SHORT COMMUNICATION

PERFORMANCE OF STRAWBERRY (*FRAGARIA X ANANASSA* DUCH.) GENOTYPES FOR GROWTH AND YIELD CHARACTERS IN HILL ZONE OF KARNATAKA

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Received-11.10.2017, Revised-24.10.2017

Abstract: The study was conducted on performance of seven genotype of strawberry (*Fragaria x ananassa* Duch.) at College of Horticulture Mudigere, Karnataka in naturally ventilated polly house during 2015-2016 the significant variation was occurred for all vegetative and Yield parameters. The genotype Sabrina accounted maximum plant height (32.30 cm), number of trifoliate leaves (30.40), plant spread (48.47 cm in north and south direction whereas 53.93 cm in east and west direction), leaf area (206.04 cm^2), leaf area index (6.95), plant dry weight at harvest (29.04 g), chlorophyll content (2.33 mg/100 g), number of fruits per plant (22.36) and yield per plant (380.29 g). number of runners per plant was maximum (10.70) in Cristle , weight of fruit was maximum (20.01 g) in Fortuna, maximum (4.43 cm) fruit length was recorded in genotype Cristle followed by Fortuna (4.12 cm), the breadth and volume of fruit was observed maximum in genotype Fortuna that was 3.28 cm and 24.37 cc respectively Among different genotypes evaluated the Sabrina accounted maximum for growth and yield parameters of strawberry..

Keywords: Genotypes, Strawberry, Growth, Yield, Hill zone

INTRODUCTION

Strawberry (*Fragaria* x *ananassa* Duchesne) is one of the most delicious, refreshing and nutritious soft fruits of the world. It belongs to family Rosaceae and native to America (Galletta *et al*., 1990). In India, Strawberries were first introduced by NBPGR Regional Research Station, Shimla (Himachal Pradesh) in the early sixties. At present, the strawberry is being grown in a wide range of climatic zones extending to temperate, Mediterranean, Sub-tropical zones. Due to octaploid nature, considerable variations exist in various cultivars and these cultivars helped the crop to spread in cool place of India. It is now being grown in Shimla, Solan, Bilaspur, Kangra, Kullu, Palampur (Himachal Pradesh), Deharadun, Saharanpur (Uttaranchal), Muzaffarnagar, Ghaziabad (Uttar Pradesh), Hoshiarpur, Ludhiana, Jalandar, Patiala (Panjab), Gurgaon, Hisar, Karnal (Haryana), the work on identification of suitable high yielding variety of strawberry for different agro-climatic conditions remains scanty in literature. With the introduction of new cultivars, it was therefore felt imperative to evaluate for its feasibility and record pomological descriptions of strawberry cultivars for their proper identification and highlighting useful characters, which could be exploited for bringing about improvement in strawberry production in the state. Keeping these points in view the present investigation work entitled "Evaluation of different genotypes for growth, yield and quality of strawberry (*Fragaria X ananassa* Duch.*)* under naturally ventilated polyhouse in hill zone of Karnataka" was conducted in a low cost polyhouse .

MATERIAL AND MATHODE

The present investigation entitled "Evaluation of different genotypes for growth, yield and quality of strawberry (*Fragaria X ananassa* Duch.*)* under naturally ventilated polyhouse in hill zone of Karnataka" was carried out at college of Horticulture Mudigere, from October 2015 to march 2016, the experiment was laid out in completely randomized block design. In the present study seven genotypes of strawberry and considered each as single treatment and replicated thrice. The genotypes taken for evaluation are Winter Dawn, Sweet Charlie, Safari, Fortuna, Cristle, Elyana, Sabrina. The beds of 45 cm height, 60 cm width was prepared and mulched with black polyethene. The planting was done at spacing of 30 cm x30 cm, the morphological observation was recorded at an interval of 30, 60, 90 and 120 days after planting.

RESULT AND DISCUSSION

The various vegetative parameters like plant height, number of trifoliate leaves, plant spread, number of runners per plant, leaf area, leaf area index, plant dry weight at harvest, chlorophyll content, number of fruits per plant, yield per plant, weight of fruit, length of fruit, diameter of fruit and volume of fruit.

