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Fruit Development Pattern in Accessions of Jackfruit during 2014-15 and 2015-16

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ABSTRACT

An investigation of studies was carried on the fruit development pattern in accessions of jackfruit during 2014-15 and 2015-16, the accession A8 recorded a significantly higher number of female spikes (77.67 and 76.00, respectively), significantly higher values for number of fruit set (49.00 and 47.67, respectively) were recorded in accession A1, the accession A6 took the maximum number (76.96 and 76.29, respectively) of days to fruit set, the maximum number of fruits per tree was observed in accession A1 (38.67 and A8 37.00 respectively). The high percentage of fruit set was observed in accession A1 (65.01) during 2014–15 and in accession A8 (69.51) during 2015–16. the significantly maximum days taken for fruit maturity were recorded in accession A7 (104.60 days during 2014-15) and in accession A5 (106.50 days during 2015-16). during both the year of study the maximum percentage of fruits were produced on primary branches (60.59% and 55.78%, respectively), followed by the secondary (22.30% and 21.78%, respectively), and tertiary branches (9.55% and 9.38%, respectively). During 2014–15 and 2015–16, significantly higher values for fruit weight (24.83 kg and 24.00 kg, respectively), fruit width (42.00 and 43.33 cm, respective years) were recorded in accessions A7 whereas the significantly high fruit length was observed in accession A5 (54.83 and 52.67 cm, respective years). During 2014–15 and 2015–16, significantly higher values for total number of flakes per fruit (141.33 and 140.00, respectively), flake weight (46.50 g and 46.33 g, respectively), flake length (8.43 cm and 8.33 cm, respectively) and flake breadth (4.07 cm, 4.20 cm, respectively) were recorded in accessions A7. During 2014–15 and 2015–16, the accession A6 recorded a significantly maximum seed weight (7.70 g and 7.27 g in 2015–16), seed length (2.87 cm and 2.90 cm, for respective years) and seed width (1.57 cm and 1.63 cm, for respective years)

Key words: *Jackfruit, Edible and Non Edible Portions and Seed Shape, Color, Weight*

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INTRODUCTION

Jackfruit (*Artocarpus heterophyllus* Lam.) belongs to the family Moraceae. It is a tetraploid with a somatic chromosome number of 2n=4x=56[2,4]. Believed to have originated in the rain forests of the Western Ghats of India, jackfruit i**s** cultivated throughout the low lands in South and Southeast Asia. It is the largest tree-borne fruit in the world, reaching up to 50kg in weight and 60–90 cm in length (recently, a fruit weighing 81kg was also reported from Panrutti, India).The major jackfruit producing countries are Bangladesh, India, Myanmar, Nepal, Thailand, Vietnam, China, the Philippines, Indonesia, Malaysia and Sri Lanka. India is the second largest producer of the fruit in the world, and is considered the motherland of jackfruit. In India, jackfruit occupies 1.49 lakh hectare area with a production of 20.37 lakh metric tons per hectare. It is cultivated in Kerala, Assam, Tamil Nadu, Karnataka, West Bengal, Andhra Pradesh, Maharashtra, and Andaman and Nicobar Islands. Kerala is the largest producer of jackfruit among all the states where it occupies 0.38 lakh hectare area with a production of 5.51 metric tons per hectare. Haque[6] investigated on the fruit characteristics of a large number of jackfruit germplasm and observed a wide variation in fruit size, shape, percentage of edible and non edible portions and seed shape, color, weight etc. were also different among germplasm. Fruit growth includes growth of whole fruit and its different parts in respect of weight, length, and width. In jackfruit, diverse variations are found in both qualitative and quantitative traits when harvested from different fruit bearing positions of the plant. Every jackfruit tree has different in phyllotaxy, canopy size, fruit size and shape, pulp size and shape, and also vary in consistency, sweetness, flavor, taste and nutrient contents as well as in overall quality along with bearing positions. In case of good variety, knowledge regarding fruit growth, pattern of fruit set and quality of fruits in different bearing positions of a jackfruit plant is very much essential. Fruit bearing position on the trunk could influence the fruit growth and its nutritional quality. Literature regarding the characteristics of jackfruit borne on different positions of the tree is very scanty.

