Influence of different planting dates on their survival and growth parameters of ~~two cultivars of~~ jamun (*syzygiumcumini*) cultivars~~c.v Goma Priyanka and Ra Jamun.~~

Comment [WU1]: It is better to write the title as follows

Abstract

The present investigation entitled "Influence of different planting dates on their survival and growth parameters of two cultivars of jamun (*syzygiumcumini*) cv Goma Priyanka and Ra Jamun". The present investigation was carried out in randomized block design with 10 treatment, which were replicated thrice. The treatments were **T_1** (Goma priyanka + 30 January), **T_2** (Goma priyanka + 15 February), **T_3** (Goma priyanka + 1 march), **T_4** (Goma priyanka + 15 march),**T_5** (Goma priyanka + 30 march), **T_6** (Ra jamun+ 30 January),**T_7** (Ra jamun + 15 February),**T_8** (Ra jamun + 1 march),**T_9** (Ra jamun + 15 march),**T_{10}** (Ra jamun + 30 march). On the basis of our experimental finding it can be concluded that the best date of planting for jamun was 15th of march. The best variety for prayagraj agro climatic condition was found to be Goma Priyanaka. Ultimately on the basis of our overall finding it can be concluded that when Goma Priyanka was planted at 15th march gives the best result in terms of vegetative growth of the jamun plant.

Comment [WU2]: They abstract was not completed, It must include
1.Title
2. Objectives
3. Material and method
4. Result and discussion
5.Conclusion

Keywords: Jamun, Date of Planting, Growth, Survivality %.

Introduction

TheJamun,(*Syzygiumcuminii)*,is under the familyMyrtaceae,with the number chromosome~~no~~.2n=40.Skeelsisanutritiousfruit with a variety of uses. It is one of the most hardy fruit crops and can easily be grown inneglected and marshy areas where other fruits plants cannot be grown successfully. The fruit isgoodsourceofiron,sugars,minerals,proteinandcarbohydrateetc.Fullyripenedfruitsareeatenas fresh fruit and can be processed into beverages like jelly, jam, squash, wine, vinegar andpickles.

Jamun,~~also known as~~is(*Syzygiumcumini*)~~,~~ is a tropical evergreen tree native to the Indian subcontinent~~.It belongs to the Myrtaceae family~~ and ~~can~~ grow up to 30 meters tall. The tree has a dense, spreading crown with glossy, dark green leaves. Its small, fragrant flowers are typically white or cream-colored and are followed by oblong-shaped fruits. The fruit of the jamun tree is a berry, usually ovoid or oblong, with a smooth, dark purple to black skin. Inside, it contains juicy, pinkish-purple flesh surrounding a single, large seed. Jamun fruit has a unique, tangy-sweet flavor with a slightly astringent taste. It is rich in vitamins, minerals, and antioxidants, making it a popular choice in traditional medicine and culinary applications. Jamun trees are often cultivated for their fruit, which is enjoyed fresh, as well as in jams, jellies, juices, and desserts.

The planting date significantly influences the survival and growth of jamun trees. Optimal planting ~~times~~ datecoincide with the beginning of the rainy season or during mild weather conditions, allowing the young trees to establish root systems before facing harsh environmental stresses. Planting during the rainy season ensures ample moisture for initial growth and reduces transplant shock. Early planting may promote better root establishment and growth, leading to higher survival rates and faster development. Conversely, late planting, particularly during dry or extreme weather conditions, can increase stress on the newly planted trees, resulting in lower survival rates and slower growth. Additionally, planting during periods of waterlogging or frost can negatively impact root development and overall tree health. Overall, selecting the appropriate planting date is essential for maximizing the survival and growth of jamun trees, ensuring ~~they~~ toestablish strong root systems and adapt well to their environment, ultimately leading to healthy and productive orchards.

Materials and Methods

The present investigation entitled "Influence of different planting dates on their survival and growth parameters of ~~two cultivar~~s ~~of~~ jamun (*syzygiumcumini*) cultivar~~cv Goma Priyanka and Ra Jamun~~".was carried out during 2022-23 at Horticulture Research Farm, Department of Horticulture, Sam Higginbottom University of Agriculture Technology and sciences, Naini, Prayagraj. The present investigation was carried out in randomized block design with~~10 treatment~~10 treatments, which were replicated ~~thrice~~three times. The treatments were **T_1** (Goma priyanka + 30 January), **T_2** (Goma priyanka + 15 February), **T_3** (Goma priyanka + 1 march), **T_4** (Goma priyanka + 15 march),**T_5** (Goma priyanka + 30 march), **T_6** (Ra jamun + 30 January),**T_7** (Ra jamun + 15 February),**T_8** (Ra jamun + 1 march),**T_9** (Ra jamun + 15 march),**T_{10}** (Ra jamun + 30 march). The objective of the experiment was to study the best variety suitable for prayagraj and its growth and survivality percentage.

