

# Health Hazards & Its Impact on Colas Consumption Would this Lead to End of Cola's Era?

## A Case Study

Prof. Ashok Kurtkoti\*

Dr. Surabhi Jain\*\*

Prof. Bidhan Datta\*\*\*

### ABSTRACT

*In India, Colas health hazard controversy came into limelight due to the hue and cry made by CSE chief Ms. Sunita Narain, who pointed out high levels of pesticide contents tested in all the major brands of Colas giants- Coca-Cola & Pepsi in 2006. Kerala Government was the first to ban production and sales of Colas in 2006. A few other states, while some awaited clearance from the Central Government, others banned Colas near educational institutes & government establishments. However, Cola giants were supported by the industrial bodies namely CII & FICCI who opposed the ban.*

*Globally there is a great opposition to Colas consumption and top scientists have always said that Colas consumption is bad for health and cause many diseases.*

*In Pune, a market survey was carried out in 2006 and 2007 to find out as to whether there is any change in perception, consumer/brand preferences due to pesticides found in Colas controversy. It was observed that the target market under study had considered this episode as a bad dream and wholeheartedly supported Colas consumption with the shift in brand preferences. A clear picture will emerge after the results of nationwide survey on Colas carried out by health ministry will be announced by the end of 2008.*

### Some Initial Thoughts

Cola's health hazard controversy surfaced in India when Centre of Science And Environment (CSE) head, Ms Sunita Narain stated that it was sheer fluke that, they decided to test the Colas & found alarmingly high levels of pesticides in all soft drinks tested. [1]. This controversy of pesticides in colas strangely lies in the list of CSE's website. Drinking water! in 2003. Three years after the first cautioning of pesticides residue in soft drinks of Global giants Coca- Cola & Pepsi, CSE on 2nd August 2006, came out with a fresh study claiming alarming high levels of pesticide in these drinks. [2]

As a reaction to the above findings, Kerala was the first state to ban both production and sale of Colas on 6th August 2006. The ban covered all prominent brands sold by Pepsi & Coke namely, Pepsi, Coca-Cola, Mirinda, Mountain Dew, Diet Pepsi, Pepsi Blue, Fanta, Limca, Sprite, Thums up, 7 Up. Infact, Coca -Cola had to close down its plant in Kerala, due to protest by the local authorities. Also, in August 2006, a few other states like Rajasthan, Madhya Pradesh, Gujrat, Delhi, either banned sale of colas in and near educational institutions or government offices/ establishment while remaining states awaited clearance from the centre.[3]. While, Pepsi & Coca-Cola protesting the ban, got support from Industrial organizations like FICCI (Federation of Indian Chamber of Commerce & Industries) and CII (Confederation of Indian

Industries). Both organisations felt that, if different states started announcing a ban, without following the due process of law, India's credibility as an investment destination may come into question. The ministry of Health & Family welfare had rejected the CSE findings. A study conducted by a consumer body had shown that there is on extensive use of fertilizers and pesticides in Indian farms. Common edibles like rice, tea, milk, eggs, fruits, and meat in India permitted to contain upto 34000 times the pesticides found in Colas. [6]

**The permitted pesticides level & actual is as given below:13**

(In parts per million)

	EPA ^	WHO ^	CSE report*	UK lab*
Maliathon	100	NR	0.17	0.1
Lindane	0.2	NA	5.37	0.1
Heptachlor	0.4	0.03	0.41	0.1
Chlorpyrifos	20	30	4.71	0.1

Source:- Business India 10/09/06

\* Quantity detected

^ Norms for acceptable level.

\*Prof. Ashok Kurtkoti is a professor at MIT School of Business Pune Administration, University of Mysore, Mysore 570 006, Karnataka, India.

\*\*Dr. Surabhi Jain is a professor at PUMBA, Centre for Management Studies, Sri Jayachamarajendra College of Engineering, Mysore 570

\*\*\*Prof. Bidhan is a faculty in MIT school of Business- Pune

EPA:- Environmental Protection Agency

WHO:- World Health Organisation

### Health Hazards Due To Colas Consumption

Several studies conducted by some of world's top scientists have always said that Colas are bad for your health.<sup>27</sup> The studies claim that consumption of colas causes brittle bones, contain fructose in concentrated amount that triggers weight gain in the body and lead to cell damage, switching of vital parts of DNA, eventually leading to cirrhosis of the liver and degenerating diseases like Parkinson.<sup>27</sup>

As published in Sakal (Marathi Daily) family doctor, dated 27/10/2006, study was conducted by TUFTS University in USA on 2538 adults consuming soft drinks.<sup>28</sup> Bone Mineral Density (BMD) in females consuming colas daily is less than females consuming colas once in a month. There is a direct co-relation between BMD and incidence of frequent bone fractures. Study also showed that cola is a popular drink resulting into reduced consumption of milk, in the category of adolescents. With more consumption of colas, the size and structure of bones become smaller. This study was conducted on 1413 females and 1125 males. The Colas contain less phosphoric acid and calcium. Therefore, it was recommended to avoid consumption of cola drinks for females who have less BMD. Surprisingly there is no appreciable difference in BMD of male members during this time.

Too much edible sodas can increase the risk of diabetes, obesity, Colas contain high level of phosphoric acid which has been linked to kidney stones and other renal problems<sup>10</sup>.