MATERIAL AND METHODS

The present investigation on 'Studies on fruit development pattern in accessions of jackfruit during 2014-15 and 2015-16' was carried out at the ICAR-Indian Institute of Horticultural Research (IIHR), Hessaraghatta Lake Post, Bangalore. The materials and methods used, techniques adopted and observation recorded during the course of the investigations are furnished in this chapter. Nine year old of healthy ten accessions have been selected for this study. The parameters were used *viz.*, total number of female spike, number of fruit set, days to fruit set, percent of fruit set, days to fruit maturity, number of fruits per tree, fruit weight, fruit length, fruit breadth, number of flakes per fruit, flake length, flake breadth, seed weight, seed length and seed breadth. The design adopted for the experiment was randomized block design (RBD) (Gomez and Gomez, 1984). In this, a total of 10 accessions were considered as treatment from each accession and three trees were considered as replications.

Per cent fruit borne on different sections of plant

Total number of mature fruits of each accession was counted and number of fruits on each section (trunk, primary, secondary, tertiary and fourth) were also recorded separately. Percent fruit borne on different section was calculated as follows:

$$\text{Percent of fruit born on aparticular section} = \frac{\text{Total number of fruit on the section}}{\text{Total number of fruits on the accession}} \times 100$$

RESULTS AND DISCUSSION

Fruiting attributes

The results of the total number of female spikes produced in different accessions of jackfruit are furnished in Table 1. In 2014–15, among the 10 accessions studied, accessions A8 and A1 recorded significantly higher total number of female spikes (77.67 and 75.33, respectively). On the other hand, significantly lower total number of female spikes was observed in A9 (57.00). In 2015–16, a similar trend was noticed, wherein the highest number of female spikes was seen in accessions A8 and A1 (76.00 and 75.00, respectively) and the lowest was in A9 (55.67). It is believed that this might be due to genetic variation in the different accessions of jackfruit as well as the duration of the flowering season. In this context, Mohammad Abdus Samad reported a variation in the percentage of male and female spikes in different jackfruit germplasm. Similar findings were reported by Ullah and Haque[6,16] and Md Tanvir *et al.*[8]. Observations on the number of fruit set in different accessions of jackfruit during 2014–15 revealed significantly maximum number of fruit set in A1 (49.00) and A5 (43.33). On the other hand, accession A4 recorded the minimum number of fruit set (31.00). In 2015–16, significantly maximum number of fruit set was noticed in A1 (47.67), whereas A8 (46.67) and A2 (45.33) were on par with A1. Minimum number of fruit set (31.00) was observed in A4. Although accessions A1 and A8 recorded the maximum number of fruits per tree, they recorded lower fruit weight, which may be due to more number of fruits. However, these accessions had the maximum number of female spikes coupled with fruit set. Further, during the fruit development phase, due to the competition for photosynthates, the accumulation in individual fruits may be reduced, resulting in lower fruit weight. Alternatively, the flakes per seed may be a genetic character and may also be a contributor for lower total fruit weight. The variation in the fruits produced per tree and the fruit weight among the different accessions was also reported by Ullah and Haque[16], Rai *et al.*[11] and Md Tanvir *et al*[8]. Observations on the days to fruit set that were recorded in different accessions of jackfruit are presented in Table1. In 2014–15, accession A6 and A7 took the maximum number of days (76.96 and 72.57, respectively) to fruit set. Minimum number days to fruit set (63.50) were observed in A1. In 2015–16, the trend noticed was similar to that in 2014–15. Thus, the days required to fruit set in accession A6 and A7 were 76.29 and 73.57, respectively. The data presented in Table 1 on percent fruit set in different accessions of jackfruit reveals that all accessions, except A8 and A4, have recorded highest percentage of fruit set. Among the two exceptions, accession A4 has recorded the lowest percentage of fruit set (53.37) in 2014–15. On the other hand, during 2015–16, all accessions, except A7, recorded higher percent fruit set, with the lowest percentage of fruit set (61.27) seen in A7. Accordingly, this trend was noticed for number fruit per tree, thereby recording maximum number fruit per tree. It can therefore be stated that the variation in yield attributes that was noticed in the different accessions in the present study was initiated with fruit set as the first step. This attribute may be the genetic character of the accessions under study. In addition, the size of the fruit also linked with the duration of the sink development. Similar results were reported by Ullah and Haque[16], Rai *et al.*[11] and Suvra[14].During 2014–15, the accessions A7, A5 and A6 took more number of days to fruit maturity (104.60, 104.50 and 99.96, respectively). The minimum number of days was seen in A1 (74.50 days). On the other hand, in 2015–16, days to fruit maturity was significantly maximum in accession A5 (106.60), which was on par with A7 (102.27). Minimum days to fruit maturity were seen in accession A1 (76.17).The highest number of fruits per tree was observed in accessions A1 and A5 (38.67 and 36.33, respectively). The lowest number of fruits per tree was observed in accession A4 (23.67) during 2014–15. A similar trend was not observed in 2015–16. Accordingly, the highest number of fruits per tree (37.00) was observed in accession A8,

