Conference on Food safety:

Science, Evidence & Regulations

Safety Issues Relevant to Tea in Sri Lanka

Presented by

T.T. Christy Dip in Agriculture

General Manager (Tea)

Agalawatte Plantations Plc (A member of the Mackwoods Group)

Sri Lanka Tea industry overview

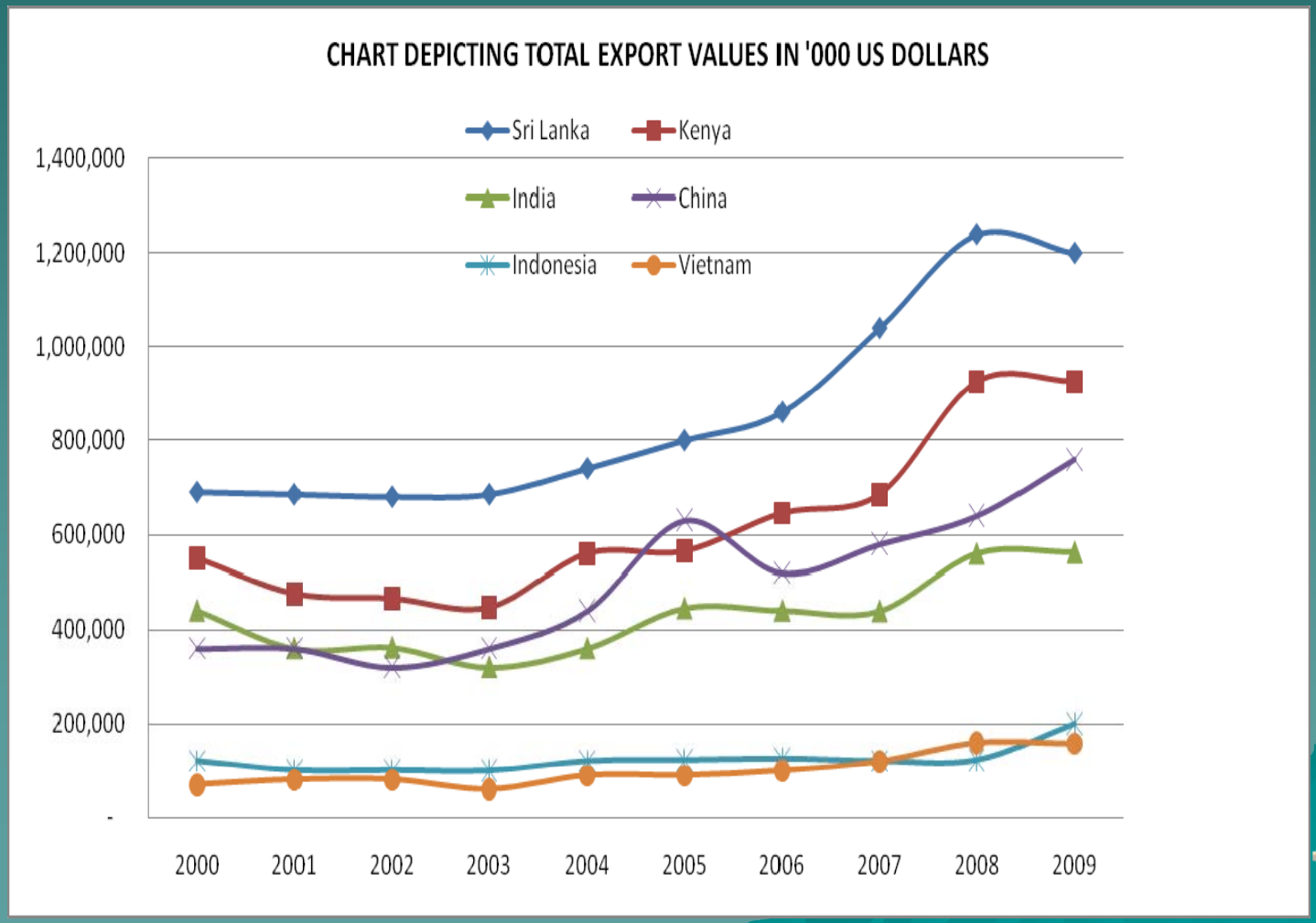
- Family - ***genus camellia*** - 82 species.
  - ***camellia sinensis*** – consumed as a beverage.
- The word "TEA" was derived from the Portuguese word "TCHA."
- 1839 - An authentic batch of seeds was planted in Sri Lanka at the Royal Botanical Gardens in Peradeniya.
- 1867 - James Taylor undertook commercial planting
  - 19 acres on Loolecondera Estate, Hewahatta. At the same time, brothers Solomon and Gabriel de Worms planted Tea at Mackwoods Labookellie Estate, Nuwara Eliya.
- 1872 - First year of export of tea by Sri Lanka.

