



# Key issues:

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- **CSE report;**
- **Separate standards:**
- **Standards for soft drinks;**
- **Regulation of caffeine;  
groundwater etc;**
- **Pesticide regulations;**
- **Drinking water standards;**
- **Manifesto for public health**



# 1: The results

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**“Whether the recent findings of CSE regarding pesticide residues in soft drinks are correct or not”**

**Were we wrong because:**

- A. The residue levels found in our tests were **higher** than CFTRI/CFL and CPCB?**
- B. We reported **malathion**, which CFTRI/CFL did not detect?**
- C. We did not use a **GC-MS**?**
- D. We are not an **accredited lab**?**



## A. Residue levels

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- Labs found:
- CFTRI/CFL: 1.2-**5.2** times higher than EU;
- CSE: 11-**70** times higher;
- CPCB: 3.1-**7.2** times higher;
- Shriram: 17-**419** times higher; (NABL-accredited lab)

**JPC: “The issue is difference in location and batches”**



## B. Malathion: wrong?

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**Malathion detected by:**

- 1. CSE: 97 % samples;**
- 2. CPCB: 100% samples;**
- 3. Shriram: 100% samples – 99 times above EU limit.**

**JPC: “3 out of 5 labs detected Malathion”**



## C. GC-MS: Cannot test without?

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- **No GC-MS. We checked and reconfirmed with second GC column as required by the USEPA methodology.**
- **USEPA methodology 8081A and 8141A states that “GC-MS may not be used for confirmation when pesticide levels are less than 1 M g/M L in the extract” (our results were below).**
- **But if GC-MS is so important than most research on pesticide residue in India would be wrong. ([DATABASE](#))**



## D. Accreditation?

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- **Only 7 labs** are NABL-accredited to test pesticides in water. Cannot be the criterion for discrediting any report.
- We have internal quality standards and checks.
- Different ways of checking: Sent samples to an accredited lab to reconfirm our analysts findings. Rechecked. Reconfirmed.



# Issue is not if **we are** wrong. But if **all Indian** labs are wrong

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- Companies say that their products are safe. They say they know because “independent labs” have tested.
- But their labs are better – they are located abroad. TNO lab in **The Netherlands** and CSL lab in **UK** has said that they are safe.
- All Indian labs found pesticides. TNO/CSL did not. Who is correct?



# Foreign certificate of safety



Gurinderpal Singh -Senior Chemist, Kandhari Beverages Limited with his wife Navjot Kaur and nephew Balwinderjeet

"We make soft drinks for millions of people across the globe that include our own family and friends. Would we have offered our products to our loved ones unless we were sure that they are safe for consumption?

As a matter of fact, at every step in the manufacturing process, our products go through a series of stringent tests. All these tests are carried out by a team of highly trained analysts. That apart, we encourage independent tests by accredited international labs. The most recent

ones conducted were by the highly reputed TNO of The Netherlands and Britain's prestigious Central Science Lab. Interestingly, the latter was an *Outlook* magazine initiative. And, like all other accredited tests showed, these also proved that our products are safe for consumption. Little wonder, we can offer you our soft drinks without hesitation or fear.

In sum, we take extreme precautions to ensure that only the best is enjoyed by our families. And you."

**Quality... Trust... That's Our Promise**

*Coca-Cola*





# Indian/Foreign lab: who can find?

Labs can only detect above their limit of quantification (LOQ)

LOQ (in ppb)	TNO - Netherlands	CSL – London	Vimta- India (CSE similar)
DDT, Lindane, Chlorpyriphos, Malathion	1 (10 times EU Standard)	0.5 (5 times EU Standard)	0.05 (Half-EU Standard)
Overall detection Limit of equipment	Only possible if pesticides in sample <b>5-130</b> times above EU limit	Only possible if pesticides in sample <b>5-25</b> times above EU limit	Can quantify pesticide even if they are <b>half</b> the EU Limit
Remarks	<b>Least Sensitive.</b> So did no find pesticide.	<b>Still poor sensitivity.</b> So did not find pesticide.	<b>Most sensitive.</b> So found pesticide.



# “We are safe”

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**In sum they said, “believe us we are safe. You cannot check, because we are very complex. But we meet the most stringent standards. We are clean. But we **cannot** be regulated.”**

**They are telling consumers, they have checked. Used foreign labs, which are more superior than Indian labs. **They are safe.****



# Are drinks 'safe'?

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- **Safety defined as:**
- **Meeting and adhering to a given norm.** Product unsafe if contaminants are above the norm.
- **No norms for pesticide residues in soft drinks. But norms for inputs exist. Therefore, we calculated:**
- **89% water: Different standards reviewed**
- **10% sugar: Checked for standards**
- **1% others: no standards**



# Calculation: sugarcane

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**No MRL** – standards -- for DDT, Lindane, Chlorpyrifos, Malathion for **sugarcane in PFA, EU, Codex, USEPA.....**

By law, if MRL for a pesticide is not listed in the standard, there must not be any detectable residue of that pesticide in the food. If found it is **“illegal”** or should not have been used.

Therefore, **no residues** of these pesticides are allowed in sugarcane. The principle is that the standard for sugarcane applies for processed sugar.