which was on par with accession A5 (33.67) and A1 (35.33). The lowest number of fruits per tree was found in accession A4 (24.33). Results related to the total number of female spikes and the percent of fruit set indicate that accessions A1 and A8, which recorded more fruits, also recorded the maximum total number of female spikes and percent of fruit set. This indicates a direct relation between these attributes.

Fruiting pattern and duration

Fruit borne on different branches in jackfruit germplasm

During 2014–15, fruit bearing in jackfruit was found to be cauliflorous; that is, the fruits were borne on the trunk and branches presented at (Table 2). The accession under study was seen to bear fruits on the trunk, and the primary, secondary, tertiary, fourth, fifth and sixth branches as well. On an average, maximum number of fruits was borne on primary branches (60.59%), followed by secondary (22.30%) and tertiary branches (9.55%), and the trunk (3.85%). However, the number of fruits was the lowest on the fourth branches (3.72%). During 2015–16, on an average, maximum number of fruits was borne on primary branches (55.78%), followed by secondary (21.78%), tertiary and fourth branches (9.38%). The lowest number of fruits borne on the trunk was (3.65%). Additionally, accessions A1 and A8 also recorded significantly maximum percent of fruit borne on different branches such as the primary, secondary, tertiary and fourth branches, thus contributing to more fruits per tree. The variation reported among the different accessions is believed to be due to attributes, including the number of female spikes and percent of fruit set coupled with the fruiting pattern. However, the variation found in these attributes may be attributed to the genetic characters of the accessions that were studied. In addition, it is believed that the response of these accessions to climatic conditions would also have altered the fruit setting pattern because environmental conditions are known to influence pollen fertility and fruit set. Further, Rai *et al.*[11] reported that the number of fruits in jackfruit genotypes ranged from 4 (HPJS-9/2) to 52 (HPJS4/5). Similar findings were reported by Ali *et al.*[1], Rai and Reddy,[10,12] and Ullah and Haque[17].

Fruit yield attributes

The results of fruit weight observed in different accessions of jackfruit are furnished in Table 3. In 2014–15 and 2015–16, highest fruit weight was observed in A7 (24.83 and 24.00kg), whereas lowest fruit weight of 6.00 kg and 6.67 kg, respectively, was observed in accessions A8 and A2. Further, the heavier fruit (accession A7) was observed to have a correlation with fruit maturity. Accordingly, the number of days for fruit maturity was maximum, having sufficient time to accumulate the biomass and result in heavier fruits. Similarly, accession A2 used the minimum number of days for fruit maturity, resulting in small-sized fruits. Observations recorded with respect to fruit length (cm) and fruit breadth (cm) in different accessions indicated that during 2014–15 and 2015–16 (Table 4), significantly high fruit length was observed in A5 (54.83 cm and 52.67 cm) and significantly high fruit width was observed in accession A7 (42.00 cm and 43.33 cm), respectively. However, significantly low fruit length was observed in accession A8 (30.67 cm and 21.67 cm in 2014–15 and 2015–16, respectively) and significantly low fruit width was observed in accession A2 (30.67 cm and 22.00 cm, respectively) during 2014–15 and 2015–16). Thought the accession A7 and A5 which recorded maximum fruit weight, flake size, number flakes per fruit was directly associated fruit length and width. Similarly, Hossain *et al.*[7] showed that the average length of the fruit and its width increased rapidly up to 60 days after fruit set (DAFS), and then it increased slowly and eventually became steady at 80 DAFS. Similar findings were also reported by Uday[15], who observed the fruit length of various jackfruit clones and found that it ranged from 27.18 cm to 38.56 cm at 150DAFS. Findings by Reddy *et al.*[12], Haque[5], Nazrul *et al.*[9], Haque,[6] and Ali *et al.*[1] also indicated similar patterns.