Sri Lanka Tea industry overview Cont ...

- Largest producer and exporter of orthodox black tea.
- Largest exporter of value added tea. (Greater than 50% of total production)
- First tea producing country to exceed US$ 1 billion in revenue.
- Cleanest tea in the world in terms of pesticide residue – ISO.

Sri Lanka Tea industry overview contd …

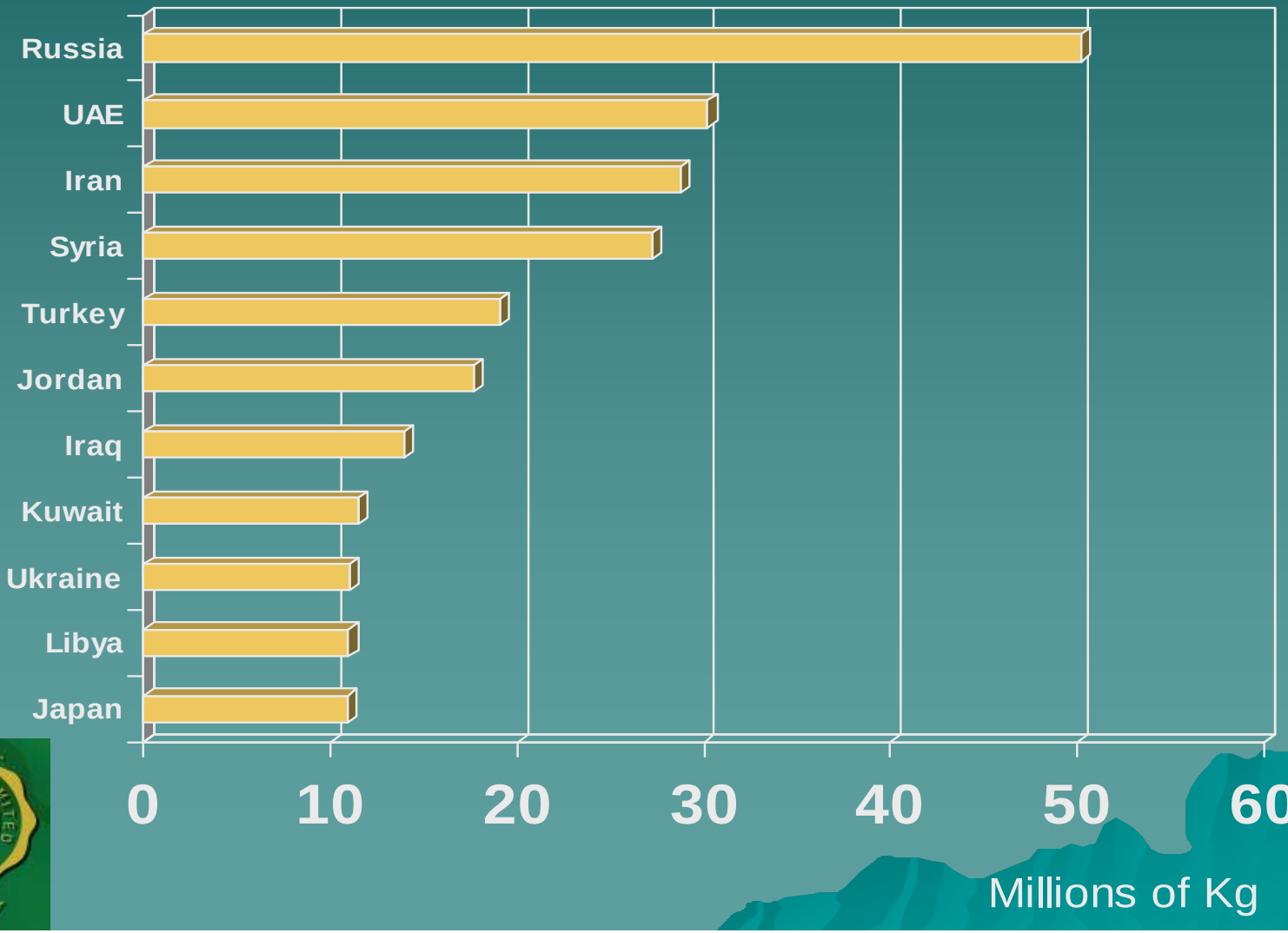
- Production : Approx 310 million kilograms per year.
- Annual Revenue 2010 : US$ 1.2 billion



