

Keynote Address

224 Experiments and Extension Forum

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Sri Lanka Tea Production 2011

Elevation	2010	2011
	Qty (Mn kg)	Qty (Mn kg)
High	79.1 (23.9%)	79.2 (24.1%)
Medium	56.1 (16.9%)	52.6 (16.0%)
Low	196.2 (59.2%)	196.6 (59.9%)
Total	331.4	328.4

Source: Sri Lanka Tea Board



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Sri Lanka Tea Production 2011 According to the Agro-Climatic Regions

Agro-Climatic Region	Qty (Mn kg)		
	2010	2011	Change
			%
(A) Nuwara Eliya	4.95	4.66	(5.89)
(B) Westerns	51.30	56.54	10.14
(C) Mediums	50.01	50.17	0.33
(D) Uda Pussallawa	7.55	6.55	(13.22)
(E) Uva	33.10	28.47	(14.01)
(F) Low Growns	184.45	181.96	(1.35)
Grand Total	331.47	328.37	(0.92)

Source: Sri Lanka Tea Board



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Country-wise classification of world tea production 2011

Country	Production			
	2010	2011	Change	
			Qty(Mn kg)	%
India	907.66	937.59	29.90	3.30
Kenya	360.67	336.52	(24.15)	(6.70)
Sri Lanka	331.47	328.37	3.05	(0.92)
Indonesia	60.60	51.77	(8.83)	(14.58)
China	1273.00	1350.00	77.0	6.05



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Source: Sri Lanka Tea Board

Strategies to cope up with COP



Worker Requirement and Cost

Operation	Worker requirement (man days/ha/Yr)	Worker requirement (%)	Cost (Rs/kgMT)
Plucking	340-400	60%	163-184
Fertilizer application	16-24	3%	13-19
Weeding	30-56	7%	14-25
Pruning & Other operations	42-44	7%	15-21
Soil conservation	8	1%	3-4
Shade management	15-17	3%	4-7
Pest & disease control	13-19	3%	11-14
General charges	52-59	8%	70-93
Manufacturing cost	50-80	8%	56-84
Total COP	591-677		377-447



Major components of Cost of Production

Component	Share to COP	Labour component (%)
Plucking	40	88
Other cultivation practices	22	58
General charges	21	23
Manufacturing	17	22



Strategies to address worker productivity

Improve plucker intake

Encourage more over kilos

Reduce below-norm pluckers

Revise plucking norms for different periods & category of fields

Mechanical plucking

Mechanical plucking: **Shears tested by the TRI**



Garden-type shears
Manual operation
Output: 25-75 kg/day



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Mechanical plucking: **Machines tested by the TRI**



Battery operated

Single man-operated

Output 50-100 kg/day

Coverage (0.2-0.3 ha/day)



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Mechanical plucking: **Machines tested by the TRI**



On fuel

Single/two men-operated

Output 100-250 kg/day

Coverage 0.3-0.8ha/day



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TRI Selective tea Harvester





GMPs to enhance the quality and NSA



Handling the Green Leaves – GMP

- Standard of GL reaching the factory:
 - Main grade %, Refuse tea %
 - Wear & tear of machinery
 - More working hrs/workers in factory
- Leaves get damaged during
 - plucking
squeezing of shoots in hand plucking
 - weighing & bagging
over packing
 - transportation
overloading, sitting on bags, jerks on the way



Handling the Green Leaves – GMP

- Important to preserve the quality of green leaves until GL reach to factory
- Minimize damaging leaf due to
plucking
packing, weighing and transportation
- Close supervision - To prevent any damages during hand plucking
- During packing, weighing and transportation –
negligence, lack of close supervision, unawareness
etc.