Physical attributes of fruit

The other attribute that was studied during 2014–15 and 2015–16 was the number of flakes per fruit. Significantly high values for total number of flakes per fruit (141.33 and 140.00, respectively) were observed in accession A7, whereas significantly low number of flakes was observed in A9 (57.00). The accession A7 recorded higher values for percent of fruit set as well as total number of female spikes, which may be due to the correlation with total number of flakes per fruit. Generally, heavier fruits had more number of flakes per fruit; however, in some accessions, there was no relation with fruit weight because the flakes were seen to be bigger but less in number. As before, this is assumed to be due to the genetic characteristics of the accessions under experimentation. Similar findings were also reported by Hossain *et al.*[7], Sarker *et al.*[13] and Ullah and Haque[16].The data on flake weight that was recorded in different jackfruit accessions is presented in Table 3. During 2014–15 and 2015–16, significantly higher values for flake weight (46.50 g and 46.33 g, respectively) were recorded in accession A7 and lower values for flake weight were noticed in accession A2 (22.50 g and 22.67 g, respectively). Average flake weight was seen to be was more in 2015–16 than in 2014–15.Results of the flake length observed in different jackfruit accessions are presented in Table 5. The data collected revealed that during 2014–15 and 2015–16, significantly higher values for flake length (8.43 cm and 8.33 cm, respectively) were recorded in accession A7 and lower values for flake length were reported in accession A2 (5.10 cm and 5.23 cm, respectively). The average flake length was observed to be more during 2015–16 than 2014–15 (Table 3). The results of flake breadth data collected in different accessions (Table 21) during 2014–15 revealed that accessions A7, A6 and A8 recorded significantly higher values for flake breadth (4.07 cm, 4.00 cm and 3.83 cm, respectively). On the other hand, lower values for flake breadth were reported in accession A1 (3.17 cm). During 2015–16, significantly higher values for flake breadth (4.20 cm) were recorded in accession A7, which was on par with accession A6 (4.07 cm). Lower values for flake breadth were found in accession A9 (3.30 cm). Average breadth of flakes was observed to be more during 2015–16 as compared to that observed during 2014–15. Further, it was seen that the trend reported across different accessions was not consistent between the two years of experimentation (Table 3).

Seed attributes

Observations on seed weight, seed length and seed width in different accessions of jackfruit (presented in Table 3) indicated that significantly higher seed weight was recorded in accessions A6 (7.70g during 2014–15) and A5 (7.57g in 2015–16). Accession A6 had moderately heavy fruit weight and flake weight. This is assumed to be the reason for heavier seed weight in accession A6. A study report by Reddy *et al.* (2004) indicated that seed weight varied from 5.00g to 12.30g among the different accessions of jackfruit that were collected from south Karnataka. Similar findings were also reported by Hossain *et al.*[7] and Sarker *et al.*[13]. Observation on seed length (2.87 cm and 2.90 cm) and seed width (1.57 cm and 1.63 cm), were seen to be higher in accession A6 during both years of study. Significantly minimum seed length (2.20 cm and 2.23 cm) was recorded in A2, whereas seed width was lower in accession A10 (1.27 cm and 1.27 cm) during 2014–15 and 2015–16, respectively. Prior studies by Ali *et al.* (2015) observed that maximum seed length and width were seen in AH Bur-002 (3.1 cm and 2.2 cm, respectively) and minimum seed length and width (1.8 cm and 1.3 cm, respectively) were seen in AHBur-001. The differences in seed length and seed width could be attributed to the highly heterozygous behaviour of the accessions. This might also be due to the genetic variations in the different accessions of jackfruit as reported by Hossain *et al.*[7], Sarker *et al.*[13], Reddy *et al.*[12] and Ali *et al.*[1].

Table 1: Total number of female spikes, number of fruits set, days to fruit set, per cent of fruit set, days to fruit maturity and number of fruits per tree during 2014 to 2015 and 2015 to 2016 in different jackfruit accessions