The genotype Sabrina accounted maximum plant height (32.30 cm), number of trifoliate leaves (30.40), plant spread (48.47 cm in north and south direction whereas 53.93 cm in east and west direction), leaf area (206.04 cm^2), leaf area index (6.95), plant dry weight at harvest (29.04 g),

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chlorophyll content (2.33 mg/100 g), number of fruits per plant (22.36) and yield per plant (380.29 g). The genotype Fortuna was on par with Sabrina for all the above parameters, where as the minimum plant height was recorded in Winter Dawn that is 21.50 cm, the minimum plant spread (31.87 cm in east and west direction whereas 32.37 in north and south direction) was

Table 1. Performance of strawberry genotypes for vegetative characters

Genotypes	Plant height (cm)	Number of leaves	Plant spread (cm)		R/P	LA (cm^2)	LAI	TDMW (g)	Chlorophyll content (mg/100g)
			N – S	E – W					
Winter Dawn	21.50	15.40	31.87	32.37	4.10	115.37	1.97	18.87	1.71
Sweet Charlie	26.27	21.20	43.60	46.37	4.83	165.72	3.90	22.24	1.94
Safari	24.87	15.27	33.63	36.20	4.17	100.59	1.70	18.45	1.62
Fortuna	27.63	22.50	41.20	42.40	8.33	182.69	4.50	25.07	2.06
Cristle	27.30	20.50	40.40	47.37	10.70	162.85	3.70	20.38	1.92
Elyana	26.50	19.43	40.10	37.83	6.70	129.84	2.80	19.28	1.85
Sabrina	32.30	30.40	48.47	53.93	1.67	206.04	6.95	29.04	2.33
S. Em ±	**0.34**	**0.47**	**0.62**	**0.64**	**0.49**	**9.69**	**0.13**	**0.36**	**0.11**
C. D. (P = 0.05)	**1.05**	**1.45**	**1.90**	**1.96**	**1.49**	**29.87**	**0.40**	**1.10**	**0.33**

R/P-Runners/plant, LA- Leaf Area, LAI-Leaf Area Index, TDMW-Total Dry Matter Weight

recorded in Winter Dawn. the minimum number of trifoliate leaves (15.27), leaf area (100.59 cm^2), leaf area index (1.70), plant dry weight at harvest (18.45 g), chlorophyll content (1.67 mg/100 g of fresh weight), number of fruits per plant (14.67) and yield per plant (191.77 g) was recorded minimum in genotype Safari where as the number of runners per plant was maximum (10.70) in Cristle where as minimum (1.67) was reported in genotype Sabrina, weight of fruit was maximum (20.01 g) in Fortuna followed by Sabrina (16.01 g) while, minimum (12.87 g) was observed in genotype Cristle, the maximum (4.43 cm) fruit length was recorded in genotype Cristle followed by Fortuna (4.12 cm) where as minimum (3.11 cm) was recorded in Sabrina, the breadth and volume of fruit was observed maximum in genotype Fortuna that was 3.28 cm and 24.37 cc respectively where as minimum was recorded in genotype Safari that was 2.55 cm and 12.12 cc respectively.

Table 2. Performance of strawberry genotypes for yield attributes

Genotypes	Number of fruits per plant	Fruit weight (g)	Length of fruit (cm)	Diameter of fruit (cm)	Volume of fruit (cc)	Yield per plant (g)
Winter Dawn	14.83	12.94	3.49	3.10	16.39	192.73
Sweet Charlie	19.24	13.45	3.15	3.05	13.50	259.65
Safari	14.67	13.07	3.11	2.55	12.12	191.77

Fortuna	20.91	20.01	4.12	3.28	24.37	367.24
Cristle	18.09	12.87	4.43	2.56	12.07	237.83
Elyana	15.53	15.03	3.27	2.93	14.07	233.87
Sabrina	22.36	16.01	3.67	3.16	17.72	380.29
S. Em ±	0.35	**1.43**	**0.18**	**0.12**	**1.58**	**25.86**
C. D. (P = 0.05)	**1.08**	**4.42**	**0.56**	**0.38**	**4.87**	**79.70**

The above results are in accordance with the findings of Singh *et al.* (2012), Hossan *et al.* (2013), Ankita Chandel (2014) and Uddin *et al.* (2016). The variation in cultivar may be due to genetic and environmental interaction.

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