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Effect of pruning time and level on flowering and fruit set of Guava (*Psidium guajava* L.) *cv.* Lalit

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Abstract
Experiments were conducted on pruning time and level on flowering and fruit set of guava (*Psidium guajava* L.) *cv*. Lalit at Experimental Fruit Orchard of BUAT, Banda during 2021-22 and 2022-23. The experiment was laid out with six pruning time (last week of December, second week of January, last week of April, second week of May, last week of August, second week of September) and three pruning levels (20% pruning, 40% pruning, 60% pruning) in Factorial Randomized Block Design replicated trice. Among the physical growth parameter of fruit, two years and pooled data showed significantly maximum time taken to bud burst (4.47), time taken to bud sprout (17.59), time taken to flower initiation (30.79), time taken to full bloom (42.67), time taken to end of bloom (47.04), time taken to colour break in fruits (128.30), time taken to fruit maturity (135.50), were recorded in the treatment M_4P_1 (second week of May with 20% pruning). Maximum final fruit set (56.75) was recorded in M_3P_2 (last week of April with 40% pruning). Hence, the study clearly indicated the guava pruning in the last week of April with 40% pruning level found best to get maximum flowering and fruit set under the Bundelkhand condition.

Keywords: *Psidium guajava*, bud burst, bud sprout, flowering period

Introduction
The guava (*Psidium guajava* L.) the apple of tropics is one of the important fruit crops of India (Shukla *et al*., 2018) [19]. It belongs to family Myrtaceae and one of the most promising fruit crops of India (Gotur *et al*., 2017) [20] and is considered to be one of the most exquisite nutritionally valuable and remunerative crops (Singh *et al.*, 2000). Guava being a current season bearing plant responds favorably to different pruning practices (Mehta *et al*., 2012) [12]. The fruits produced in the rainy season are poor in quality, insipid, watery, insect infested and have poor shelf life (Sarkar *et al.*, 2005) [14]. Contrarily, fruits produced during the winter are superior in quality and are in high demand in the market (Shukla *et al.*, 2009) [21]. Therefore, some attempts have been made to induce higher yield in the winter season. As a traditional practice, farmers in some parts of India often practice bending and pruning of guava shoots to increase shoot numbers and to increase yield in the winter (Bagchi *et al*., 2008) [2]. In bending practice, branches are bent down with pressure at the base of the branches to open up the central canopy. Pruning is usually practiced in the summer (April– May) before flower initiation. Studies have reported that the time and level of pruning influence growth, flowering, quality and yield of guava (Singh *et al.*, 2000, Dhaliwal and Kaur 2003, Adhikari and Kandel 2015, Sarkar *et al*. 2005, Shaban and Haseeb 2009) [1, 14]. Adhikari and Kandel (2015) [1] recommended a light annual pruning after fruit harvest to encourage growth of new shoots in which flowers and fruits are borne. Similarly, Lal *et al.* (2000) [11] reported significant reduction of flowering and fruiting in the rainy season with pruning of shoots in summer.

Materials and Methods
The experiment was undertaken at the Instruction farm, Department of fruit science, college of Horticulture, Banda University of Agriculture & Technology, Banda, (Uttar Pradesh) India during 2021 to 2023. Fruit crop guava (*Psidium guajava* L.) *cv*. Lalit was selected for this study on pruning time and level of guava. The selected trees were uniform size and five years old. The climate of Bundelkhand region is chiefly characterized by semi- arid/ tropical region receiving an average rainfall of 800-900 mm of which more than 88-90% in rain occurs during only three months i.e. July, August and September However, June and October receive only 7-9% of total rainfall. The treatment combination M_1P_1=Pruning level at 20% from the tip on last week December, M_2P_1=Pruning level at 20% from the tip on second week January,

M_3P_1=Pruning level at 20% from the tip on last week April, M_4P_1=Pruning level at 20% from the tip on second week May, M_5P_1=Pruning level at 20% from the tip on last week August, M_6P_1=Pruning level at 20% from the tip on second week September, M_1P_2=Pruning level at 40% from the tip on last week December, M_2P_2=Pruning level at 40% from the tip on second week January, M_3P_2=Pruning level at 40% from the tip on last week April, M_4P_2=Pruning level at 40% from the tip on second week May, M_5P_2=Pruning level at 40% from the tip on last week August, M_6P_2=Pruning level at 40% from the tip on second week September, M_1P_3=Pruning level at 60% from the tip on last week December, M_2P_3=Pruning level at 60% from the tip on second week January, M_3P_3=Pruning level at 60% from the tip on last week April, M_4P_3=Pruning level at 60% from the tip on second week May, M_5P_3=Pruning level at 60% from the tip on last week August, M_6P_3=Pruning level at 60% from the tip on second week September were tested in Factorial Randomized Blocks Design with three replication.