Accessions	Total number of female spikes		Number of fruits set		Days to fruit set		Per cent of fruit set		Days to fruit maturity		Number of fruits per tree	
	2014-15	2015-16	2014-15	2015-16	2014-15	2015-16	2014-15	2015-16	2014-15	2015-16	2014-15	2015-16
A1	75.33	75.00	49.00	47.67	63.50	63.50	65.01	65.50	74.50	76.17	38.67	35.33
A2	66.67	70.33	43.00	45.33	66.46	67.46	64.58	67.46	82.80	83.13	32.67	29.33
A3	59.67	63.00	36.00	39.00	65.00	66.00	60.20	61.33	85.00	87.33	25.00	27.67
A4	58.00	57.67	31.00	38.67	66.09	67.76	53.37	63.76	87.76	88.76	23.67	24.33
A5	68.33	68.33	43.33	41.67	72.07	69.74	63.41	61.84	104.50	106.50	36.33	33.67
A6	69.00	66.33	39.00	41.67	76.96	76.29	56.58	63.96	99.96	96.96	32.00	30.33
A7	66.67	63.00	38.00	40.33	72.57	73.57	57.10	61.27	104.60	102.27	31.00	29.33
A8	77.67	76.00	41.67	46.67	64.51	66.51	53.65	69.51	85.18	86.18	33.33	37.00
A9	57.00	55.67	33.00	38.33	68.17	68.84	57.98	68.51	89.84	92.51	26.33	27.67
A10	59.00	56.67	32.00	39.00	68.71	69.04	54.26	68.94	90.31	90.97	24.67	26.33
Mean	65.73	65.20	38.60	41.83	68.40	68.87	58.61	65.21	90.44	91.08	30.37	30.10
S.Em±	1.22	1.38	1.85	1.42	1.48	1.28	2.83	4.01	1.74	1.66	1.32	1.64
CD @ 5%	3.63	4.09	5.48	4.21	4.39	3.79	8.41	11.91	5.18	4.92	3.92	4.86

Table 2: Fruits borne on different branches of jackfruit in different accessions during 2014-2015 and 2015-16

Accessions	Trunk				Primary				Secondary				Tertiary				Fourth				Total	
	2014-15		2015-16		2014-15		2015-16		2014-15		2015-16		2014-15		2015-16		2014-15		2015-16		2014-15	2015-16
	Mean	%	Mean	%	Mean	%	Mean	%	Mean	%	Mean	%	Mean	%	Mean	%	Mean	%	Mean	%		
A1	0.67	1.73	1.00	2.83	24.00	62.08	20.67	58.49	9.33	24.13	7.67	21.70	4.33	11.20	3.00	8.49	0.33	0.85	3.00	8.49	38.66	35.34
A2	0.67	2.05	0.00	0.00	20.67	63.25	19.33	65.91	8.67	26.53	6.00	20.46	2.00	6.12	2.00	6.82	0.67	2.05	2.00	6.82	32.68	29.33
A3	0.33	1.32	1.00	3.62	17.00	68.00	15.67	56.65	5.33	21.32	6.33	22.89	1.67	6.68	2.33	8.42	0.67	2.68	2.33	8.42	25.00	27.66
A4	0.67	2.83	1.00	4.11	16.67	70.40	13.67	56.19	4.00	16.89	5.00	20.55	1.67	7.05	2.33	9.58	0.67	2.83	2.33	9.58	23.68	24.33
A5	1.00	2.75	1.00	2.97	17.33	47.70	14.00	41.58	9.67	26.62	8.67	25.75	6.00	16.52	5.00	14.85	2.33	6.41	5.00	14.85	36.33	33.67
A6	1.67	5.22	1.33	4.34	16.33	51.03	15.33	49.98	8.00	25.00	6.67	21.75	3.67	11.47	3.67	11.97	2.33	7.28	3.67	11.97	32.00	30.67
A7	1.33	4.29	1.67	5.69	17.00	54.84	14.67	50.02	6.67	21.52	6.33	21.58	4.00	12.90	3.33	11.35	2.00	6.45	3.33	11.35	31.00	29.33
A8	3.33	9.99	2.67	7.22	22.67	68.02	22.67	61.27	5.33	15.99	7.00	18.92	1.67	5.01	2.33	6.30	0.33	0.99	2.33	6.30	33.33	37.00
A9	1.33	5.05	1.00	3.62	16.33	62.02	16.33	59.04	5.67	21.53	6.33	22.89	2.00	7.60	2.00	7.23	1.00	3.80	2.00	7.23	26.33	27.66
A10	0.67	2.72	0.33	1.24	16.00	64.86	16.00	60.02	5.00	20.27	5.67	21.27	2.00	8.11	2.33	8.74	1.00	4.05	2.33	8.74	24.67	26.66
Mean	1.17	3.85	1.10	3.65	18.40	60.59	16.83	55.78	6.77	22.30	6.57	21.78	2.90	9.55	2.83	9.38	1.13	3.72	2.83	9.38	30.37(100)	30.17(100)
Range	0.33-3.33		0.00-2.67		16.0-24.00		13.67-22.67		4.00-9.67		5.00-8.67		1.67-6.00		2.00-5.00		0.33-2.33		2.00-5.00		23.68-38.66	24.33-37.00
SD	0.86		0.72		2.93		3.02		2.01		1.03		1.51		0.95		0.79		0.95		5.20	4.03
S.Em±	0.27		0.23		0.93		0.96		0.63		0.33		0.48		0.30		0.25		0.30		1.65	1.28

