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Performance of Different Chilli Genotypes in Southern Dry Zone of Karnataka

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Abstract

A field experiment was conducted during 2008-09. The results revealed that the growth parameters like plant height was significantly increased in CBP (78.23 cm) followed by PP-9808 (71.45 cm) and PP-97343 (70.78 cm). The lowest plant height was recorded in Samruddhi (67.30 cm) and was at par with local variety/ genotype. Maximum number of branches was recorded in Samruddhi (7.93) and was significantly higher than remaining varieties and however it was at par with PP-9808 (7.58). The lowest number of branches was recorded in HMT-1 (4.72) and was on par with local variety (4.73). The number of fruits per plant was significantly higher in CBP (98.26) followed by PP-9808 (82.9) and PP-97343 (81.83) and were at par with each other. The lowest number of fruits/plant was recorded in HMT-1 (51.5) and however the local variety recorded 73.10 number of fruits/plant which is at par with Samruddhi (71.83) and AR-12 (73.36). The yield of dry chilli varying significantly among the different varieties however maximum dry chilli yield was recorded in PP-97343 (754 kg/ha) followed by Samruddhi (640 kg/ha) and PP-9808 (610 kg/ha) and were on par with each other. The lowest dry chilli was recorded in HMT-1, AR-75 (3.75 kg/ha) and local variety (477 kg/ha) and however were at par with each other. The available nutrient status of soil after harvest of soil was increased under the genotype which yield less number of branches, low plant height and low fruit yield under local variety (289.0,16.8 and 162.0 kg/ha of N, P and K) and lowest nutrient status was recorded under the variety PP-9808 (276.2,14.8 and 149.09 kg/ha of N P and K), PP-97343 (282.2, 15.20 and 159.15 kg/ha of N, P and K) and Samruddhi (288.8,15.66 and 158.0 kg/ha of N, P and K) which yielded higher yield.

Key words : Chilli genotypes, Performance.

Chilli (*Capsicum annuum* L.) is a remunerative widely grown and indispensable spice crop and cash crop to the world food industries and cultivated in almost all states of India. The crop is commercially important in India for the domestic and for export purpose. Recently the researchers all over the world devoted considerable attention to the evaluation of suitable varieties for various a biotic stresses like soil moisture, temperature and nutrients. The increased yields in chilli can also be obtained by the use of improved varieties along with improved agronomic practices and adequate manuring. In this connection the present investigation was undertaken to study the performance of different chilli genotypes including the local varieties with recommended agronomic practices has been undertaken in southern dry zone of Karnataka. The available nutrient status of soil was increased under the genotype which yield less number of branches and low plant height and low fruit yield under local variety (289.0,16.8 and 162.0 kg/ha of N, P and K) and the lowest nutrient status was recorded under the variety PP-9808, PP-97343 and Samruddhi which yielded higher yield and also exhausted nutrient from soil and hence resulted in lower nutrient status of soil.

Methods

A field experiment on evaluation of performance

Table 1. Initial physico-chemical properties of experimental site.

	Parameters	Values
1	Soil reaction (pH)	7.85
2	Electrical conductivity (EC) dS/m	0.56
3	Available nitrogen (kg/ha)	296.7
4	Available phosphorus (kg/ha)	18.25
5	Available potassium (kg/ha)	165.3

Table 2. Growth and yield parameters of different genotypes of chilli in southern dry zone of Karnataka.

	Geno-types	Growth and yield parameters of chilli varieties/ genotypes: Plant height (cm)	Number of branches	Number of fruits/ plant	Dry fruits yield (kg/ha)
1	Samruddhi	67.30	7.93	71.83	640.70
2	PP-97343	70.78	5.41	81.83	754.60
3	PP-9808	71.45	7.58	82.90	611.16
4	CBP	78.23	5.58	98.26	370.35
5	AR-75	69.40	5.31	73.36	374.93
6	HMT-1	68.23	4.72	51.50	324.98
7	Local	67.76	4.73	73.10	476.83
	CD	1.60	0.69	5.70	105.76
	SE ±	0.52	0.22	1.85	34.32

Table 3. Nutrient status of soil under different chilli genotypes.

	Geno-types	Available nitrogen (kg/ha)	Available phosphorus (kg/ha)	Available potassium (kg/ha)
1	Samruddhi	288.8	15.66	158.0
2	PP-97343	282.2	15.20	159.15
3	PP-9808	276.2	14.80	149.09
4	CBP	270.0	13.56	145.60
5	AR-12	280.6	15.05	157.25
6	HMT-1	284.0	15.45	158.20
7	Local	289.0	15.80	162.00
	CD	10.56	3.56	4.25
	SE ±	3.29	1.32	1.40

of different chilli genotypes in southern dry zone of Karnataka was carried out at Krishi Vigyan Kendra Chamarajanagar during the *kharif* season of 2008-09. The experiment was laid out in randomized block design replicated thrice. The eah genotype treated as treatment imposed in aplot size of 5m × 5 m. The recommended dosage of fertilizers given to all the treatments as per the package of practice given for the zone-6. The initial physico-chemical properties of experimental site (Table 1) was analyzed using standard procedures as described by Jackson (1). The growth, yield parameters and yield data were statistically analyzed using standard procedures as given by Panse and Sukhatme (2).

Results and Discussion

The results on performance of different varieties of chilli revealed that the plant height was significantly increased in CBP (78.23 cm) followed by PP-9808 (71.45 cm) and PP-97343 (70.78 cm) (Tables 2 and 3). The lowest plant height was recorded in Samruddhi (67.30 cm) and was on par with local variety/ genotype. Maximum number of branches were recorded in Samruddhi (7.93) and was significantly higher than remaining varieties and however it was at par with PP-9808 (7.58). The lowest number of branches were recorded in HMT-1 (4.72) and was at par with local variety (4.73). The number of fruits per plant were significantly higher in CBP (98.26) followed by PP-9808 (82.9) and PP-97343 (81.83) and were at par with each other. Though the plant height in Samruddhi was less but retained more number of fruits and branches and was equally superior to that of PP-97343. Where as CBP, though recorded highest plant height (78.23 cm) but recorded lower number of branches and retained less number of fruits/plant than other varieties. In general, the number of fruits per plant retained were increased as the number of branches increased. Similar observations were also recorded by Bharamappa et al. (3). The lowest number of fruits/plant were recorded in HMT-1 (51.5) and however the local variety recorded 73.10 number of fruits/plant which is at par with Samruddhi (71.83) and AR-12 (73.36). The yield of dry chilli varying significantly among the different varieties. However, maximum dry chilli yield was recorded in PP-97343 (754 kg/ha followed by Samruddhi (640 kg/ha) and PP-9808 (610 kg/ha) and were on par with each other. The lowest dry chilli was recorded in HMT-1, AR-75 (3.75 kg/ha) and local variety (477 kg/ha) and however were at par with each other. The performance of Samruddhi and PP-9808 and PP-97343 were found to be the promising varieties can with stand drought and also yields better among all the varieties as these varieties retained good number of fruits per plant and more number of branches. Similar observations were also recorded by Tembhurne et al. (4). The available nutrient status of soil was increased under the genotype which yield less number of branches and low plant height and low fruit yield under local variety (289.0, 16.8 and 162.0 kg/ha of N, P and K) and the lowest nutrient status was recorded under the variety PP-9808, PP-97343 and Samruddhi which recorded

higher yield and also exhausted native nutrient from soil and hence resulted in lower nutrient status of soil (Table 3).

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