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Response of F1 hybrids of cucumber (*Cucumis sativus* L.) to different levels of fertilizers under Konkani agro climatic condition

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Abstract

Field experiment was conducted to on Effect of different levels of fertilizer on growth and yield of F₁ hybrids of cucumber (*Cucumis sativus* L.) under Konkani agro-climatic conditions at Department of Horticulture, College of agriculture, Dapoli, Dr. Balasaheb Sawant Konkani Krishi Vidyapeeth, Dapoli, Dist. Ratnagiri, (M.S.) during the *Rabi* season of 2014-15. A Split plot design was used with two replications, which included seven hybrids of cucumber. The sowing of the seeds of hybrids in the field during February 2015 with spacing 150x90cm. significant difference were observed among the hybrids for growth and yield parameters. The hybrid Ragini was found significantly superior than all the hybrids under study, recorded yield of 4.85 kg/vine and 32.63 mt/ha.

Keywords: Cucumber hybrids and growth parameter and yield

Introduction

Cucumber (*Cucumis sativus* L.) is one of the most common and popular vegetables belonging to family Cucurbitaceae. It is originated from India. The area under cucumber cultivation in Konkani region is about 460 ha. With annual production 5163 tonnes (Annon. 2014). Now a days cucumber hybrids were adopted by Indian farmers to make the optimum use of the land for increase production as well as productivity. The agroclimatic condition in Konkani region is suitable for cultivation of cucumber. Due to high yield potential of cucumber hybrids adequate supply of essential plant nutrients is essential during its growth period. The suitability of agroclimatic condition of Konkani region for cucumber cultivation it is necessary to investigate the comparative performance of cucumber hybrids at different fertilizer doses under Konkani agroclimatic condition.

Materials and Methods

The studies were carried out at Nursery no.4 at Department of Horticulture, College of agriculture, Dapoli, Dr. Balasaheb Sawant Konkani Krishi Vidyapeeth, Dapoli, Dist. Ratnagiri, (M.S.). The basic material for the study involved seven hybrids of Cucumber were grown in Split plot design with two replications during *rabi* 2014-2015. Each experimental plot of 10 vines. 5 vines were randomly selected for recording observation on Length of vine(m), Number of branches, days to appearance of first flower, Length/ weight and diameter of fruit(cm), Number of fruits/vine, Yield per vine(kg) and Yield/ha(mt).

Result and Discussion

The performance of various hybrids of cucumber under Konkani agro climatic condition is presented in table 1. the results revealed that differences due to various hybrids were highly significant for all the characters under study.

Among the different hybrids, length of vine measured highest in hybrid Sedona (6.86 m) and the minimum length of vine in hybrid Ragini (4.16 m). The highest number of branches (5.59) was recorded in hybrid Malini and the lowest number of branches in Sheetal (3.67).

It was observed that the hybrid Dynasty required lowest days (25.70) to appearance of first male flower and first female flower (31.70). The highest days to appearance of first male flower (51.90) and female flower (57.90).

For fruit length, diameter, weight and flesh thickness of the fruit showed significant differences among the hybrids.

The maximum length of fruit (20.75), diameter of fruit (5.05 cm), fruit weight (194.50 g) and flesh thickness (1.51 cm) were recorded in hybrid Malini. While lowest length of fruit (14.40 cm), diameter (4.17 cm), weight (137.33 g) and flesh thickness of fruit (1.32 cm) were observed in hybrid Sedona.

Among the various hybrids it was observed that the highest number of fruits (25.13), highest fruit yield per vine (4.85 kg) and fruit yield per hectare (32.63 mt) in hybrid Ragini and lowest fruit yield per vine (1.44 kg) and fruit yield per hectare (8.46 mt) recorded in Sheetal.

Table 1: Effect of different levels of fertilizer on growth and yield of F₁ hybrids of cucumber (*Cucumis sativus* L.) under Konkan agro-climatic conditions (Rabbi 2014)

Sr. No	Hybrids	Length of vine (m)	No. of branches	Days to first male flower	Days to first female flower	Fruit length (cm)	Fruit weight (g)	Fruit diameter (cm)	Number of fruits per vine	fruit yield per vine (kg)	fruit yield t/ha
1	T1	6.06	5.17	36.53	42.53	18.91	189.90	4.76	22.53	4.27	27.81
2	T2	4.16	4.84	36.07	42.07	17.47	185.53	4.58	25.13	4.85	32.63
3	T3	4.28	3.67	25.70	31.70	15.88	164.07	4.52	24.83	4.19	26.63
4	T4	5.99	4.65	42.60	48.60	15.51	160.77	4.74	24.83	4.24	27.10
5	T5	5.24	5.59	42.47	48.47	20.75	194.50	5.05	23.00	4.38	28.27
6	T6	4.85	3.67	51.90	57.90	14.69	165.90	4.78	8.83	1.44	8.46
7	T7	6.86	4.30	39.47	45.47	14.40	137.33	4.17	18.37	2.59	16.25
Mean		5.35	4.56	39.25	45.25	16.80	171.14	4.66	21.08	3.71	23.88
S.E.M ±		0.0011	0.071	0.202	0.224	0.314	0.355	0.073	0.089	0.042	0.321
C.D (0.05)		0.0037	0.283	0.613	0.702	0.962	1.056	0.228	0.242	0.147	0.973

Conclusion

NPK had positive effect on different growth parameters of Cucumber F₁ hybrids. Among the different level of NPK F₃ (250:100:50) was found that the most suitable dose for growth parameters and yield of Cucumber F₁ hybrids.

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