Table 3:Fruit yield attributes, physical attributes of fruits and seed attributes during 2014 to 2015 and 2015 to 2016 in different jackfruit accessions

Accessions	Fruit weight (Kg)		Fruit length (cm)		Fruit breadth (cm)		Number of flakes per fruit		Flakes weight (g)		Flakes length (cm)		Flakes breadth (cm)		Seed weight(g)		Seed length (cm)		Seed breadth (cm)	
	2014-15	2015-16	2014-15	2015-16	2014-15	2015-16	2014-15	2015-16	2014-15	2015-16	2014-15	2015-16	2014-15	2015-16	2014-15	2015-16	2014-15	2015-16	2014-15	2015-16
A1	6.83	7.17	32.00	33.33	23.00	23.67	83.67	91.33	26.50	26.00	5.23	5.60	3.17	3.50	6.67	6.83	2.37	2.57	1.40	1.43
A2	7.33	6.67	31.67	30.67	24.33	22.00	68.33	76.67	22.50	22.67	5.10	5.23	3.43	3.43	6.17	6.37	2.20	2.23	1.43	1.43
A3	10.17	10.50	41.33	35.67	30.67	23.33	104.67	110.00	24.50	25.17	5.83	5.77	3.63	3.63	7.00	6.90	2.67	2.63	1.33	1.33
A4	11.00	13.00	40.67	43.00	31.33	31.67	115.67	120.67	29.83	29.67	6.80	6.67	3.53	3.57	7.37	7.23	2.77	2.80	1.53	1.50
A5	21.17	19.50	54.83	52.67	34.67	33.00	138.00	131.00	33.17	34.17	6.97	6.87	3.60	3.67	7.60	7.57	2.47	2.60	1.40	1.47
A6	15.33	15.50	43.17	42.67	33.00	34.00	125.00	120.33	28.17	27.50	6.33	7.00	4.00	4.07	7.70	7.27	2.87	2.90	1.57	1.63
A7	24.83	24.00	50.33	51.67	42.00	43.33	141.33	140.00	46.50	46.33	8.43	8.33	4.07	4.20	5.23	7.50	2.60	2.67	1.43	1.50
A8	6.00	6.83	30.67	31.67	21.67	23.00	89.33	80.67	25.17	26.50	5.63	5.50	3.83	3.75	4.83	6.17	2.33	2.43	1.33	1.43
A9	12.17	11.17	41.00	38.67	31.33	29.67	115.00	103.33	23.17	23.33	5.70	5.43	3.40	3.30	5.20	7.00	2.47	2.33	1.40	1.37
A10	8.33	7.83	32.67	34.00	27.00	25.33	81.00	83.33	30.50	30.67	6.03	6.27	3.53	3.53	5.10	6.00	2.57	2.60	1.27	1.27
Mean	12.32	12.22	39.83	39.40	29.90	28.90	106.20	105.73	29.00	29.20	6.21	6.27	3.62	3.67	6.29	6.88	2.53	2.58	1.41	1.44
S.Em±	0.72	0.56	1.28	1.59	1.30	1.05	2.08	1.78	0.56	0.69	0.20	0.18	0.13	0.10	0.13	0.19	0.06	0.06	0.04	0.05
CD @ 5%	2.13	1.66	3.80	4.72	3.87	3.11	6.18	5.30	1.68	2.05	0.60	0.55	0.40	0.31	0.39	0.57	0.19	0.17	0.11	0.15

CONCLUSION

The results of the present study have provided in-depth basic information on the fruit development pattern of accessions of jackfruit during both the year of study. Significantly higher values for number of fruit set, days to fruit set, number of fruits per tree were recorded in accession A1 and A8. The higher values for fruit born on different branches were recorded in accessions A1, A7 and A5. The higher values were recorded for fruit physical attributes, fruit yield attribute, fruit flake attribute and seed attribute were recorded in accessions A7 and A5.

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