



P-ISSN: 2349-8528
E-ISSN: 2321-4902
IJCS 2019; SP6: 691-693

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**(Special Issue -6)
3rd National Conference
On**

**PROMOTING & REINVIGORATING AGRI-HORTI,
TECHNOLOGICAL INNOVATIONS
[PRAGATI-2019]
(14-15 December, 2019)**

Evaluation of nutritional value of jamun fruit and seed (*Syzygium Cumini* L.). Germplasm

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Abstract

The present study was conducted to evaluate five germplasm of jamun for nutritional value during 2015-16 at the Student's Instructional Farm of Narendra Deva University Agriculture and Technology, Kumarganj Ayodhya (U.P.) India. A significant variation was detected for all traits suggested that there was considerable variability among germplasm. The calcium content in jamun seed was recorded 34.19mg/100g (NJ7) -37.11mg/100g (NJ12) whereas, in jamun fruit was recorded in range of 24.25mg/100g (NJ13) -24.32mg/100g (NJ12) The iron content in jamun seed was recorded 16.04mg/100g (NJ7) -17.88 mg/100g (NJ12) whereas, in jamun fruit was recorded in range of 3.08mg/100g (NJ7) -3.18mg/100g (NJ12) The phosphorus content in jamun seed was recorded 42.98 mg/100g (NJ7) -47.17 mg/100g (NJ12) whereas, in jamun fruit was recorded in range of 39.12mg/100g (NJ7) -39.18mg/100g (NJ6) The sodium content in jamun seed was recorded 15.98 mg/100g (NJ11) -16.33mg/100g (NJ6) whereas, in jamun fruit was recorded in range of 8.51mg/100g (NJ7) -8.63mg/100g (NJ12).

Keywords: Nutritional value, jamun fruit, seed, germplasm

Introduction

Jamun is an under exploited indigenous fruit tree of India belonging to family Myrtaceae. *Syzygium cumini* is an evergreen tree to a height of 25 m, It is also known as Jaam, Kalojaam, Jamun, Nerale Hannu, Njaval, Neredupandu, Jamblang, Jambolan, Black Plum, Plum, Dhat Plum, Jambolan Plum, Java Plum or Portuguese Plum. The mineral constituents are also reported to present which includes Ca, Mg, Na, K, Cu and vitamins such as thiamine, riboflavin, nicotinic acid etc (Veigas *et al.*, 2007) [17]. Seed contains a glucoside jamboline, a new phenolic substance, a trace pale yellow essential oil, chlorophyll, fat, resin, gallic acid, ferulic acid guaicol, resorcinol, dimethyl ether and corilagin. The seeds are fairly rich in the protein, and calcium. The jamun fruits are rich source of iron and are largely used as an effective medicine in the treatment of diabetes, heart and liver trouble (Shrivastava and Kumar, 2009) [18]. The tree is known to be native in India, Bangladesh, Nepal, Sri Lanka, Indonesia, and Malaysia (Ayyanar and Babu, 2012) [1, 18] and has been naturalized throughout Southeast Asia and the Pacific Islands (Dacanay, 2007) [2, 19]. In the Philippines, it is found throughout the country and is one of the most popular fruits (Ramos and Bandiola, 2017) [6]. The tree is also grown in Myanmar, Thailand, Nepal, Australia, Kenya, Zambia, Zimbabwe, Madagascar, Colombia, Cuba, Mexico, Brazil, and some parts of the United States of America particularly Florida and Hawaii (Sharma *et al.*, 2012; Faria *et al.*, 2011; and Swami *et al.*, 2012) [3, 4, 21, 20, 5, 22]. Keeping in view of above facts the present research work was conducted on evaluation of morphological and nutritional parameters of jamun germplasm.

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Materials and methods

The present research work was carried out during sesasn 2015-16. Five germplasm of jamun namely NJ6, NJ7, NJ11, NJ12 and NJ13 were collected from main experimental station of horticulture narendra deva university of agriculture kumarganj ayodhya. The total mineral content was estimated by the method as described by Hart and Fisher (1971).

