

Cost Analysis of Weed Management in Tea Lands

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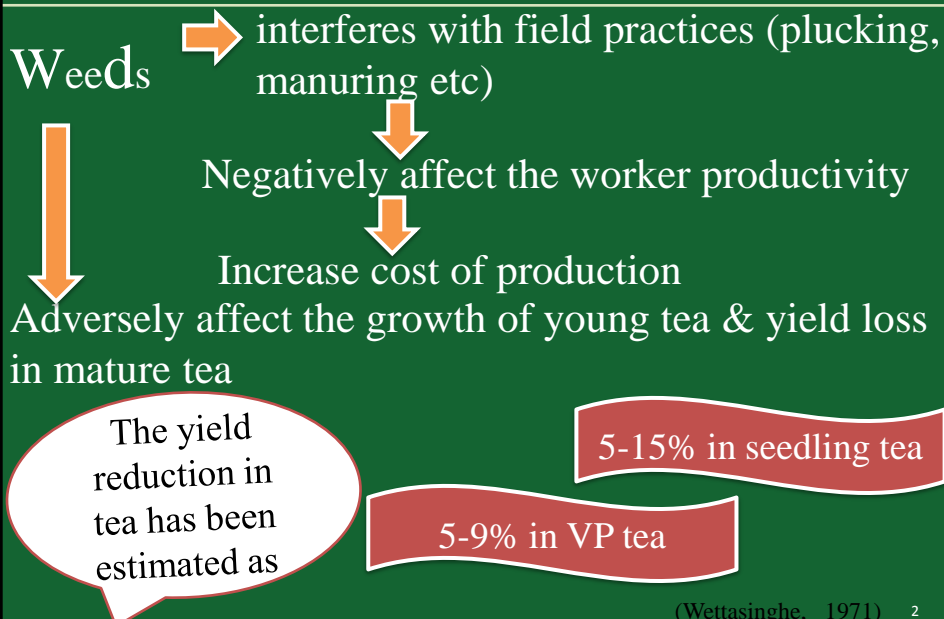
Agricultural Economics Division



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Economic Importance of Weed Management



(Wettasinghe, 1971)

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Economic Importance contd.. Crop loss (kg of made tea per year)

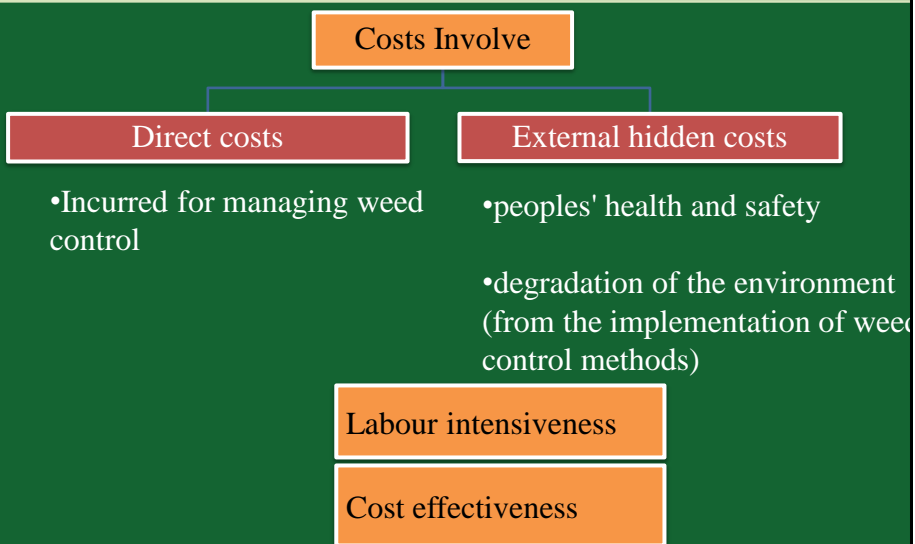
Type of bush cover	Productivity (kg/ha/yr)	No weed control			50% weed control		
		Crop loss (%)	Crop loss (kg/ha/yr)	Crop loss at National level	Crop loss (%)	Crop loss (kg/ha/yr)	Crop loss at National level
100%	>2500	1	25	1,151,970	0.5	12.5	575,985
60%	2500-1600	7	140	8,907,396	3.5	100	4,453,698
Poor bush	<1600	9	144	3,383,369	5	80	1,879,650
Seedling fields	<1200	15	180	9,528,966	10	120	6,352,644
Total crop loss		22,971,702			13,261,977		
Loss of export earning (Rs.mn)		14,332			8,274		



