



Short Communication

Enhancing Flower Productivity During Off Season in Jasmine (*Jasminum sambac*)

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INTRODUCTION

Jasmine (*Jasminum sambac*) is one of the important major traditional loose flower in Pudukkottai district of Tamil Nadu. The flowers are used in family functions, social and religious functions, to prepare garland and to adorn hairs by the females. The prices are higher during religious auspicious days, Tuesday and Friday of the week. Its demand is constant throughout the Tamil calendar year except Chitrai and Aadi (April-May, July-Aug). Generally each farmer usually grows 100 to 250 plants depending upon the family members involved in plucking of flowers. The flowering of jasmine continues throughout the year and the farmers prune the plants during December- January and allowed to produce new flowering shoots. The market price during December to March is 10 times higher than the remaining part of the year. The exorbitant peak price is mainly due to non availability of flowers, as nearly 100 per cent of the farmers go for pruning. After pruning the jasmine plants starts bearing and produce large quantity of flowers during June-July which results in reduced market price during this period which sometimes is not even equal to its picking cost. Hence, in order to produce Jasmine flowers during off season i.e. December to March and change the attitude of the farmer, the present study was undertaken to produce Jasmine flowers by making use of two pruning times and application of chemicals.

MATERIALS AND METHODS

The present study was undertaken by Krishi Vigyan Kendra, Tamil Nadu Agricultural

University, Vamban, Pudukkottai during 2009-2010 and 2010-2011 at the farmers' field. The treatments were T₁- Pruning during November last week at 50 cm height and pinching after three months. T₂-Pruning during July month followed by spraying of 2 per cent humic acid at 15 d intervals, T₃- Pruning during July month and spraying of Nitrobenzene 20 per cent @ 2.5ml/l along with Tricentanol 0.2 per cent during November-April once in 15 d. The variety under study was Ramanathapuram local and age of plant was five years old. Each treatment was applied on 50 plants. The study was carried out at ten farmers' field of Manjanvidhuthi village for two successive years under irrigated condition. The regular cultural practices were followed during the study period. The soil samples were collected and analyzed for the available major and micronutrients. The soil pH was 6.9, EC 1.1, Nitrogen 123 kg/ha, Phosphorus 14 kg/ha, Potassium 201 kg/ha, Zinc 1.4 ppm, Iron 5.82 ppm, Manganese 3.48 ppm and Copper 0.27 ppm. The various growth and yield parameters were recorded by using standard procedures. The data obtained were statistically analyzed using analysis of variance.

RESULTS AND DISCUSSION

The data presented in the Table 1 revealed that there was no significant difference among the primary, secondary and tertiary branches per plant in all the three treatments. The flower bearing shoots per plant were higher during off season, main season and throughout the year in treatment of pruning during July month and spraying of

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Table 1: Growth and yield parameters of jasmine

S.No.	Parameters	T1: Nov.	T2: Pruning	T3:	T1:	T2:	T3:	T1:	T2:	T3:	T1:	T2:	T3:	SE	CD=
1.	No. of primary branches/plant	7	7	7	7	7	7	7	7	7	7	7	7	NS	NS
2.	No. of secondary branches/plant	3	3	3	3	3	3	3	3	3	3	3	3	NS	NS
3.	No. of tertiary branches/plant	30	31	33	30	31	33	30	31	33	30	31	33	1.8	3.8
4.	No. of flower bearing shoots/plant	-	77	88	96	71	82	96	148	170	96	148	170	3.92	8.12
5.	No. of leaves/plant	-	386	417	493	465	467	493	851	884	493	851	884	5.64	11.42
6.	Leaf length (cm)	-	5.1	5.2	5.5	5.5	5.5	5.5	5.3	5.35	5.5	5.3	5.35	0.29	0.60
7.	Leaf breadth (cm)	-	4.1	4.18	4.30	4.38	4.40	4.30	4.24	4.29	4.30	4.24	4.29	0.15	0.30
8.	Leaf area index	-	14.64	15.21	16.86	16.86	17.25	16.86	15.75	16.23	16.86	15.75	16.23	0.26	0.52
9.	No. of flowering days	-	32	41	125	111	116	125	143	157	125	143	157	3.01	6.12
10.	Flower length (cm)	-	1.5	1.5	1.6	1.6	1.6	1.6	1.55	1.55	1.6	1.55	1.55	0.10	0.20
11.	Flower circumference (cm)	-	1.7	1.7	1.8	1.8	1.8	1.8	1.75	1.75	1.8	1.75	1.75	0.10	0.21
12.	No. of flowers /plant	-	338	890	3223	3026	2655	3223	3364	3545	3223	3364	3545	39.63	80.65
13.	100 flower weight (g)	-	20.80	21.0	20.85	20.90	21.10	20.85	20.9	21.0	20.85	20.9	21.0	0.60	1.2
14.	Flower yield (g/plant)	-	70.3	187	672	632.7	561	672	703	748	672	703	748	10.88	23.14
15.	Flower yield (kg/ac)	-	182	486.2	1747.2	1645	1459	1747.2	1827	1945.2	1747.2	1827	1945.2	28.86	42.34
16.	Flower price (Rs/kg)	300	300	300	80	80	80	80	102	135	80	102	135	-	-
17.	Income (Rs/ac)	-	54600	146760	139776	131600	116720	139776	186200	263480	139776	186200	263480	-	-
18.	BCR	-	2.7	2.9	2.7	2.9	2.8	2.7	2.8	2.85	2.7	2.8	2.85	-	-

Flower Productivity during Off Season in Jasmine

nitrobenzene 20 per cent @ 2.5ml/l along with Tricontanol 0.2 per cent once in 15 d during November-April and followed by T₂ and T₁. Similarly number of leaves was higher in T₃ during off season and for one year followed by T₂ and T₁. During main season the plants were pruned which resulted in less number of leaves per plant. Similar results were reported in Tomato by Mithila *et al* (2012). The data on leaf length, leaf breadth and leaf area index showed no significant difference.

The number of flowering days was higher in T₃ followed by T₂ and T₁. It was attributed by flower induction due to the spraying of Nitrobenzene 20% @ 2.5ml/l along with Tricontanol 0.2 per cent once in 15 d during November-April and pruning during July month. The treatments T₃ and T₂ did not influenced the flower size where as number of flowers per plant was higher in T₃ followed by T₂ and T₁. Though it recorded less numbers during main season compared to T₁ but it was enhanced during off season due to presence of more number of flower bearing shoots. Kannan *et al* (2008) reported similar results in Paprika. The highest flower yield per plant (748 g), flower yield per hectare (4863 kg) was recorded in T₃ compared to T₂ and T₁. It was attributed by highest number of flowers per plant. Though it was less during main season but was compensated by flower yield during off season.

The total income of Rs.2,63,480/- was highest in (T₃) spraying of Nitrobenzene 20 per cent @ 2.5ml/l along with Tricontanol 0.2 per cent once in 15 d during November-April and pruning during July month followed by Rs.1,86,200/- total income recorded in T₂. It was attributed by higher flower yield and higher market price during off season which resulted in higher benefit cost ratio of 2.85:1.

CONCLUSION

Spraying of Nitrobenzene 20 per cent @ 2.5ml/l along with Tricontanol 0.2 per cent once in 15 d during November-April followed by pruning during July month recorded highest number of flower bearing shoots (170 year/plant), number of leaves (884/plant/year), flowering days (157/year), number of flowers (3545/plant/year), flower yield per plant (748g/year), flower yield per hectare (4863kg/year) and Benefit cost ratio (2.85:1).

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