

Strategy to Reach Poorest of the Poor

Scientific Cultivation of Lac on *Flemingia semialata*



Submitted By

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Why Semialata as a poorest of poor strategy:

Lac is a natural resin which is secreted by an insect. These insects thrive on typical kind of plant which is commonly known as “host plant”. In Jharkhand the common host plants are Ber, Kusum and Palash which are generally found in and around the premise of the villagers. As data shows and it has also been witnessed during the course of implementation that the tribal community in Jharkhand is not land less although the cultivable land size is negligible. The villagers acquire barren lands in comparison to cultivable land. It has also seen that the poor cultivators those who have less cultivable land also don't have suitable host plant for cultivation.

To address this issue, Udyogini with support from IINRG has introduced Semialata for the poorest of the poor families. The idea was to utilize the barren land available with the poor family and also ensure women's participation as it is a low height perennial shrub.

The other criteria which make Semialata a pro poor host are as follows;

Scalability: as it is grown in barren land it is easily scalable in comparison to other plants. It is a leguminous crop and hence fixes the nitrogen of the soil making soil fertile gradually.

Replicable: Profit increases every year as the number of branches of the plant multiplies after every harvest, Low cost high return model, mixed cropping can be done, very easy for women to monitor.

Less labor intensive: as it takes maximum of 10 days of labor involvement the cost reduces hence it adds to the value.

Mixed cropping model: As mentioned above, it is a leguminous crop which supports intercropping; this fetches additional income/ food security to the family.

1. Introduction:

- Flemingia semialata is a perennial shrub which is quick growing (almost 3 meters in one year) and input responsive Lac host.
- It's one Kg of seed bag contains 27 – 30 thousand seeds.
- It has a capacity to fix the atmospheric nitrogen, there by enriching the soil fertility.
- This plant can be grown on variety of soils; however it prefers well drained soil of medium fertility.
- This can be also grown in partial sloppy land where there is no stagnation of water, with degraded soil of low fertility. The land should not be very sandy or rocky.
- It can be also grown in slight acidic condition however liming is essential before planting the host, where pH is less than 5.5.

2. Nursery site:

It could be temporary or permanent one preferably near irrigation facility and well protected from grazing animals.

3. Seed Bed Preparation:

- The nursery beds of 9.0 * 1.2m are prepared during the month of February – March after thorough work of soil to a depth of 0.5m.
- The length of the bed can be reduced proportionally depending upon the size of the land but the width should not be reduced.
- 50 kgs. of FYM (Farm yield manure) and 250 grams of insecticide are thoroughly mixed in the soil of the bed.
- The seeds are sown in the rows made at 15 cm distance.
- Morning irrigation should be done daily and weeding should be done as per requirement.
- During peak summer evening irrigation is also recommended.

4. Raising of seedlings in Poly bags:

- Seedlings can be raised in poly bags (25.0 * 15.0cm) which is filled with homogeneous mixture of soil, FYM and sand in the ratio of 2:1:1.
- The seed should be put in the bag 2-3 cm deep.
- Seedlings become ready for plantation after attaining 30 – 45 cm height.

5. Field preparation and pit digging:

- One deep ploughing followed by two harrowing and leveling is required for the preparation of soil.
- Pits of size 45*45*45cm of low density plantation under **irrigated condition**.
- Pits of 30*30*30 cm of high density plantation under **rain fed** condition.
- Pits should be kept open for one month for soil weathering to kill the soil born pathogens.

6. Rain Fed condition:

- In rain fed condition the host plant can be planted at a distance of 0.5 * 0.5 m.
- A space of 1.5 m should be left after a set of three rows.

7. Timing of plantation:

- The plantation should be done just after the beginning of monsoon.
- Transplantation should be completed by the end of July to fortnight of August.

8. Work Mapping for Samialata Plantation :

Timeline of Semialata														
Sl. No.	Activity	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Year - I														
1	Selection of beneficiaries and plots		■	■										
2	Training on nursery raising				■									
3	Training on plantation and management of Samia lata					■								
4	Distribution of beneficiary card					■								
5	Assessment & arrangement of seed					■	■							
6	Making of beds					■								
7	Ploughing of land	■	■											
8	Pit preparation				■	■	■							
9	Fencing of the area											■	■	
10	Transplantation of sapling to field							■						
11	Weeding & Drusban Spraying									■	■			
12	Exposure visit											■		
Year - II														
1	Weeding & Drusban Spraying	■	■											
2	Irrigation			■	■	■	■							
3	Brood Lac arrangement and assessment of brood lac required					■	■							
4	Removal of leaves from the area to be inoculated (week before inoculation)						■	■						
5	Weeding & cow-dung/VC mixing around roots						■							
6	Inoculation						■	■						

10. Cost benefit of semialata plantation during nursery raising and using model 2 for cultivation:

Table: 1

Cost-Benefit of Samia-lata Nursery Raising					
Sl. No.	Items	Rate	No.	Unit	Amount
1	Seeds	4000	1	0.5	2000
2	Cow dung	1000	1	3	3000
3	Vermi-compost	5	28	10	1400
4	Baby Stin Powder	1000	1	1	1000
5	Drusbaan T.C (Pesticide)	220	1	5	1100
6	Labor	90	1	40	3600
7	Shading	100	28	1	2800
	Total				14900
	Total no. of seeds				20000
	Total germinated saplings @ 50%				10000
	Total selling cost	2	10000	1	20000
	Total Profit				5100

Table: 2

Cost-Benefit of Lac Production on Samia-lata using model 2					
<i>Area</i>			<i>1 acre</i>		
<i>No. of producers</i>			<i>10</i>		
Sl. No.	Items	Rate	No.	Unit	Amount
Inputs					
1	Sapling	2	2700	1	5400
2	Cow dung (1 tractor = 5 qtl.)	1000	6	1	6000
3	Vermi-compost	5	400	1	2000
4	Baby Stin Powder	1000	1	1	1000
5	Drusbaan T.C (Pesticide)	220	1	0.75	165
6	Brood Lac	100	2700	0.02	5400
7	Nukil (Pesticide only for Krysopha)	850	1	12	0
8	Nuwan Spray	550	1	1	550
9	Thyodon Spray	200	1	1	200
10	Labor (mandays)	90	10	2.5	2250
	Total				22965
Outputs					

1	Phunki @ 40% of brood lac	100	2700	0.008	2160
2	Brood Lac (75% of total production)	100	2700	0.15	40500
3	Scrap Lac (25% of total production) @ 40% of brood lac	100	2700	0.02	5400
	Gross Income				48060
	<i>Net Income</i>				<i>25095</i>
	Income per producer				2510

Model- 2

Under Pro poor strategy of Udyogini we have adopted Mix cropping Model i.e. Model -2. Under this model 3200 plants can be planted in 1 acre of Land. The spacing and angle between two plants has been kept such so that vegetables like ladies finger, tomato, green chilly , brinjal and others can be grown. Below is the model -2 for intervention.