# Pollution Monitoring Laboratory

- **Soft Drink =**  
89% water + 10% sugar + 1% [CO<sub>2</sub>+concentrate]  
Let us take **Indian** guideline [in ppb] >

	Water	Sugar	CO <sub>2</sub> +concentrate	Final
	BIS-IS10500	PFA	PFA	Indian
DDT	Absent [0]	0	0	Absent [0]
Lindane	Absent [0]	0	0	Absent [0]
Malathion	Absent [0]	0	0	Absent [0]
Chlorpyriphos	Absent [0]	0	0	Absent [0]



# Pollution Monitoring Laboratory

- **Soft Drink =**  
89% water + 10% sugar + 1% [co<sub>2</sub>+concentrate]  
Let us take **WHO** Standard [in ppb] >

	Water	Sugar	CO <sub>2</sub> +concentrate	Final
	WHO	Codex	Codex	WHO
DDT	1	0	0	0.9
Lindane	0.3	0	0	0.27
Malathion	900	0	0	810
Chlorpyriphos	30	0	0	27



# Pollution Monitoring Laboratory

- **Soft Drink =**  
89% water + 10% sugar + 1% [CO<sub>2</sub>+concentrate]  
Let us take **USEPA** Standard [in ppb] >

	Water	Sugar	CO <sub>2</sub> +concentrate	Final
	USEPA	USEPA	USEPA	USEPA
DDT	No standard [0]	0	0	0
Lindane	0.2	0	0	0.18
Malathion	No standard [0]	0	0	0
Chlorpyriphos	No standard [0]	0	0	0



# Pollution Monitoring Laboratory

- **Soft Drink =**  
89% water + 10% sugar + 1% [CO<sub>2</sub>+concentrate]  
Let us take **Packaged Drinking Water** Standard [in ppb] >

	Water	Sugar	CO <sub>2</sub> +concentrate	Final
	Packaged Drinking Water	PFA	PFA	Packaged Drinking water
DDT	0.1	0	0	0.09
Lindane	0.1	0	0	0.09
Malathion	0.1	0	0	0.09
Chlorpyriphos	0.1	0	0	0.09



# Pollution Monitoring Laboratory

- Different standards for Soft Drinks derived from different regulatory regimes [in ppb]

	Indian BIS	WHO	USEPA	Packaged Drinking water
DDT	Absent [0]	0.9	0	0.09
Lindane	Absent [0]	0.27	0.18	0.09
Malathion	Absent [0]	810	0	0.09
Chlorpyriphos	Absent [0]	27	0	0.09

- **100%** of CFL/CFTRI/CPCB samples **fail water guideline**



# Pollution Monitoring Laboratory

- Different standards for Soft Drinks derived from different regulatory regimes [in ppb]

	Indian BIS	WHO	USEPA	Packaged Drinking water
DDT	Absent [0]	0.9	0	0.09
Lindane	Absent [0]	0.27	0.18	0.09
Malathion	Absent [0]	810	0	0.09
Chlorpyriphos	Absent [0]	27	0	0.09

- **100%** of CFL/CFTRI/CPCB results **fail water guideline**
- **67%** of CFTRI and **33%** of CFL results **fail WHO norm**



# Pollution Monitoring Laboratory

- Different standards for Soft Drinks derived from different regulatory regimes [in ppb]

	Indian BIS	WHO	USEPA	Packaged Drinking water
DDT	Absent [0]	0.9	0	0.09
Lindane	Absent [0]	0.27	0.18	0.09
Malathion	Absent [0]	810	0	0.09
Chlorpyriphos	Absent [0]	27	0	0.09

- **100%** of CFL/CFTRI results **fail BIS norm**
- **75%** of CFTRI and **58%** of CFL results **fail WHO norm**
- **100%** of CSE and **67%** CPCB results **fail WHO norm**



# Pollution Monitoring Laboratory

- Different standards for Soft Drinks derived from different regulatory regimes [in ppb]

	Indian BIS	WHO	USEPA	Packaged Drinking water
DDT	Absent [0]	0.9	0	0.09
Lindane	Absent [0]	0.27	0.18	0.09
Malathion	Absent [0]	810	0	0.09
Chlorpyriphos	Absent [0]	27	0	0.09

- **100% of CFTRI / 92% CFL/100% CPCB/ 100% CSE fail USEPA norm**



# Pollution Monitoring Laboratory

- Different standards for Soft Drinks derived from different regulatory regimes [in ppb]

	Indian BIS	WHO	USEPA	Packaged Drinking water
DDT	Absent [0]	0.9	0	0.09
Lindane	Absent [0]	0.27	0.18	0.09
Malathion	Absent [0]	810	0	0.09
Chlorpyriphos	Absent [0]	27	0	0.09

- **100%** of CFTRI / **92%** CFL/**100%** CPCB/ **100%** CSE fail USEPA norm
- **83%** CFTRI/CFL and **100 %** CSE/CPCB fail packaged drinking water norms



# Meeting standards?

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- Affidavit in court PepsiCo has said its “*carbonated soft drinks, adhere to such standards and norms that are much more stringent than those insisted upon internationally*”.
- This is correct, only if **ALL** Indian lab reports are **wrong**. Only then are companies meeting international or national standards.
- Otherwise not meeting standards. **Unsafe.**



# JPC report concludes

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- **..“Despite the detection of pesticides in samples of soft drinks by CSE, CFTRI and CFL, Cola companies have been giving wide publicity in the electronic media stating that their products do not contain any pesticide and are fully safe for human consumption. The committee feels that claims made by Cola companies in their advertisements tantamount to **misleading the public** as their products do contain pesticides which have **ill effect on human health** in the long run.”**