Days to taken first bud burst
The period between the dates of pruning time to fruit bud burst was recorded for calculating the days taken to first bud burst.

Days taken to first bud sprout
Sprouting of bud sprout was recorded in days from the time of pruning to the emerging the first bud sprout on trees.

Days to first flower initiation
A day taken to first flower initiation was the recorded in days from the time of pruning to the flower initiation on the trees.

Days to full bloom
A day taken to full bloom was recorded in days from the time of pruning to the full bloom.

Days to end of bloom
The period between the date of pruning to time taken for end of bloom was recorded to calculate days taken for end of bloom.

Days to colour break in fruit
The period between the dates of pruning to time taken for colour break in fruit was recorded for calculating the days to colour break in fruit.

Days to fruit maturity
The period between the dates of pruning time to days taken for to fruit maturity was recorded for calculating the days to fruit maturity

Initial fruit set (%)
The initial fruit set counted for both the season and the year, with the mean value presented as the initial fruit set number.

$$\text{Initialfruitset\%} = \frac{\text{Numberofsetfruit}}{\text{Totalnumberofflower}} \times 100$$

Final fruit set (%)
The initial fruit set percentage was estimated using the formula below.

$$\text{Fruitset\%} = \frac{\text{Numberof set fruit}}{\text{Totalnumberofflowers}} \times 100$$

Fruit drop (%)
By deducting the percent fruit set value from one hundred during two years, the percent flower/fruit drop was computed, and the mean value is shown.

$$\text{Fruit drop\%} = \frac{\text{Total number of fruit drop}}{\text{Total number of fruit set}} \times 100$$

Results and Discussion

Time taken to bud burst (days) and time taken to bud sprout (days)
The time significantly minimum time taken to bud burst (days) and time taken to bud sprout (days) of guava were recorded in second week of May (M_4) followed by last week of April (M_3). The clearly indicates the effect of pruning through delays the emergence of buds but hastens the post flowering phenophases due to increased source and reduced sink and efficient movement of photosynthesis in the pruned shoots (Salazar 2006) [13]. Effect of pruning level showed significant effect on time taken to bud burst (days) and time taken to bud sprout (days) of guava. The significantly minimum time taken to bud burst (days) and time taken to bud sprout (days) of guava were observed with P_1 (20% pruning) during two years and pooled data. The earliest vegetative bud emergence in the guava trees which were pruned severely. It might be due to more reserve food materials available to individual vegetative bud (Lakpathi *et al*., 2019) and more light interception in trees will induce early sprouting of vegetative buds. However, the results are contrary to the finding of Lal Singh and Godara (1985) who observed that maximum number of vegetative bud sprouting was obtained under severe pruning in ber. The interaction among minimum time taken to bud burst (days) and time taken to bud sprout (days) of guava were observed in the treatment combination $M_4 \times P_1$ (second week of May with 20% pruning) during both the years and pooled analysis. The shoot length increases with up to May pruning and later decrease with delay in pruning time. However, with the increase in severity of shoots length increase Bhagawati *et al*., (2015) [3] and Kumar *et al*., (2021) [8].

Time taken to flower Initiation (days), full bloom (days) and end of bloom (days)
The time (significantly minimum time taken to flowers initiation (days), time taken to full bloom (days) and time taken to end of bloom (days) of guava were recorded with the second week of May (M_4) followed by last week of April (M_3) during first year, second year and pooled data. Our results agree with Dubey *et al*., (2004) [6] who reported that the time and duration of flowering are varietal characters influenced by climatic conditions of a particular region. Results indicated that significantly minimum time taken to flowers initiation (days), time taken to full bloom (days) and time taken to end of bloom (days) of guava were observed P_1 (20% pruning) during both the years and pooled analysis. Sawant *et al*., (2018) [15] recorded could be due to the reduction of leaf area which also reduced the net photosynthesis and at the same time reserve food was utilized by the tree for the recovery of pruned foliage to rebuild the balance between tree parts, in guava the flower and fruits are

born on current season growth, a light annual pruning is necessary to encourage new shoots after harvesting. The minimum time taken to flowers initiation (days), time taken to full bloom (days) and time taken to end of bloom (days) of guava were recorded treatment combination $M_4 \times P_1$ (second week of May with 20% pruning) during both the years and pooled data. Similar results were also reported by Singh *et al*., (2001) [18] reported pruning time significantly increases number of shoots and flowering percentage, Sulemman Mohammed *et al*., (2006) also reported maximum shoot length, number of flowers with 60 cm pruning in rainy season.