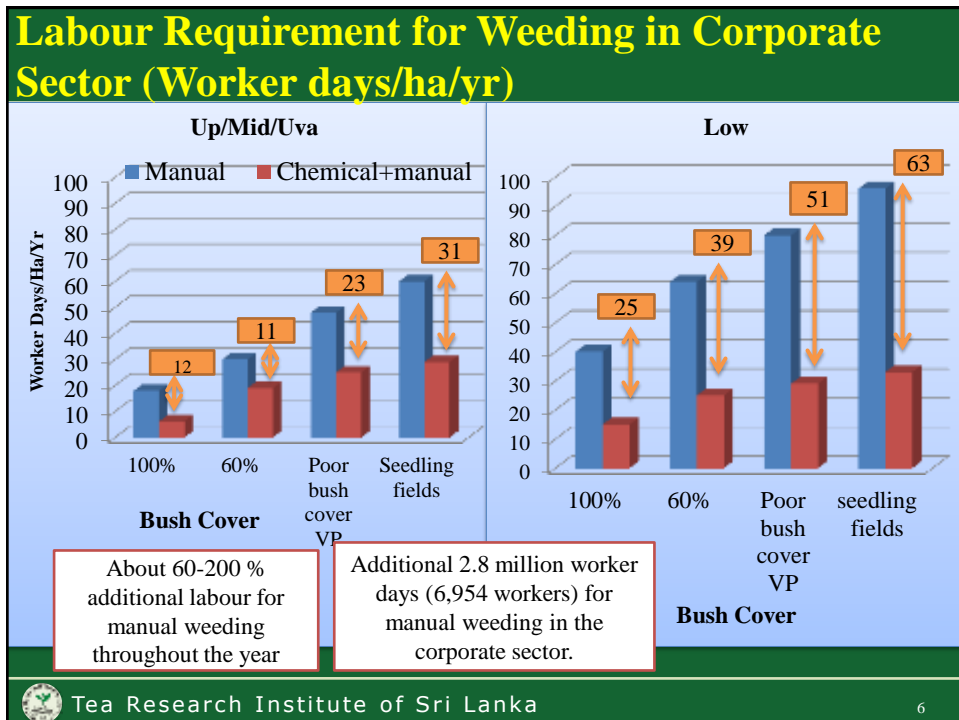
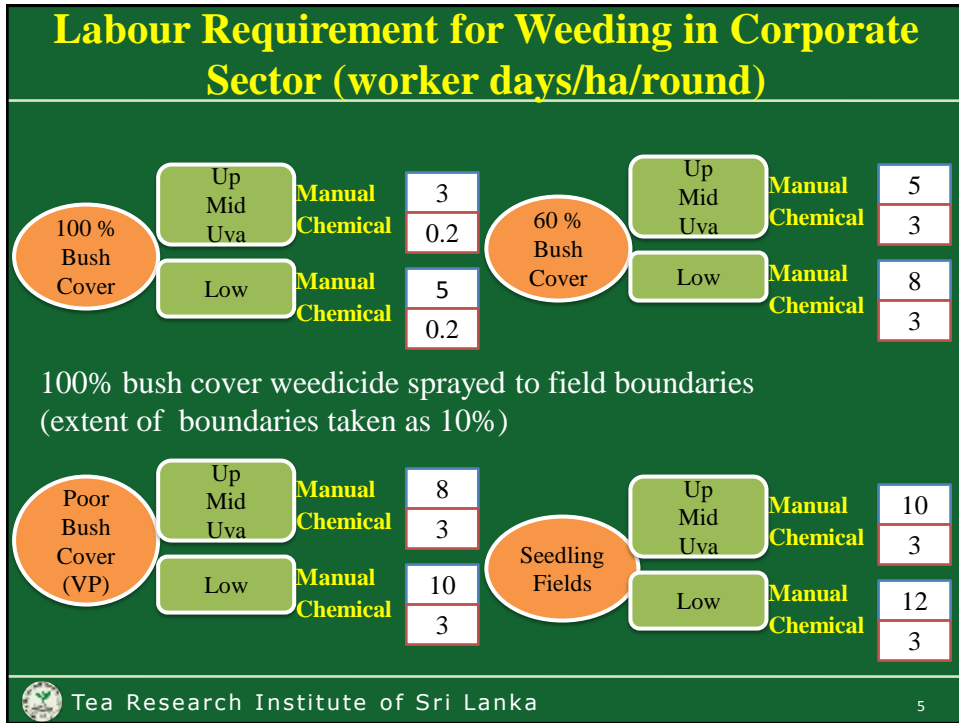
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Factors to be Considered in Weed Management Approach



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Advantages of Cultural Practices

