



Eggplant Pruning experiment

Experiment conducted by: Mr. G. Samarawickrama

Location: Dilmah Conservation Sustainable Agriculture Research Centre (DCSARC), Moratuwa

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Objective

To experiment on whether and by how much 'exhausted' eggplants will regrow after pruning

Introduction

Eggplant is cultivated all over the island irrespective of district and elevation. Most farmers remove the eggplant bushes and throw them away in one years' time; after the crop is harvested and bushes are considered exhausted, so they can plant a new crop in same area. Some farmers, however, prune old bushes to rehabilitate them and produce a second harvest from them. Although this pruning technique has been frequently observed, there is no documentation of it. To gather more information about the efficacy of the technique and document it this pruning experiment was established at the DCSARC, Moratuwa.

Methodology

To carry out this experiment, a crop of 53 one-year-old eggplant bushes were selected and separated into five blocks as below. (Table 01) All these bushes had already been harvested and were considered exhausted.

These bushes were pruned at 6, 9, 12 and 15 inches (from the base of the stem of each plant) first on the 20th of January 2018 (Table 1). 17 days after pruning the eggplants (6th February), the number of new shoots on every plant was recorded to measure the bushes' growth rate.

Tea waste compost was added to the plants in equal measure every 2 weeks for the duration of the experiment.

The average height of plants in each treatment, as well as observations on their condition, was recorded in the months of March, May and June, around the 20th of each month.

Table 01 - Number of bushes and treatments

Treatment 1	23 bushes	Pruning at 6 inches height
Treatment 2	10 bushes	Pruning at 9 inches height
Treatment 3	8 bushes	Pruning at 12 inches height
Treatment 4	7 bushes	Pruning at 15 inches height
Treatment 5	5 bushes	No pruning



Figure 1



Figure 2



Figure 3



Figure 4



Figure 5

Pruning cut is marked in RED

Results and Discussion

FEBRUARY

Table 03 - Number of shoots after pruning the plants (total and average per treatment) – measured on the 6th February (17 days following pruning)

	Pruning height	No of bushes	Total no of shoots	Shoot average (no.) per bush	Status
Treatment 01	6"	23	85	3.70	Very healthy and thick branches with flower buds
Treatment 02	9"	10	63	6.03	Medium growth with thin branches
Treatment 03	12"	8	28	4.00	Medium growth with many thin branches with flowers
Treatment 04	15"	7	44	6.30	Medium growth with many flower buds
Treatment 05	No pruning	5	No pruning	4 all	Exhausted branches

MARCH

Table 04 – Average height and the girth measurement of newly produced shoots – measured on the 20th of March (Height measurement taken from the pruning cut)

	Height (cm) (starts from the pruning cut)	Girth (mean for total number of plants) (cm)	height of the bushes from ground level (cm)
Treatment 01	83.5	3.80	116
Treatment 02	32.5	2.30	73
Treatment 03	35.5	1.50	84
Treatment 04	69.0	2.40	98
Treatment 05 controller	60 height taken from the ground level		60

Observation made in March

Treatment 01 - Bushes were very healthy producing many new branches and flower buds

Treatment 02 - Medium growth with very thick branches with many flower buds

Treatment 03 - Poor growth rate and very little flower buds

Treatment 04 - Satisfactory growth rate medium size branches but healthy with flower buds

Treatment 05 - These un-pruned bushes remained exhausted

MAY

Table 5 Height (cm) (from ground level) measurements recorded on the 20th of May

Treatments	1	2	3	4	5
Height	124cm	80 cm	91 cm	101 cm	63 cm

T5 - Control (No prune)

Observations in May

At this stage it was observed that the canopy of the plants in some treatments were very high,

	height of the bushes from ground level (cm) - March	height from ground level (cm) - May	height from ground level (cm) - June
Treatment 01	116	124	132
Treatment 02	73	80	90

the branches were bent towards the ground, and some treatments were exhausted and started to produce poor flower buds (health and appearance-wise) and poor eggplant.

JUNE

Final measurements recorded in June

Table 6 Height (cm) (from ground level) measurements recorded on the 20th of June

Treatments	1	2	3	4	5
Height	132cm	90 cm	91 cm	101 cm	63 cm

At this stage, irrespective of treatment, all the bushes were exhausted, and their condition was very poor. Finally, we decided to prune the bushes once again and attempt a second cycle. Going forward, bushes were pruned on 21st June 2018. After pruning the bushes, their growth was monitored but their recovery rate was extremely slow in every treatment. We also observed that bushes had started to die regularly and at this point the experiment came to an end



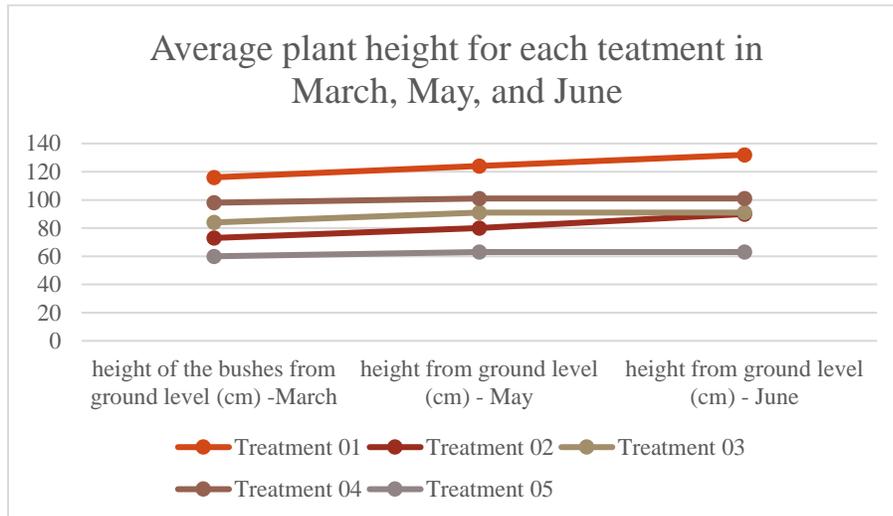
Figure 06
Dying of bushes after secondary pruning



Figure 07
Eggplant pruning experiment

Treatment 03	84	91	91
Treatment 04	98	101	101
Treatment 05	60	63	63

Table 6 – Average growth of plants in each treatment from March to June 2018



Conclusion

T1 - Pruning height at 6 inches

This treatment was the best among the other treatments. From the beginning of the pruning, recovery rate was very satisfactory and it produced many number of branches and flower buds and it is very interesting observation.

T2, T3 – These treatments were not as effective as T1. After pruning, slow growth rate and flower pattern were observed.

T4 – Initially medium shoot growth was observed after pruning. But sometime later T4 bushes started producing healthy and vigorous branches and more flower buds than T1

T5 – This was not pruned and gradually start dying one by one.

According to all these above results, we concluded that pruning can lead to a second harvest, and that pruning the plant at 6 inches or at 15 inches produces the best growth results