Time taken to colour break in fruits (days) and time taken to fruit maturity (days)

The data indicated that significantly minimum time taken colour breaks in fruits (days) and time taken to fruit maturity (days) of guava were observed in second week of May (M_4) followed by last week of April (M_3) during two years and pooled data. Days required for fruit maturation is the most important character for a fruit crop. Bose *et al*., (2019) [4] the lowest number of days required for fruit maturation may be depending on the genetic characteristics of plant or availability of water and essential nutrients. Similar finding was reported by Singh *et al*., (2014) and Bose *et al*., (2019) [4]. The pruning level had significant effect on time taken to colour breaks in fruits and time taken to fruit maturity of guava. The significantly minimum time taken to colour break in fruits and time taken to fruit maturity of guavas were recorded in P_1 (20% pruning) during two years and pooled analysis. The time required for maturation of fruit was considered as the time between the withering of the entire stigma on the female spike up to the harvest of the fruit Bose *et al*., (2019) [4] in guava. The interaction among pruning time and pruning level on time taken to colour breaks in fruits and time taken to fruit maturity guava showed significant effect. The lowest time taken to colour breaks in fruit and time taken to fruit maturity of guava days were recorded treatment combination $M_4 \times P_1$ (second week of May with 20% pruning) during two years and pooled data. Singh *et al*., (2014) days required for fruit maturation is the most important character for a fruit crop. Bose *et al*., (2019) [4] the lowest number of days required for fruit maturation may be depending on the genetic characteristics of plant or availability of water and essential nutrients.

Final fruit set (%) and fruit drop (%)

The data indicated that time had a significantly maximum final fruit set and minimum fruit drop of guava were observed the last week of April (M_3) followed by last week of December (M_1) during first year, second year and pooled data. Adhikari and Kandel (2015) [1] due to the delayed initiation of fresh vegetative growth in recently trimmed trees, delayed pruned plants commenced flowering later. The majority of the carbohydrates that would have normally formed flower buds may have been used in the trees' rapid new vegetative growth following pruning, which could have delayed the onset of flowering in trimmed trees Dhaliwal and Singh (2004). Effect of pruning level had significantly affected on final fruit set and fruit drop of guava. The significantly higher final fruit set and minimum fruits drop of guava were recorded in P_2 (40% pruning) during both the years and pooled data. However, in the following winter the number of flowers per shoot increased with the increasing severity of pruning resulting in maximum number of flowers per shoot at 30 cm pruning level Adhikari and Kandal (2015) [1]. The interaction between effect pruning time and pruning level on final fruit set and fruit drop of guava showed significant effect. The highest final fruit set and minimum fruit drop of guava were observed in treatment combination $M_3 \times P_2$ (Last week of April with 40% pruning) during first year, second year and pooled analysis. The fruit set percentage decreased with increase in intensity of pruning. The number of fruits is more in early pruning as compared to late pruning. This might be due to the higher fruit setting in early pruning Singh *et al*., (2020) [17]. Might be due to the fact the after pruning the apical shots of the plant get removed leading to early new growth and better availability of photosynthetic solar radiation in leaves Adhikari and Kandal (2015) [1].

Table 1: Effect of pruning time and level on flowering and fruit set attributes of guava (*Psidium guajava* L.) *cv*. Lalit (2021-22).