Reduction of damaged leaf percentage - A case study

- Light weight plucking basket (use of nylon bags were prohibited)
- large weighing tats and coir mats at the weighing point and minimized contaminations
- Introduce weighing shed as far as closer to the factory and increased no of weighing points in order to send the leaf to the factory
- Leaf transportation – lorries/ tractor trailers with racks & roof to minimize physical damage and to avoid exposure to sunlight and rain.
- Bag quantity - reduce from 12 to 10 kg



Damaged leaf % and main grade% - 2008 & 2011

Month	Damaged Leaf %		Good leaf %		Main grade %	
	2008	2011	2008	2011	2008	2011
Jan	18	7	55	66	86	91
Feb	20	9	60	72	83	92
Mar	21	6	58	65	86	91
April	25	5	55	68	85	91
May	21	6	50	59	88	93
June	23	8	58	67	76	92
July	25	7	55	63	78	89
Aug	30	6	50	60	79	90
Sep	23	9	58	69	74	88
Oct	31	5	50	62	76	89
Nov	20	6	48	57	78	89
Dec	29	8	50	62	78	91

Rank improved from 80 to 35



Withering

- **Windows in the loft**
 - kept open to remove spent air & take fresh air
 - Avoid recirculation
- **Hygrometers**
 - check water in the container & wick.
- **Surface moisture**
 - to be removed as early as possible (3 - 4hrs).
- **Plenum chamber and gable door**
 - No air leaks



Withering

- **Turning the leaves**
 - Single turning is adequate for dry leaves
 - Two turnings are required for wet leaves
 - Should be done at correct time, delaying turning leads to discoloration of leaves
- **Latter stage of withering - Avoid using high hygrometric difference & high dry bulb temperature and also touching the leaves**



Fermentation

- **Fermenting tables / tiles should be clean and dry.**
 - Microbial contamination
- **Hygrometric difference should be maintained below 3°F.**
- **Fermenting area should have enough ventilation.**
- **Thickness of spread should be 2 to 3 inches.**
- **Take maximum care to avoid dhools falling on the floor while spreading and collecting.**
- **Label the dhools and send them to drier by colour & nosing.**



Driers and Drying

➤ Fluidized Bed Drier (FBD) - Mechanical conditions

- Feeding conveyor & spreader
- Perforated Plate-checking & cleaning
- Blow-hole suppressor height (15 – 20mm)
- Side plate-No damage
- Sectional dampers and directional louvers
- Calibrated inlet and weir end thermometers

➤ FBD-Operating parameters

- Weir height – 3.5"
- Inlet temperature – 260°F
- Tea/ weir end temperature 200 – 210°F



GMPs to enhance the quality and NSA

- Awareness of GMPs.
- Understand the reasons for each GMP.
- Adopt each GMP with close supervision.
- Improve quality tea to increase NSA and to meet international standards.



Update on MRL Issue



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Submissions for Tea - MRLs Granted

	Australia	Canada	USA
Lambda cyhalothrin	1 mg/kg May 10	2 mg/kg Jun 10	Petition with EPA
Fenpropathrin	2 mg/kg Sep 10	2 mg/kg Jun 11	Petition with EPA
Bifenthrin	5 mg/kg May 10	Petition with PMRA	Petition with EPA
Deltamethrin	5 mg/kg Sep 10		
Cypermethrin	0.5 mg/kg May 10		
Fenvalerate	0.05 mg/kg May 10		
Glyphosate	2 mg/kg Sep 10		
Chlorpyrifos	2 mg/kg May 10		
Acetamiprid			50 mg/kg Feb 10
Etoxazole			15 mg/kg Apr 11
Ethiprole			30 mg/kg Jun 11
Chlorantranilprole			50 mg/kg Jul 11

Items in green - New since July 2011

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EU Developments

Changes to authorisations

- **Granted 2011**

Bitertanol, Buprofezin, Fenazaquin, Hexythiazox,
Lime sulphur, Oxyfluorfen, Pyridaben, **Azadirachtin**

- **Non-approved**

Propargite

- **Resubmitted applications pending**

Bifenthrin

Proposed changes to MRLs

- **SANCO 12226 Adoption of Codex MRLs approved CAC July 2011**
 - Endosulfan, Bifenthrin, Clothianidin, Flubendiamide, Thiamethoxam, Etoxazole
- Discussed at Standing Committee Feb 2012
 - **EFSA opinion**
 - Hexythiazox 0.05* → 4 mg/kg

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Field Trials to revise MRLS - Progress

Applications for EU and CODEX are submitted –

Bitertanol, Propiconazole, Tebuconazole, Imidachloroprid and Chlorfluazeuron

Copper (40ppm) – Joint application with India submitted to EU

Diuron and Pyroclostrobin – Field trials are in progress



Thank You