Cultural practices	Labour req/ha/yr/round	Cost/ha/yr – SLR	Direct/Indirect benefits
In-filling of vacancies	453 /4 year	5,187	<ul style="list-style-type: none"> •Reduce weed growth •Increase yield •Reduce erosion •Reduces surface runoff •Retaining soil moisture - dry periods •Provides nutrients, •Addition of organic matter •Increase water holding capacity •Create favorable micro climate •Increase soil aeration
Thatching or mulching, cover crops	Establishment -34 Lopping -5	8,113	
Shade management	Establishment -25 Thinning out plants-10 Pollarding- 20	HS-6,064 MS-11,114	
Burying of pruning	80-100/cycle	13,750 - 17,188	
Mana in vacant patches	Establishment -20 Lopping -5	4812	



Direct Costs of Chemical Weed Management

Weedicides	Rs/ha/round	Cost difference (Compared to Glyphosate) – Rs./ha/round	Difference as %
*Glufosinate Ammonium + Diuron	7963	4523	131
Glufosinate ammonium	6235	2795	81
MCPA	4525	1085	3
Glyphosate	3440	0	

Cocktail mixture suppress weeds growth for longer period



Market Price of Weedicides

Common Name	Quantity	Unit Price (Rs)
Glufosinate Ammonium	1L	3800.00
	4L	12800.00
MCPA 60%	2L	2850.00
	4L	5600.00
MCPA 60%	4L	5700.00
Diuron	1kg	2180.00
Diuron	25kg	36000.00
	4L (Liquid)	5965.00

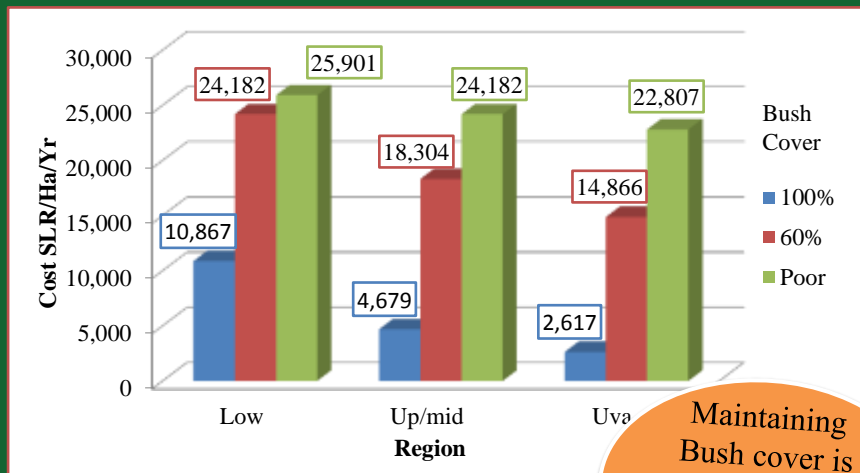
Cost advantage of bulk purchasing



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Cost of Weed Management as Per Weeding Programme (with GA)



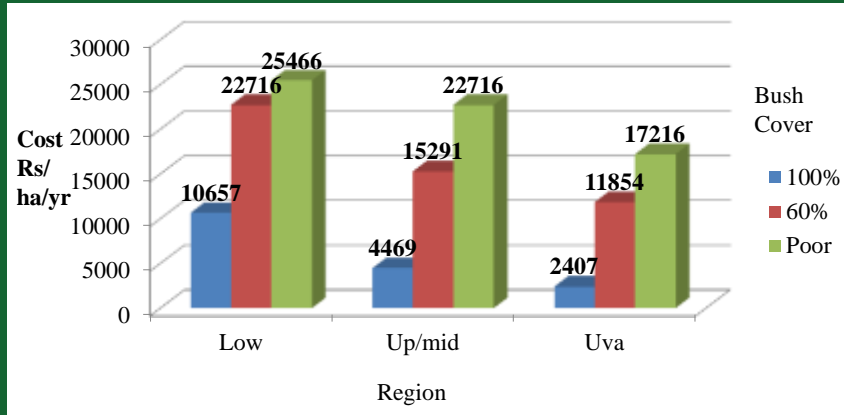
Maintaining Bush cover is highly effective in weed management



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Cost of Weed Management as Per Weeding Programme (with Glyphosate)



Additional cost incurred for weed management with GA – Rs. 210 – 5600 /ha/yr



Cost Effectiveness of Weed Management

Bush cover	Productivity (kg/ha/yr)	% crop loss	Crop loss /ha/yr	Value (Rs.)	Cost of weeding
100%	>2500	1	25	11,250	4,679
60%	2500-1600	9	140	63,000	18,304
Poor	<1600	12	180	81,000	24,182

Weed Management with Glufosinate Ammonium is economically beneficial



Conclusions

- ❖ Economic losses due to weeds in tea lands is significant.
- ❖ Integration of different weed management practices is cost effective.
- ❖ Manual weeding alone is not practicable due to labour scarcity in tea sector and high cost of labour.
- ❖ Maintaining bush cover can be considered as an effective approach in weed management.



THANK YOU