Treatment	Bud burst (days)	Bud sprout (days)	Flower Initiation (days)	Full bloom	End of bloom	colour break in fruits	fruit maturity	Initial fruit set	Final fruit	Fruit drop
M_1	14.00	29.44	55.70	70.11	73.89	142.33	147.89	80.00	51.56	48.44
M_2	12.44	25.78	53.90	67.67	72.44	137.89	145.55	78.11	49.33	50.67
M_3	6.33	21.67	34.40	48.89	53.00	133.11	139.11	77.33	54.56	45.45
M_4	5.22	19.77	32.80	44.56	49.22	130.22	137.22	74.67	51.44	48.55
M_5	12.00	26.11	56.70	72.78	78.44	147.78	154.00	76.00	50.11	49.89
M_6	15.00	30.00	58.10	76.11	81.33	150.67	155.89	72.89	45.90	54.10
SEm	0.19	0.24	0.20	0.15	0.12	0.12	0.09	0.22	0.15	0.33
CD at%	0.54	0.69	0.58	0.45	0.35	0.34	0.27	0.63	0.43	0.96
P_1	9.39	23.17	47.10	61.61	66.06	138.17	144.39	72.22	48.17	51.83
P_2	10.83	25.61	48.70	63.50	68.33	140.12	147.05	76.72	52.96	47.04
P_3	12.28	27.61	50.00	64.94	69.78	142.33	148.39	80.56	50.32	49.68
SEm	0.13	0.17	0.14	0.11	0.09	0.08	0.07	0.16	0.11	0.24
CD at%	0.38	0.49	0.41	0.32	0.25	0.24	0.19	0.45	0.30	0.68
M_1P_1	12.33	25.67	54.00	68.67	72.67	140.00	147.00	76.00	50.00	50.00
M_1P_2	14.00	30.00	56.00	70.67	74.00	142.33	148.00	80.67	54.33	45.67
M_1P_3	15.67	32.67	57.20	71.00	75.00	144.67	148.67	83.33	50.33	49.67
M_2P_1	11.33	23.00	52.70	66.00	70.00	137.00	143.00	73.33	47.00	53.00
M_2P_2	12.33	26.00	54.00	67.33	73.00	138.00	146.32	78.67	52.00	48.00
M_2P_3	13.67	28.33	55.00	69.67	74.33	138.67	147.33	82.33	49.00	51.00
M_3P_1	4.33	19.33	32.00	47.00	51.00	130.33	136.33	74.00	52.33	47.67
M_3P_2	6.00	21.67	35.00	49.00	53.00	133.00	140.00	77.00	56.33	43.67

M_3P_3	8.67	24.00	36.30	50.67	55.00	136.00	141.00	81.00	55.00	45.00
M_4P_1	4.00	17.00	31.00	42.33	46.67	128.00	135.00	70.00	49.67	50.33
M_4P_2	5.00	20.00	32.70	45.00	50.00	130.67	137.33	75.00	53.00	47.00
M_4P_3	6.67	22.30	34.70	46.33	51.00	132.00	139.33	79.00	51.67	48.33
M_5P_1	10.33	25.33	55.30	71.33	76.00	146.00	152.00	72.00	46.33	53.67
M_5P_2	12.33	26.00	56.70	73.00	79.00	148.00	154.00	76.00	53.33	46.67
M_5P_3	13.33	27.00	58.00	74.00	80.33	149.33	156.00	80.00	50.67	49.33
M_6P_1	14.00	28.67	57.70	74.33	80.00	147.67	153.00	68.00	43.67	56.33
M_6P_2	15.33	30.00	58.00	76.00	81.00	151.00	156.67	73.00	48.77	51.23
M_6P_3	15.67	31.33	58.70	78.00	83.00	153.33	158.00	77.67	45.27	54.73
SEm	0.32	0.41	0.35	0.27	0.21	0.21	0.16	0.38	0.26	0.58
CD at%	0.93	1.19	1.00	0.78	0.61	0.60	0.46	1.10	0.75	1.67

Where: P_1= 20% Pruning, P_2= 40% Pruning, P_3= 60% Pruning, M_1 = Last week of December, M_2= Second week of January, M_3 = Last week of April, M_4= Second week of May, M_5= Last week of August, M_6= Second week of September

Table 2: Effect of pruning time and level on flowering and fruit set attributes of guava (*Psidium guajava* L.) *cv.* Lalit (2022-23).