Sri Lanka Tea industry overview contd …

- Sri Lanka Tea Exports 2010 (Top 10 Countries)

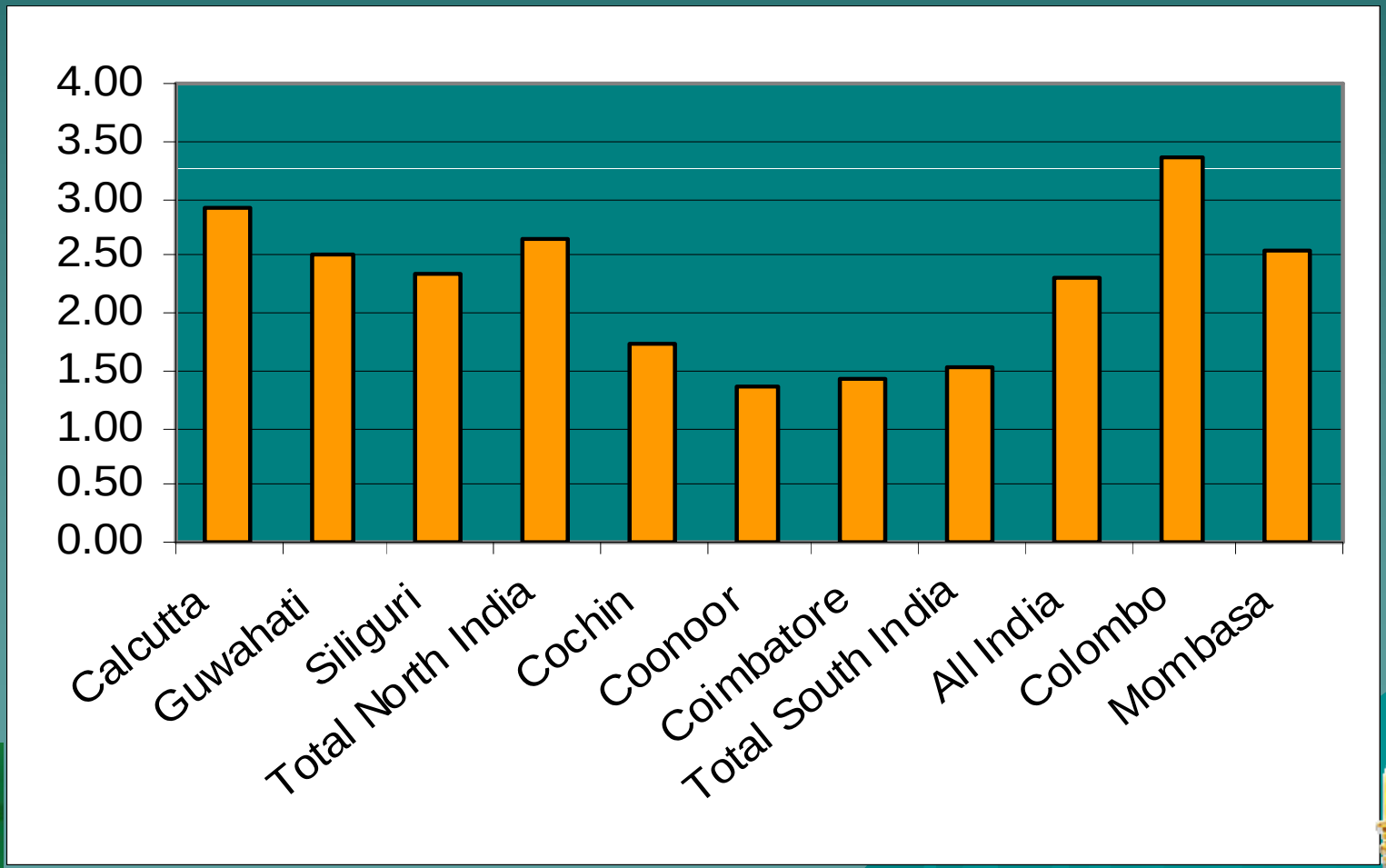
  52% of all exports to the Middle East and North African countries



