PERFORMANCE EVALUATION OF GINGER (*ZINGIBER OFFICINALE* ROSC.)VARIETIES IN KOLLAM DISTRICT

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INTRODUCTION

Ginger(*Zingiber officinale* Rosc.) is an important spice crop of Kerala. In our state it is cultivated in an area of 4538 ha and its production is 21521 tones. Although many varieties of ginger are grown in different parts of the country, only those varieties grown in Kerala, which are grown with low fibre and pungency are suitable for dry ginger purpose. Hence the trial has been conducted o find out the best performing ginger variety in Kollam district.

OBJECTIVE

To evaluate best performing ginger variety in Kollam district under organic nutrition.

MATERIALS AND METHODS

The trial was conducted in Kollam district. Four ginger varieties Athira, Karthika, Aswathy and Varada were used for the experimental purpose. The number of replications is ten. Organic ginger production package developed by Kerala Agricultural University was followed for its cultivation The plot size followed was 1.5m x 1m. The morphological parameters like plant height, number of tillers, number of leaves per plant were observed during the study. Yield per hectare was recorded at harvest.

RESULTS

The data of the trial in ginger are presented in Table 1, Table 2, Table 3 and Table 4. The results revealed that ginger variety Varada recorded highest growth attributes under organic nutrition and also highest yield (18.5 t/ha) followed by variety Aswathy (16.7 t/ha), while local variety recorded lowest yield (10.0 t/ha). Similar results with Varada was reported by (Sasikumr et al., 1996). Highest B:C ratio (2.63) was obtained from Varada followed by Aswathy (2.38) and Athira (2.32) and lowest (1.43) from local variety . Highest disease incidence (25.0%) was reported from local variety followed by Karthika (8.0%) and lowest from Varada (5.2%). Pest incidence (15.4) was highest in local variety and lowest (4.3 %) in variety Varada. The rhizomes of ginger variety Varada and Aswathy were bold, while that of variety Athira and Karthika were medium bold. Maturity period for variety Varada was 200 days, while that of varieties Athira , Karthika and Aswathy were 240 days. Crude fibre content was least in variety Athira followed by variety Aswathy and highest in local variety. Dry recovery percentage was highest in variety Athira (22%) followed by variety Karthika (21%) and lowest in local variety (15 %). Varieties Varada , Athira and Karthika can be used for fresh and dry ginger purpose while variety Aswathy is used for fresh ginger purpose.

Table 1: Growth attributes of different ginger genotypes under organic farming

Treatments	Plant height (cm)	Number of leaves per plant	Number of tillers per plant	Stem girth (cm)
T_1(Local variety)	35.41	128.25	8.2	3.29
T_2(Ginger variety Varada)	51.45	156.30	16.0	3.82
T_3(Ginger variety Aswathy)	46.45	135.44	11.2	3.55
T_4(Ginger variety Athira)	38.26	145.8	10.05	3.33
T_5(Ginger variety Karthika)	41.55	139.5	9.8	3.41
CD (0.05)	7.57	38.5	2.8	0.23

Table 2 . Performance of selected ginger cultivars under organic farming

Treatments	Size of rhizome	Maturity (days)	Type of rhizome
T_1(Local variety)	Medium	210	Dry ginger
T_2 (Ginger variety (Varada)	Bold	200	Fresh and dry ginger
T_3(Ginger variety (Aswathy)	Bold	240	Fresh ginger
T_4(Ginger variety (Athira)	Medium bold	240	Fresh and dry ginger
T_5(Ginger variety (Karthika)	Medium bold	240	Fresh and dry ginger

Table 3. Quality traits and pest and disease incidence of selected ginger cultivars under organic farming

Treatments	Crude fibre (%)	Dry recovery (%)	Disease incidence (%)	Pest incidence (%)
T_1 (Local variety)	5.6	15.0	25.0	15.4
T_2 (Ginger variety Varada)	4.3	19.6	5.20	4.33
T_3 (Ginger variety Aswathy)	3.5	19.5	6.50	5.81
T_4 (Ginger variety Athira)	3.4	22.0	6.98	6.50
T_5(Ginger variety Karthika)	3.7	21.0	8.00	7.30
CD (0.05)			5.62	3.37

Table 4. Yield attributes and B:C Ratio of selected ginger cultivars under organic farming

Treatments	Yield (tha^{-1})	Number of primary rhizomes	B:C Ratio
T_1 (Local variety)	10.0	3.70	1.43
T_2 (Ginger variety Varada)	18.5	5.90	2.63
T_3 (Ginger variety Aswathy)	16.7	5.10	2.38
T_4 (Ginger variety Athira)	16.3	4.50	2.32
T_5 (Ginger variety Karthika)	15.0	4.20	2.14
CD (0.05)	0.61	2.30	0.15

Figure1: Field view

CONCLUSION

The Ginger variety Varada reported highest yield and benefit cost ratio and less pest and disease incidence than other ginger varieties in Kollam district under organic management practices.

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Thematic area: Crop improvement and biotechnology