Treatment	Bud burst (days)	Bud sprout (days)	Flower Initiation (days)	Full bloom	End of bloom	Colour break in fruits	fruit maturity	Initial fruit set	Final fruit	Fruit drop
M_1	14.29	29.50	55.86	70.28	75.33	142.78	152.11	83.44	52.21	47.79
M_2	12.93	27.44	54.45	69.09	74.12	138.54	146.88	80.11	50.11	49.89
M_3	7.86	21.43	35.16	49.77	54.20	134.24	139.38	79.11	55.18	44.81
M_4	6.13	20.69	33.11	44.98	51.67	130.09	138.21	75.78	52.00	48.00
M_5	12.36	26.49	56.74	73.12	79.12	148.33	155.33	76.67	50.38	49.62
M_6	15.40	30.44	58.89	77.27	82.97	151.52	158.74	75.50	46.49	53.51
SEm	0.21	0.27	0.20	0.19	0.35	0.15	0.17	0.16	0.08	0.37
CD at%	0.62	0.77	0.57	0.54	1.02	0.44	0.49	0.45	0.23	1.08
P_1	9.94	24.02	47.42	62.34	67.24	139.25	146.33	73.75	48.60	51.40
P_2	11.71	26.29	49.37	64.17	69.83	141.01	148.55	79.44	53.39	46.61
P_3	12.83	27.68	50.32	65.75	71.64	142.49	150.46	82.11	51.19	48.81
SEm	0.15	0.19	0.14	0.13	0.25	0.11	0.12	0.11	0.06	0.26
CD at%	0.44	0.55	0.40	0.38	0.72	0.31	0.35	0.32	0.16	0.76
M_1P_1	12.52	26.33	54.59	69.20	73.20	140.67	149.67	78.33	50.33	49.67
M_1P_2	14.03	30.10	56.00	70.00	75.70	143.00	152.00	85.00	54.33	45.67
M_1P_3	16.33	32.07	57.00	71.63	77.10	144.67	154.67	87.00	51.97	48.03
M_2P_1	11.80	25.77	52.82	67.00	72.87	137.76	144.33	75.33	46.50	53.50
M_2P_2	12.77	27.48	55.00	69.91	74.67	138.75	147.65	81.67	53.60	46.40
M_2P_3	14.22	29.08	55.53	70.37	74.83	139.12	148.67	83.33	50.22	49.78
M_3P_1	5.17	19.05	32.74	48.00	52.33	132.17	137.66	75.33	52.72	47.28
M_3P_2	8.97	21.81	35.85	50.09	54.00	133.57	139.33	79.00	57.17	42.83
M_3P_3	9.46	23.43	36.90	51.23	56.27	137.00	141.13	83.00	55.67	44.33
M_4P_1	4.93	18.17	30.57	43.00	47.40	128.59	136.00	73.00	50.07	49.93
M_4P_2	6.26	21.52	33.37	45.00	51.90	130.43	138.30	76.00	53.77	46.23
M_4P_3	7.20	22.37	35.40	46.93	55.72	131.26	140.33	78.33	52.17	47.83
M_5P_1	10.83	25.85	55.83	71.83	77.00	146.67	153.00	72.00	48.00	52.00
M_5P_2	12.67	26.23	57.00	73.00	79.53	148.33	155.00	77.00	52.47	47.53
M_5P_3	13.57	27.40	57.40	74.53	80.83	150.00	158.00	81.00	50.67	49.33
M_6P_1	14.40	28.96	58.00	75.00	80.67	149.67	157.30	68.50	44.00	56.00
M_6P_2	15.58	30.61	59.01	77.00	83.17	152.01	159.00	78.00	49.01	50.99
M_6P_3	16.22	31.75	59.67	79.81	85.07	152.87	159.33	80.00	46.47	53.33
SEm	0.37	0.46	0.34	0.32	0.61	0.27	0.29	0.27	0.14	0.65
CD at%	1.07	1.34	0.98	0.94	1.76	0.77	0.85	0.78	0.40	NS

Where: P_1= 20% Pruning, P_2= 40% Pruning, P_3= 60% Pruning, M_1 = Last week of December, M_2= Second week of January, M_3 = Last week of April, M_4= Second week of May, M_5= Last week of August, M_6= Second week of September

Table 3: Effect of pruning time and level on flowering and fruit set attributes of guava (*Psidium guajava* L.) *cv.* Lalit (pooled data for the year 2021-22 and 2022-23).