Formatted: Indent: First line: 0"

Formatted: Font: Not Italic

Formatted: Indent: First line: 0"

Comment [WU3]: You mention the reference under Reference list but none them are cited in the body of paper

Results and Discussion

The maximum Survivality% percentage was observed in T_3 (Goma priyanka + 1 march) with (78.87) % respectively, followed by T_2 (Goma priyanka + 15 February) with (77.54) % which were issignificantly superior over T_{10} (Ra jamun + 30 march) with (68.23) %. Early planting allows for establishment before harsh conditions, potentially increasing survival rates. Experimentation across varied planting dates and monitoring survival rates can provide insights into the optimal timing for jamun plantation, aiding in maximizing survival percentages and overall crop success.

The minimum Mortality % was observed in T_3 (Goma priyanka + 1 march) with (21.13) respectively, followed by T_2 (Goma priyanka + 15 February) with (22.46) % which were significantly superior over T_{10} (Ra jamun + 30 march) with (31.77). %.The influence of different planting dates on the Mortality percentage of jamun (*Syzygiumcumini*) varies due to climatic conditions, soil moisture, and growth stages. Planting during optimal conditions, such as the onset of the rainy season, typically results in higher Mortality rates due to favorable moisture levels and reduced stress

The maximum Plant height was observed in T_3 (Goma priyanka + 1 march) with (31.16) cm followed by T_2 (Goma priyanka + 15 February) with (30.42) cm which were significantly superior over T_{10} (Ra jamun + 30 march) with (28.42) cm. Early planting allows for establishment before harsh conditions, potentially increasing Plant height. Experimentation across varied planting dates and monitoring Plant height can provide insights into the optimal timing for jamun plantation, aiding in maximizing Plant height and overall crop success.

The maximum Number of leaves was observed in T_3 (Goma priyanka + 1 march) with (20.83) cm followed by T_2 (Goma priyanka + 15 February) with (20.19) which were significantly superior over T_{10} (Ra jamun + 30 march) with (16.76). . Planting during optimal conditions, such as the onset of the rainy season, typically results in higher Number of leaves due to favorable moisture levels and reduced stress.

The maximum Plant spread was observed in T_3 (Goma priyanka + 1 march) with (21.73) cm followed by T_2 (Goma priyanka + 15 February) with (21.32) cm which were significantly superior over T_{10} (Ra jamun + 30 march) with (18.08) cm . Planting during optimal conditions, such as the onset of the rainy season, typically results in higher Number of leaves due to favorable moisture levels and reduced stress. The increase in number of leaves simultaneously increases the plant sp

The maximum Leaf area was observed in T_3 (Goma priyanka + 1 march) with (12..57) cm^2 followed by

Comment [WU4]: Please re-write the result and Discussion again properly

T_2 (Goma priyanka + 15 February) with (12.35) cm^2 which were significantly superior over T_{10} (Ra jamun + 30 march) with (9.29) cm^2 . Increase in somatic cell division of leaf increases the leaf area of the plant which also helps in the increasing he plant spread.

The minimum Days to Bud break was observed in T_3 (Goma priyanka + 1 march) with (3.96) days respectively, followed by T_2 (Goma priyanka + 15 February) with (4.25) days which were significantly superior over T_{10} (Ra jamun + 30 march) with (9.89).

The maximum Number of branches was observed in T_3 (Goma priyanka + 1 march) with (10.76) respectively, followed by T_2 (Goma priyanka + 15 February) with (9.54) which were significantly superior over T_{10} (Ra jamun + 30 march) with (4.23). . Increase in somatic cell division of branches increases the bud of the plant which also helps in the initiation of the

The maximum Leaf area index was observed in T_3 (Goma priyanka + 1 march) with (2.89) respectively, followed by T_2 (Goma priyanka + 15 February) with (2.76) which were significantly superior over T_{10} (Ra jamun + 30 march) with (1.67).