Sri Lanka Tea industry overview contd …

- World Auction Averages – 2010 (in US$)

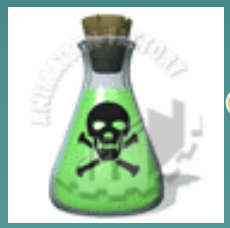
  95% of Sri Lankan Tea is sold through auctions.



Safety Issues Relevant to Tea in Sri Lanka

Food Safety

Food Regulation



Microbiological Additives, Contaminants, Toxins, Environmental Pollutants, Adulterants

Monitoring a safe Ceylon Tea...

National Level Policymakers & Regulatory Bodies:

- Ministry of Plantation Industries
- Sri Lanka Tea Board (SLTB)
- Tea Research Institute (TRI)
- Colombo Tea Traders Association (CTTA)
- Sri Lanka Standards Institute (SLSI)
- Registrar of Pesticides (ROP)

Sri Lanka Quality Standards

- *Lion Logo*

  - 100% Pure Ceylon Tea exported from Sri Lanka

- *Montreal Protocol Implementers Award 2007*

  First and only country to produce **Ozone Friendly Tea**

- *Production / Process / Packaging related quality standards*

  : ISO
  : HACCP
  : SLSI

- *Customer driven standards*

  : Ethical Tea Partnership (ETP)
  : Rainforest Alliance (RA)
  : Equitytrade Tea

Sri Lanka Tea Board Standards for "Sri Lankan Origin Tea"

- ISO 3720 – For "Sri Lankan origin tea" and "Other origin tea."

Covers : i) Foreign Matter

ii) Heavy Metals

iii)Microbiological Requirement

iv) Pesticide Residual Levels

Sri Lanka Tea Board Standards for “Sri Lankan Origin Tea”

sic Requirement : ISO 3720: 1986 / Corrigendum 1 : 1992 (E)
:2004 (E)

me of Standard	Accepted Limit	Test Method Ref.
Water Extract	min 32% (m/n)	ISO 9768:1994
Total Ash	min. 4% (m/m)- max. 8% (m/m)	ISO 1575:1987
Water – soluble ash of total ash	min. 45% (m/m)	ISO 1576:1988
Alkalinity of water-soluble ash (As KOH)	min. 1.0% (m/m)– max. 3.0% (m/m)	ISO 1578:1975
Acid insoluble ash	max. 1.0% (m/m)	ISO 1577:1987
Crude fibre	max. 16.5% (m/m)	ISO 15598:1999

SRI LANKA TEA BOARD GUIDELINES

oreign Matter - Completely free

as should comply with ISO 3720 parameters specified above)

Heavy Metals :

		Test Method Ref.
ron	- max. 500 mg/kg	AOAC: 975.03 (1995)
Copper	- max. 100 mg/kg	AOAC: 971.20 (1995)
Lead	- max. 5 mg/kg	AOAC: 972.25 (1995)
Zinc	- max. 100 mg/kg	AOAC: 969.32 (1995)
Cadmium	- max. 0.2 mg/kg	AOAC: 973.34 (1995)

(AOAC – Association of Official Analytical Chemists)