Treatment	Bud burst (days)	Bud sprout (days)	Flower Initiation (days)	Full bloom (days)	End of bloom (days)	Colour break in fruits	Fruit maturity (days)	Initial fruit set (%)	Final fruit (%)	Fruit drop (%)
M_1	14.15	29.47	55.80	70.20	74.61	142.56	150.00	81.72	51.88	48.12
M_2	12.69	26.61	54.18	68.38	73.28	138.22	146.22	79.11	49.72	50.28
M_3	7.10	21.55	34.80	49.33	54.10	133.68	139.24	78.22	54.87	45.13
M_4	5.68	20.23	32.96	44.77	50.45	130.16	137.72	75.22	51.73	48.28
M_5	12.18	26.30	56.71	72.95	78.78	148.06	154.67	76.33	50.27	49.73
M_6	15.20	30.15	58.51	76.69	82.15	151.09	157.32	74.20	46.20	53.80
SEm	0.11	0.14	0.08	0.12	0.21	0.11	0.27	0.25	0.12	0.12
CD at%	0.31	0.39	0.23	0.33	0.60	0.31	0.77	0.71	0.35	0.34
P_1	9.67	23.60	47.27	61.98	66.90	138.71	145.36	72.99	48.39	51.62
P_2	11.27	25.91	49.05	63.83	69.08	140.76	147.80	78.08	53.19	46.81
P_3	12.56	27.65	50.15	65.35	70.71	142.41	149.42	81.33	50.76	49.24
SEm	0.08	0.10	0.06	0.08	0.15	0.08	0.19	0.17	0.09	0.08
CD at%	0.22	0.28	0.16	0.24	0.43	0.22	0.54	0.50	0.25	0.24
M_1P_1	12.43	26.00	54.30	68.94	72.94	140.34	148.34	77.17	50.17	49.84
M_1P_2	14.02	30.05	56.00	70.34	74.85	142.67	150.00	82.84	54.33	45.67
M_1P_3	16.00	32.37	57.10	71.32	76.05	144.67	151.67	87.17	51.15	48.85
M_2P_1	11.57	24.39	52.76	66.50	71.44	137.38	143.67	74.33	46.75	53.25
M_2P_2	12.55	26.74	54.50	68.32	73.84	138.38	146.99	80.17	52.80	47.20
M_2P_3	13.95	28.71	55.27	70.02	74.58	138.90	148.00	82.83	49.61	50.39
M_3P_1	4.75	19.19	32.37	47.50	53.17	131.25	137.00	74.67	52.53	47.47
M_3P_2	7.49	21.74	35.43	49.55	53.50	133.29	139.67	78.00	56.75	43.25
M_3P_3	9.07	23.72	36.60	50.95	55.64	136.50	141.07	82.00	55.34	44.66
M_4P_1	4.47	17.59	30.79	42.67	47.04	128.30	135.50	71.50	49.87	50.13
M_4P_2	5.63	20.76	33.04	45.00	50.95	130.55	137.82	75.50	53.39	46.61
M_4P_3	6.94	22.34	35.05	46.63	53.36	131.63	139.83	78.67	51.92	48.08
M_5P_1	10.58	25.59	55.57	71.58	76.50	146.34	152.50	72.00	47.17	52.84
M_5P_2	12.50	26.12	56.85	73.00	79.27	148.17	154.50	76.50	53.00	47.00
M_5P_3	13.45	27.20	57.70	74.27	80.58	149.67	157.00	80.50	50.67	49.33
M_6P_1	14.20	28.82	57.85	74.67	80.34	148.67	155.15	68.25	43.84	56.17
M_6P_2	15.46	30.08	58.51	76.50	82.09	151.51	157.84	75.50	48.89	51.11
M_6P_3	15.95	31.54	59.19	78.91	84.04	153.10	158.97	78.84	45.87	54.13
SEm	0.19	0.24	0.14	0.20	036	0.19	0.46	0.43	0.21	0.21
CD at%	0.54	0.68	0.40	0.58	1.05	0.54	NS	1.23	0.61	0.59

Where: P_1= 20% Pruning, P_2= 40% Pruning, P_3= 60% Pruning, M_1 = Last week of December, M_2= Second week of January, M_3 = Last week of April, M_4= Second week of May, M_5= Last week of August, M_6= Second week of September

Conclusion

The results obtained in the presented studies showed that among pruning time and level were observed with the treatment combination M_3P_2 (last week of April with 40% pruning). Hence, the study clearly indicated the guava pruning in the last week of April with 40% pruning level found best to get maximum flowering and fruit set under the Bundelkhand condition.