Results and discussion

The calcium content in jamun seed was recorded 34.19mg/100g (NJ7) -37.11mg/100g (NJ12) whereas , in jamun fruit was recorded in range of 24.25mg/100g (NJ13) - 24.32mg/100g (NJ12) Ali *et al.* (2013) ^[9] studies highly supported the above result according to the results obtained, jamun seed contained calcium content 24.31mg/100g however, jamun pulp contained 36.10 mg/100g calcium content. The iron content in jamun seed was recorded 16.04mg/100g (NJ7) -17.88 mg/100g (NJ12) whereas , in jamun fruit was recorded in range of 3.08mg/100g (NJ7) - 3.18mg/100g(NJ12)) The present data obtained was found to be similar to the value reported by Anjali *et al.* (2017) ^[14] Pant *et al.* (2014) ^[16] Ali *et al.* (2013) ^[9] Ghosh *et al.* (2017) ^[11].

Table 1: Mineral content in jamun fruit

Germplasm	Mg in fruit	Ca in Fruit	Fe in fruit	P in fruit	Na in fruit	K in fruit
NJ6	16.88	24.31	3.11	39.18	8.58	190.50
NJ7	16.04	24.28	3.08	39.12	8.51	189.45
NJ11	16.38	24.26	3.15	39.17	8.55	189.64
NJ12	17.88	24.32	3.18	39.16	8.63	191.16
NJ13	17.13	24.25	3.10	39.13	8.59	190.47
Cd at 5%	0.099	0.018	0.015	0.021	0.026	0.086

The phosphorus content in jamun seed was recorded 42.98 mg/100g (NJ7) -47.17 mg/100g (NJ12) whereas, in jamun fruit was recorded in range of 39.12mg/100g (NJ7) - 39.18mg/100g (NJ6) The results indicate close correlation with findings of Kshirsagar *et al.* (2019), Anjali *et al.* (2017) ^[14] Bhowmik *et al.* (2013) ^[15] Pant *et al.* (2014) ^[16] Sehwaag and Das (2016) ^[10] The sodium content in jamun seed was recorded 15.98 mg/100g (NJ11) -16.33mg/100g (NJ6) whereas , in jamun fruit was recorded in range of 8.51mg/100g (NJ7) -8.63mg/100g (NJ12) Similar observations were closely supported by Ali *et al.* (2013) ^[9] found 16.34mg/100g in seed and 8.61mg/100g in jamun fruit The maganese content in jamun seed was recorded 16.04 mg/100g (NJ7) -17.88mg/100g (NJ12) whereas , in jamun fruit was recorded in range of 10.5mg/100g (NJ7) and (NJ13) -10.11mg/100g (NJ11) The result obtained was found to be similar to the value reported by Anjali *et al.* (2017) ^[14] Pant *et al.* (2014) ^[16] Ali *et al.* (2013) ^[9] Ghosh *et al.* (2017) ^[11]. Potassium content in jamun seed was recorded 87.74mg/100g (NJ13) – 87.91mg/100g (NJ6) where as in jamun fruit was recorded in range of 189.45mg/100g (NJ7)-191.16mg/100g (NJ12) results indicate close correlation with findings of Bhowmik *et al.* (2013) ^[15] Pant *et al.* (2014) ^[16]

Table 2: Mineral content in jamun seed.

Germplasm	Mg in seed	Fe in seed	P in seed	Na in seed	K in seed
NJ6	35.17	16.88	45.17	16.33	87.91
NJ7	34.19	16.04	43.08	16.32	87.84
NJ11	35.18	16.38	44.26	15.98	87.75
NJ12	37.11	17.88	47.17	16.31	87.89
NJ13	36.26	17.13	45.47	16.29	87.74
Cd at 5%	0.034	0.099	0.101	0.022	0.024

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