Jamun (Syzygium cuminii Skeels) is an under exploited indigenous fruit tree of India. It is a hardy crop and can tolerate drought as well as heavy rainfall conditions. The tree is evergreen but sheds its leaves under drought conditions. It produces purple delicious fruits with prominent seeds. Because of its medicinal values and suitability for planting as wind brake, its demand is increasing day by day and that will require selected plants of superior quality and high yield potential (Prince et al., 1998). As majority of jamun trees are of seedling origin, they show tremendous variation in their morphology and physico-chemical attributes (Keskar et al.; 1989a, Geetha et al., 1992, shete et al., 1999). The extent of variability increases when this highly cross-pollinated plant multiplied sexually. Therefore, studies were conducted to understand the variability in morphomatic and physico-chemical traits of different genotypes so that the horticulturally important germplasm could be protected from being eroded and at the same time their utilization is also maximized.

**RESEARCH METHODS**

The Jamun trees are found scattered through out Gujarat from cultivable land to waste lands. An extensive survey was made in different parts of Gujarat during fruiting season of 2001and 2002 to identify elite types of germplasm among its population. The observations were recorded on flowering, fruiting and fruit quality attributes of sixteen genotypes were studied. The study revealed that there was a wide variation among the genotypes. Earliest flowering (Mid February) took place in GJ-1, GJ-2, GJ-3 and GJ-10. Maximum panicle length (15.50 cm) and number of fruits per panicle (28.00) were found in GJ-2. Collection number Gj-3, Gj-2, GJ-10 and GJ-14 have been found earliest (First Week May) in ripening period, while GJ-16and GJ-13 ripened at the last (Last June). Maximum yield per plant was recorded in GJ-2 (152.00 kg). Individual fruit weight ranged from 9.80 to 21.50 g, length from 1.98 to 3.20 cm and pulp percentage from 79.67 to 86.37. There was a wide variation in chemical characters also. T.S.S. per cent varied from 9.60 to 12.30, total sugar 7.40 to 9.14% and vitamin C 33.00 to 43.00 mg/100g. On the basis of overall performance GJ-2, GJ-3 and GJ-8 were found to be promising among all the genotypes.

**Key words** : Jamun, Genetic resources, Panicle length, Fruit weight

February) in GJ-1, GJ-2, GJ-3 and GJ-10, however it was noted at the last (Mid March) in GJ-13 and GJ-16. There was marked variation in average panicle length in most of the genotypes and GJ-2 revealed maximum panicle length (15.50 cm) followed by GJ-13 (15.12 cm) and GJ-8 (15.11 cm). Least panicle length was found in GJ-5 (10.00 cm). Wide range of variation in number of fruits per panicle was observed throughout in different genotypes. Table 1 reveals that maximum number of fruits per panicle was noted in GJ-2 (28.00) followed by GJ-8 (26.00) and GJ-4 (25.50), while it was found to be least in GJ-7 (18.00). GJ-1, GJ-2, GJ-10 and GJ-14 ripened at the earliest (First Week of May), however ripening was noted at the last in GJ-13 and GJ-16 (Last June). Variation in flowering and fruiting in different genotypes might be due to change in location or inherent genetic variation. GJ-2 revealed maximum fruit yield per plant (152.00 kg) followed by GJ-8, GJ-3 and GJ-1, while least fruit yield per plant (90.00 kg) was found in GJ-4 (Table 1). Keskar et al., 1989 a, Jadon et al., 1999, Kundu et al., 2001 and Prabhuraj et al., 2002 have also reported variability in yield attributes, in Jamun under various climatic conditions.

Variability with respect to fruit characters among various genotypes of Jamun has been presented in Table 1 and 2. Maximum fruit weight (21.50g) was recorded in GJ-2, closely followed by GJ-8 (20.50 g), while least fruit weight (9.80g) was found in GJ-11. The length of fruits varied between 1.98 cm (GJ-11) and 3.20 cm (GJ-2). The fruits of collection number GJ-3 recorded the maximum diameter (2.22 cm) and that of GJ-15 the lowest (2.00 cm). In general fruit shape of different genotypes was oblong except GJ-4 and GJ-7, which followed Ovoid type of shape. The ovoid types had flat base and apex, whereas oblong types had mostly necked base and pointed apex. Variation in fruit size and shape in different Jamun genotypes have also been recorded by Keskar et al., 1989a and Singh et al., 1999 under Maharashtra and Uttar Pradesh conditions, respectively. Ashraf (1987) reported that fruit shape in Jamun varied from round to oblong and base and apex of fruits from flat to pointed. He also observed great variability in Jamun offering possibility of selecting a variety suitable for fresh market and processing.

The maximum pulp percent of 86.37% was recorded in GJ-10, which was at par with GJ-12 and GJ-2 having 86.05% and 85.39%, respectively, while it was found to be minimum in GJ-16 (79.67%). These observations did not show any correlation among fruit weight, breadth and length, which may be attributed to varying seed weight. It is clear in case of GJ-2, GJ-10 and GJ-12 where GJ-2 recorded the highest fruit weight (21.50g) but only 85.39% pulp. In contrast GJ-10 and GJ-12 which had the fruit weight of 18.50 g and 17.50 g but the pulp percent was comparatively higher than GJ-2 (Table 2). It clearly indicates that much emphasis should be paid on fruit pulp percent than fruit weight while screening an ideal Jamun genotype for fresh market and processing. Similar results were reported by Garanade et al., 1998 and Devi et al., 2002 in Jamun. Marked variations in chemical composition of fruits were recorded among the germplasms (Table 2). The total soluble solids of the fruits were maximum in GJ-8 (12.30%)
followed by GJ-9, GJ-4, GJ-11 and GJ-1, while GJ-5 recorded least percentage of T.S.S. (9.60%). The lowest titratable acidity of 0.32% was found in the fruit of GJ-6 but difference among the genotypes could not reach the level of significance. The highest total sugar and vitamin C content were recorded in GJ-8 that was closely followed by GJ-9, GJ-2 and GJ-14. Garande and Joshi, 1997 and Garande et al., 1998 obtained similar results in fruit quality attributes of Jamun. With respect to all traits studied in these genotypes, GJ-2, GJ-3, GJ-8 and GJ-1 were found to be promising and indicated the possibility of selecting suitable genotypes for organized plantation. Vijaynand et al., (2001) reported that three esters viz., dihydrocarvyl acetate, geranyl butyrate and terpinyl valerate were responsible for the flavor of Jamun fruits. This parameter needs to be further studied in these genotypes.

**REFERENCES**


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