Reference

1. Adhikari S, Kandel TP. Effect of time and level of pruning on vegetative growth, flowering, yield and quality of guava (*Psidium guajava* L.). International Journal Fruit Science. 2015;15:290-301.
2. Bagchi TB, Sukal P, Ghose B. Biocheical chabge during off-season flowering in guava (*Psidium guajava* L.) induce by bending and pruning. Journal Tropical Agriculture. 2008;46:64-66.
3. Bhagawati R, Bhagawati K, Choudhary VK, Rajkhowa DJ, Sharma R. Effect of pruning intensities on the performance of fruit plants under mid-hill condition of Eastern Himalayas: Case study on guava (*Psidium guajava* L.). Int. Let. Nat. Sci. 2015;46:46-51.
4. Bose SK, Ahmend S, Howlader P, Ali M. Flowering, fruiting behavior and nutritional quality of selected guava genotype. International Journal of Horticulture Science and Science. 2019;6(1):11-25.
5. Dhaliwal GS, Rattanpal HS, Gill HS. Effect of pruning and severity of pruning on cropping and physic-chemical properties of sarder guava (*Psidium guajava* L.). Haryana Journal Horticulture Science. 2000;29:17-20.
6. Dubey PS, Honda MN, Singh J, Singh SK. Flowering and fruiting character of guava verities during rainy season fruiting. The Orissa Journal of Horticulture. 2004;32:23-25.
7. Gurung N, Sarker SK. Effect of Pruning Intensities on Tree vigour, Flowering and Fruiting of Guava cv. Khaja under Alluvial zone of West Bengal, India. Int. J Curr. Microbiol. App. Sci. 2019;8(11):105-114.
8. Kumar R, Singh AK, Kumar A, Shukla R, Singh RS. Response of pruning time and intensity on growth and yield of guava (*Psidium guajava* L.) *cv.* Shweta. International Journal Curr Microbiol App Science, 2021;10(3):667-673.
9. Lakpathi G, Rajkumar M. Effect of pruning intensity and fruit load on yield and quality of guava (*Psidium guajava* L.) under high density planting system. International Journal Curr Microbiol App Science. 2018;7:1853-1860.
10. Lal Singh, Godara NR. Effect of planting distance and severity of pruning on vegetative growth of ber (*Zizyphus mauritiana* L.) *cv.* Umran. Progressive Horticulture, 2019;17(1):21-24.
11. Lal S, Tiwari JP, Mishra KK. Effect of plant spacing and pruning intensity on fruit yield and quality of guava

(*Psidium gujava* L.). Prog. Hort. 2000;32(1):20-25.
12. Mehta S, Singh SK, Das B, Jana BR, Mali S. Effect of pruning on guava (*Psidium guajava* L.) *cv*. sardar under ultra-high-density orcharding system. International Journal of Plant Research. 2012;25(2):192-195.
13. Salazar DM, Melgarejo P, Martinez R, Martinez JJ, Hernandez F, Burguera M. Phenological growth stages of guava tree (*Psidium guajava* L.). Scientia Horticulture, 2006;108:157-161.
14. Sarkar A, Ghos B, Kundu S, Sukul P. Effect of shoot pruning and bending on yield and fruit quality in guava (*Psidium guajava* L.) *cv*. L-49. Environ. Ecol. 2005;23(3):621-623.
15. Sawant NS, Kalam SR, Naglot UN. Performance of different levels of pruning on yield and quality of guava (*Psidium guajava* L.) var. Sardar International Journal of Chemical Studies 2018;6(5):2897-2901.
16. Shukla AK, Kaushik RA, Panday D, Sarolia DK. In guava publication by Maharana Pratap Uni. of Agri. & Technology, Udaipur; c2008. p. 7.
17. Singh A, Singh S, Kaur A. Effect of pruning on yield attributes in guava (*Psidium guajava* L.) *cv*. Allahabad Safeda. JETIR., (ISSN-2349-5163); c2020.
18. Singh R. Crop regulation in tropical and sub-tropical fruit. Indian Journal Horticulture. 2001;58:33-40.
19. Goap A, Sharma D, Shukla AK, Krishna CR. An IoT based smart irrigation management system using Machine learning and open source technologies. Computers and electronics in agriculture. 2018 Dec 1;155:41-9.
20. Ghabril M, Jackson M, Gotur R, Weber R, Orman E, Vuppalanchi R. Most individuals with advanced cirrhosis have sleep disturbances, which are associated with poor quality of life. Clinical Gastroenterology and Hepatology. 2017 Aug 1;15(8):1271-8.
21. Shukla VK, Doyon Y, Miller JC, DeKelver RC, Moehle EA, Worden SE, *et al*. Precise genome modification in the crop species *Zea mays* using zinc-finger nucleases. Nature. 2009 May 21;459(7245):437-41.