The maximum chlorophyll content was observed in T_3 (Goma priyanka + 1 march) with (65.87) respectively, followed by T_2 (Goma priyanka + 15 February) with (61.45) which were significantly superior over T_{10} (Ra jamun + 30 march) with (45.62). Increasing chlorophyll content in plants enhances photosynthesis, the process crucial for converting light energy into chemical energy. This leads to improved growth, higher yields, and enhanced overall plant vigor. Additionally, higher chlorophyll levels can contribute to better stress tolerance and improved resistance against environmental challenges.

Conclusion

On the basis of our experimental finding it can be concluded that the best date of planting for jamun was 15^{th} of march. The best variety for prayagraj agro climatic condition was found to be GomaPriyanaka. Ultimately on the basis of our overall finding it can be concluded that when Goma Priyanka was planted at 15^{th} march gives the best result in terms of vegetative growth of the jamun plant.

Table 1Influence of different planting date on Survivality%, Mortality %, Plant height, Number of leaves and Days to break of Jamun.

Symbol	Survivality %	Mortality %	Plant height (cm)					Number of Leaves					Days to bud break
			Initial	30 DAT	60 DAT	90 DAT	120 DAT	Initial	30 DAT	60 DAT	90 DAT	120 DAT	
T_1	70.67	29.33	6.98	11.85	17.52	24.41	30.28	5.01	8.77	13.31	16.43	20.08	4.87
T_2	77.54	22.46	7.12	11.99	17.66	24.55	30.42	5.12	8.88	13.42	16.54	20.19	4.25
T_3	78.87	21.13	7.86	12.73	18.40	25.29	31.16	5.76	9.52	14.06	17.18	20.83	3.96
T_4	76.87	23.13	6.13	11.00	16.67	23.56	29.43	4.98	8.74	13.28	16.4	20.05	6.73
T_5	74.56	25.44	6.78	11.65	17.32	24.21	30.08	4.67	8.43	12.97	16.09	19.74	6.89
T_6	73.87	26.13	6.43	11.30	16.97	23.86	29.73	4.43	8.19	12.73	15.85	19.5	7.43
T_7	72.79	27.21	5.67	10.54	16.21	23.10	28.97	4.21	7.97	12.51	15.63	19.28	7.56
T_8	71.32	28.68	5.98	10.85	16.52	23.41	29.28	4.1	7.86	12.4	15.52	19.17	8.01
T_9	69.57	30.43	5.36	10.23	15.90	22.79	28.66	3.98	7.74	12.28	15.4	19.05	8.56
T_{10}	68.23	31.77	5.12	9.99	15.66	22.55	28.42	3.76	5.45	9.99	13.11	16.76	9.89
F Test	S	S	S	S	S	S	S	S	S	S	S	S	S
$CD_{@5\%}$	2.543	1.685	0.897	0.88	0.975	0.93	0.893	0.453	0.651	0.569	0.468	0.765	0.764
S.Ed. (±)	1.231	0.814	0.416	0.431	0.462	0.451	0.398	0.231	0.301	0.249	0.221	0.351	0.352

Formatted: Space After: 0 pt, Line spacing: single

Formatted Table

Formatted: Space After: 0 pt, Line spacing: single

Table 2 Influence of different planting date on Survivality%, Mortality %, Plant height, Number of leaves and Days to break of Jamun.

Symbol	Plant spread (cm)					Leaf area (cm^2)					No. of branches	Leaf area Index	Leaf area index
	Initial	30 DAT	60 DAT	90 DAT	120 DAT	Initial	30 DAT	60 DAT	90 DAT	120 DAT			
T_1	7.12	10.33	13.45	18.01	20.99	3.54	4.88	8.22	10.09	12.13	9.01	2.54	59.65
T_2	7.45	10.66	13.78	18.34	21.32	3.76	5.10	8.44	10.31	12.35	9.54	2.76	61.45
T_3	7.86	11.07	14.19	18.75	21.73	3.98	5.32	8.66	10.53	12.57	10.76	2.89	65.87
T_4	7.01	10.22	13.34	17.9	20.88	3.45	4.79	8.13	10.00	12.04	8.43	2.39	55.39
T_5	6.98	10.19	13.31	17.87	20.85	3.39	4.73	8.07	9.94	11.98	7.98	2.21	53.36
T_6	6.12	9.33	12.45	17.01	19.99	3.31	4.65	6.21	8.08	10.12	6.78	2.13	48.37
T_7	5.78	8.99	12.11	16.67	19.65	3.1	4.44	6.00	7.87	9.91	5.87	2.01	46.29
T_8	5.15	8.36	11.48	16.04	19.02	2.98	4.32	5.88	7.75	9.79	5.07	1.98	47.82
T_9	4.49	7.7	10.82	15.38	18.36	2.76	4.10	5.66	7.53	9.57	4.65	1.81	49.35
T_{10}	4.21	7.42	10.54	15.1	18.08	2.48	3.82	5.38	7.25	9.29	4.23	1.67	45.62
F Test	S	S	S	S	S	S	S	S	S	S	S	S	S
$CD_{@5\%}$	0.463	0.352	0.875	0.859	0.981	0.078	0.098	0.324	0.431	0.738	0.984	0.0541	2.315
S.Ed. (±)	0.231	0.176	0.4375	0.4295	0.4905	0.039	0.049	0.162	0.2155	0.369	0.437	0.03	1.856