SRI LANKA TEA BOARD GUIDELINES Cont ....

icrobiological Requirement :

ame of Standard	Accepted Limit	Test Method Ref.
erobic plate count	max.10,000/g	SLS 516: Part 1: 1991
ast & mould	max.1,000 counts/g	SLS 516: Part 2: 1991
tal coliforms	max.10 MPN/g	SLS 516: Part 3: 1982
coli	Absent / g	SLS 516: Part 3: 1982
lmonella	Absent / 25g	SLS 516: Part 5: 1992

4) Pesticide Residues :

e of the Pesticide	MRL EU : Issue 10 (20/09/07) mg/kg (ppm)	MRL Japan : Positive list (2/10/06) mg/kg (ppm)
,4 – D	0.1	NL*
itertanol	0.1	0.1
arbofuran	0.05	0.2
arbosulfan	0.1	0.1
hlorfluazuron	NL*	10
opper hydroxide	100 (as Cu)	Exempted
opper oxide	100 (as Cu)	Exempted
opper oxychloride	100 (as Cu)	Exempted
azomet	NL*	0.1
iazinon	0.02	0.1
iuron	NL*	1
enamiphos	0.05	0.05
enthion	0.1	NL*
lufosinate-ammonium	NL*	0.5
lyphosate	2	1
exaconazole	0.05	0.05
midacloprid	NL*	10
MCPA	0.1	NL*
letam Sodium	NL*	0.1
xyfluorfen	NL*	NL*
araquat	0.05	0.3
ropargite	5	5
ropiconazole	0.1	0.1
ulphur	NL*	Exempted
ebuconazole	NL*	30
ebufenozide	NL*	25
eem extract (Azadirachtin)	NL*	Exempted

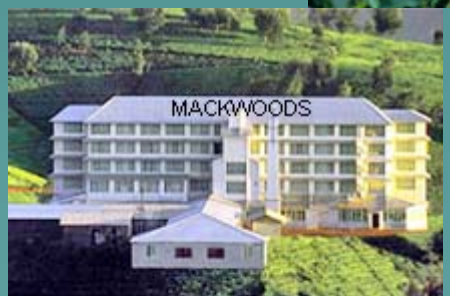
Food Safety Hazards can occur at any stage of the chain

umer

Field

er

Harvest



Good Agricultural Practices

Tea Nursery

Usage of Methyl Bromide Banned

Planting Material

Good Agricultural Practices

- Harvesting

Commercial leaf standard

- Weed Management
- Pest and disease

Only use chemicals recommended by TRI

Good Manufacturing Practices (GMP)

- Transport

Leaf racks / Leaf crates

- Withering

Good Manufacturing Practices (GMP)

Rolling

Stainless steel Machinery/ Industrial floor Food Grade conveyors

Fermenting

Good Manufacturing Practices (GMP)

Drying

Dryer mouth fired dhool moisture levels below 3%

Food Safety Issues Relevant to Tea in Sri Lanka

- Different Maximum Residue Levels (MRL) of importing countries:

Chemical Name	Jap MRL	EU MRL
Propargite	5	5
Phenamiphos	0.05	0.05
Bitertanol	0.1	0.1
2, 4-D	**0.01**	**0.1**
MCPA	**0.01**	**0.1**
Diazinon	0.1	0.02
Glufosinate-ammonium	0.5	0.1
Sulphur	Exempted	5
Carbofuran	0.2	0.05
Paraquat	0.3	0.05
Diuron	1	0.1
Glyphosate	**1**	**2**
Metam Sodium	0.1	0.02
Fenthion	0.01	0.1

MR Levels - Can we harmonise?

Food Safety Issues Relevant to Tea in Sri Lanka Cont ....

Necessity to have more alternative chemicals - Development of safe chemicals has to undergo a rigorous process of field trials and tests.

Cost factor - a) Re-engineering factories
- b) Manual weeding

Need for more testing facilities for producers at site.

Ensure that quality teas are imported.

Tea Brew – The Working Group on MRL's on the Tea Brew has submitted their request to CODEX Committee on Pesticide Residue (CCPR) and is waiting for a response.

THANK YOU

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