR 35	1.24	1.16	1.07	1.13	1.03	1.16	0.64	1.16	1.01	1.11	1.10	1.31	1.31	1.09	1.10	16.62	12
CUR 36	0.98	0.84	1.11	0.99	0.92	0.90	0.82	0.85	1.01	0.98	0.89	0.97	1.08	0.89	0.99	14.22	44

CUR 37	1.02	0.92	1.17	1.00	0.85	0.85	1.16	0.45	0.91	0.94	0.41	0.57	0.81	0.90	0.88	12.84	58
CUR 38	0.92	0.92	0.83	0.98	0.98	0.96	0.72	1.12	1.04	0.99	1.15	0.93	1.09	1.16	1.17	14.96	31
CUR 39	0.90	0.80	1.03	0.95	0.89	0.84	0.80	0.93	0.91	1.00	1.20	0.92	0.97	0.98	1.05	14.17	46
CUR 40	0.91	0.95	1.00	0.96	0.94	0.91	0.81	0.94	0.89	0.96	0.70	0.89	0.88	0.90	1.13	13.77	53
CUR 41	1.13	0.65	1.18	1.02	0.83	0.85	0.81	1.07	1.00	0.89	1.12	0.91	0.94	1.04	0.94	14.38	39
CUR 42	0.92	0.73	1.23	0.99	1.02	1.03	1.01	1.15	1.09	1.03	0.82	0.91	0.94	1.03	0.99	14.89	33
CUR 43	1.02	0.80	1.08	0.95	0.86	0.82	0.78	0.85	0.69	0.65	0.41	0.79	0.62	0.89	0.81	12.02	62
CUR 44	1.18	0.99	1.26	1.01	0.96	1.00	1.70	0.96	1.03	0.92	1.00	0.93	1.00	0.86	0.96	15.76	21
CUR 45	**1.19**	**0.99**	**1.23**	**1.11**	**1.11**	**1.22**	**2.14**	**1.04**	**1.08**	**0.90**	**1.12**	**0.95**	**0.91**	**0.92**	**0.89**	**16.8**	**08**
CUR 46	1.16	0.88	1.05	1.09	0.98	1.04	1.21	0.83	0.92	0.94	0.78	0.95	0.84	0.83	0.76	14.26	42
CUR 47	**1.29**	**0.92**	**1.31**	**1.24**	**1.11**	**1.36**	**1.43**	**1.35**	**1.01**	**0.99**	**1.35**	**0.97**	**0.91**	**1.05**	**1.08**	**17.37**	**05**
CUR 48	1.10	1.03	0.91	0.97	0.87	0.87	1.21	1.00	1.05	1.00	0.99	1.05	0.96	0.87	0.95	14.83	34
CUR 49	1.00	0.92	1.12	1.02	1.01	1.03	1.52	0.95	1.05	0.96	0.99	0.95	1.01	0.95	1.02	15.50	28
CUR 50	0.98	0.88	1.05	0.94	0.90	0.85	1.15	1.14	0.95	1.06	1.24	1.12	1.15	1.14	1.07	15.62	25
CUR 51	0.95	0.88	0.93	0.95	0.90	0.87	0.95	0.91	1.00	1.00	0.60	0.99	1.00	0.98	1.02	13.93	50
CUR 52	0.97	1.20	0.93	0.89	0.87	0.78	0.68	1.13	1.04	0.96	0.83	0.90	0.88	0.96	0.98	14.00	49
CUR 53	0.77	0.92	0.94	0.75	0.80	0.60	0.49	0.77	0.67	0.60	0.55	0.62	0.59	0.81	0.76	10.64	66
CUR 54	0.86	0.99	1.06	0.82	0.82	0.68	0.60	0.98	0.61	0.66	0.72	0.48	0.64	0.74	0.72	11.38	65
CUR 55	1.10	0.92	1.21	1.14	0.95	1.11	1.58	1.10	1.04	1.01	1.07	0.91	1.05	1.03	1.01	16.23	15
CUR 56	0.98	1.07	0.86	0.97	0.92	0.89	1.16	1.16	0.81	0.95	0.84	0.97	0.95	1.01	0.95	14.49	38
CUR 57	1.10	0.95	0.95	1.01	0.95	0.97	1.03	1.03	0.85	0.86	0.50	0.80	0.86	0.94	0.82	13.62	54
CUR 58	1.00	0.72	1.01	0.94	0.90	0.87	0.97	0.81	0.65	0.68	0.54	0.58	0.69	0.69	0.71	11.76	63
CUR 59	0.99	0.99	1.07	0.98	0.92	0.90	1.38	1.19	0.83	0.87	1.03	0.82	0.89	0.88	0.91	14.65	37
CUR 60	1.14	1.03	1.19	1.11	1.02	1.12	1.91	1.20	0.84	0.77	1.03	0.71	0.76	0.85	0.83	15.51	27
CUR 61	**1.27**	**1.07**	**1.42**	**1.18**	**1.13**	**1.31**	**2.22**	**1.02**	**1.23**	**1.09**	**1.25**	**1.53**	**1.34**	**0.99**	**0.94**	**18.99**	**02**
CUR 62	1.06	1.03	0.98	0.99	0.91	0.91	1.67	0.73	0.95	0.98	0.95	1.00	0.96	0.94	0.94	15.00	30
CUR 63	1.20	0.67	1.24	1.23	1.14	1.39	1.54	1.28	1.04	0.89	0.89	0.82	0.79	1.06	1.04	16.22	16
CUR 64	**1.05**	**1.19**	**1.09**	**1.06**	**1.08**	**1.15**	**2.45**	**1.17**	**1.21**	**1.30**	**1.78**	**1.39**	**1.37**	**1.09**	**1.15**	**19.53**	**01**
CUR 65	0.77	1.03	0.94	0.79	0.95	0.76	0.73	0.94	0.97	0.84	0.82	0.87	0.87	0.77	0.78	12.83	59
CUR 66	1.25	0.97	1.26	1.20	1.00	1.06	1.49	0.89	0.86	0.94	0.86	1.01	0.96	0.96	0.92	15.63	24
CUR 67	1.00	0.88	1.17	0.99	1.00	0.99	1.97	1.03	1.10	1.00	1.24	1.20	0.99	1.02	0.93	16.51	14
CUR 68	1.10	0.92	1.02	1.09	1.07	1.18	1.47	0.90	1.08	0.99	0.86	1.00	0.90	1.01	0.94	15.53	26

CONCLUSION

Sixty-eight accessions of peacock ginger collected from different locations across Kerala State of India were subjected to comparative performance analysis based on fifteen growth and yield characters with the help of cumulative performance index. The cumulative performance index was calculated to find out the most promising genotypes with the desirable characters for further improvement of the species. From the aforementioned investigation it has been suggested that out of the sixty-eight accessions of *Kaempferia rotunda*, accession number CUR 64 ranked the first, CUR 61 and CUR 34 have been placed at the second and third rank. The accessions CUR 21, CUR 47, CUR 32, CUR 7, CUR 45, CUR 28 and CUR 15 ranked from 4 to 10. These superior accessions possess significantly maximum values of agronomic traits compared to the other accessions and these superior accessions can be subjected to further crop improvement programmes so that promising genotypes with better agronomic characters can be made available to the farming community.

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