Formatted Table

References

Ara N, MoniruzzamanM,RahmanKS.Performance of hybrid lines of pointed gourd (*Trichosanthesdioica*Roxb) for yield and yield attributes. *Bangladesh Journal Agricultural Research*.2018;43(3):383-393.

Chavan *et al*.(2015), Variability And Character Association Studies In Ridge Gourd (Luffa AcutangulaRoxb.) With Reference To Yield Attributes (*Journal of Global Biosciences* ISSN 2320-1355)

Choudhary *et al.* (2011), Genetic divergence in hermaphrodite ridge gourd (*Luffa acutangula*) (Vegetable Science (2011) 38(1): 68-72)

Gowtham KNP, KuppastIJ,Mankani KL.A review on *Luffa acutangula.* International Journal of Pharma World Research. 2012;3(1):1–15.

Haque MM, Uddin MS, MehrajH,UddinJAFM.Evaluation of snake gourd (*Trichasanthesanguina* L.) test hybrids comparing with four popular checks. International Journal of Applied Science Biotechnology. 2014;2(4):525-528.

Hussain J, Rehman N, Khan AL, Hamayun M, Hussain SM, Shinwari ZK. Proximate and essential nutrients evaluation of selected vegetables species from Kohat region, *Pakistan. Pakistan Journal of Botany*.2010;42(4):2847–2855.

Kandlakunta B, Rajendran A, Thingnganing L. Carotene content of some common (cereals, pulses, vegetables, spices and condiments) and unconventional sources of plant origin. *Food Chemistry*.2008;106:85–89.

Narasannavar et al. (2014), Heterosis studies in ridge gourd [Luffa acutangula (L.) (Heterosis studies in ridge gourd [*Luffa acutangula* (L.))

Quamruzzaman AKM, Rahman MM, Akter L. Performance of bottle gourd lines in Bangladesh Condition. *Annals of Biological Sciences*.2017;5(1):5-7.

Rabbani *et al.* (2012), Variability, Character Association And Diversity Analysis Of Ridge Gourd (*Luffa Acutangula*Roxb.) Genotypes (SAARC J. Agri., 10(2): 01-10 (2012))

Ramya B, Kerketta A, Topno SE. Evaluation of different hybrids for growth and yield attributes of bitter gourd (*Momordicacharantia* L.) in Prayagraj Region. *International Journal of Current Microbiology and Applied Sciences*.2020;9(12):1008-1012.

Rathore JS, Collis JP, Singh G, Singh KR, Jat BL. Studies on genetic variability in ridge gourd (*Luffa acutangula L.* (Roxb.)) Genotypes in Allahabad Agro-Climate Condition. *International Journal of Current Microbiology and Applied Sciences*. 2017;6(2):317-338.

Saensuk*et al.* (2022), A SNP of *betaine aldehyde dehydrogenase* (*BADH*) enhances an aroma (2-acetyl-1-pyrroline) in sponge gourd (*Luffa cylindrica*) and ridge gourd (*Luffa acutangula) (*Scientifc Reports | (2022) 12:3718)

Comment [WU5]: You only list the reference under the reference list, but none of them are not under body, so why you list it?
Please carefully look this this reference and result unless the paper is not suit puplication.

Sharmin *et al.* (2013), Hypoglycemic and Hypolipidemic Effects of Cucumber, White Pumpkin and Ridge Gourd in Alloxan Induced Diabetic Rats (J. Sci. Res. 5 (1), 161-170 (2013).