### Recent Development In Colas/ Fruit Juices/ Mineral Water Markets.

The national level expert panel was set up under the chairmanship of the director General of Indian Council of Medical Research (ICMR) N.K. Ganguly to guide the ministry's subcommittee in fixing the maximum residue limits (MRL) of pesticides like DDT-R, Chloropyriphosmalthian and endosulfan in carbonated beverages, fruits, vegetable juices and other finished products including methodology, toxicity, risk analysis. The Ganguly panel concurred with the report of the joint parliamentary committee (JPC) that MRLS for pesticides in fruits and vegetable juices should be different from that of carbonated water.

Indian Medical Association (IMA), signed three years deal with Pepsico for Tropicana pure juices and Quaker oats in India<sup>25</sup>. Pepsico's snack food from Frito Lay India has tied up with IMA to promote both products. Initially there was some resistance on whether IMA would endorse company that also makes colas but IMA research showed that Tropicana pure juices and Quaker have significantly proven health benefits.

According to Cherukavi Ravishankar, Manager (Strategic and Commercial Intelligence for transaction service Consultancy major KPMG, worldwide), there is indeed a realisation of how the health affected by a lifestyle fueled with junk food, including

carbonated beverages and this awareness is only going to grow exponentially with access to viral media such as web.

Pepsi plans \$500 million investment in India and according to PepsiCo aiming to bolster its non carbonated functional beverages portfolio, and it is learnt that PepsiCo India is expected to introduce fortified energy drink, SoBe in Indian Market<sup>23</sup>. PepsiCo already sells a low calorie sports drink:- Gatorade in India. Similar to Gatorade, SoBe will also cater to a niche, specific market. The Indian energy drink market remains niche with few players of significance as of now Red Bull and smaller brand Power Horse. Coca-Cola too is in process of expanding its functional beverage brands Glacueau, Vitaminwater, Coca-Cola zero.

Bisleri International Chief Ramesh Chauhan's ambitious plans to foray in to a spate of beverages, including health drink, sugar free juices and juice drinks, under the brand Alfa & fortified and flavored waters<sup>22</sup>.

Indira Nooyi PepsiCo's global Chairman and CEO states that, "Health products are the future for PepsiCo". Health ministry has decided to conduct nationwide survey on colas. By end of 2008, based on study carried out by Indian Council of Medical Research (ICMR) along with nine institutes, covering 10000 households, involving interviews of nearly 70,000 people of all ages and social status, the following information will be known-

- 1) How much aerated drinks Indian consume daily, monthly & annually?
- 2) What is the annual production of such drinks?
- 3) Which states consume the most and the least amount of colas with which are the months of highest consumption?
- 4) Which age groups consume the most?
- 5) What are the health hazards they face due to their consumption pattern?

The study is being conducted in four metros besides Ahmedabad, Ludhina, Jorhat, Thiruvananthapuram. Also this study covers four rural districts- Moga (Punjab), Sabarkantha (Gujrat), Kolaghat (Assam) and Kollam (Kerala). One tribal belt in Madhya Pradesh Jhabua(urban), Barwani (rural) and two hilly sites Simla (urban) & Solan (rural) are also being studied.<sup>27</sup> Pepsi,

Coke pursues ancient leaf from Paraguay to revive colas.<sup>29</sup> A leaf the Guarani Indians of Paraguay's jungles used to sweeten drinks for centuries may help Coco-Cola and Pepsi Co revive flagging sales in the \$320 billion- a year global soft drink industry.

The US's FDA (Food and Drug Administration) is poised to vote on allowing a zero-calorie sweetener derived from the stevia plant grown from Paraguay and China. Stevia was described as the world's "sweetest" plant in a New York Times article in 1932.

Approval may allow the world's two largest soda makers to reverse three years of US soft-drink sales declines with beverages containing the natural extract, according to Mariann Montagne, an analyst at Minneapolis- based Thrivent Asset Management.

Massimo D'Amore, chief of Pepsi-Co's beverage division, said

on November 20, 2008 the company will use a compound made from stevia as an alternative to higher-calorie or artificial sweeteners in some drinks as soon as the government gives “the green signal”.

Proponents say the new stevia extract lacks the bitter aftertaste of older products using the leaf. The companies want to use rebaudioside A, a compound derived from stevia that is at least 200 times sweeter than sugar.

Pepsi and Coca-Cola for the first time come under one market research firm ACNielsen.<sup>30</sup> With entire soft drinks industries now coming under industry leader ACNielsen, measurements of market shares would not only become uniform, but also aid both companies in strategic decision making.

Coke, Pepsi and Parle are learnt to be working on a slew of new packaging options and sizes ranging from PET, tetra packs to returnable glass bottles for their respective juice brands.<sup>31</sup>

**Study On Pesticides In Colas Controversy**

In order to understand the impact on consumer perception, behavior and brand preferences arising out of pesticides found in colas controversy, a survey was carried out in Aug-Sep 2006. The sample size was 104 respondents. Respondents in the age group of 22-25 years were approached in Pune city. A study was carried out on 5 brands of soft drinks namely, Coke, Thums Up, Pepsi, Sprite & Mirinda. The result of this survey was however, inconclusive.

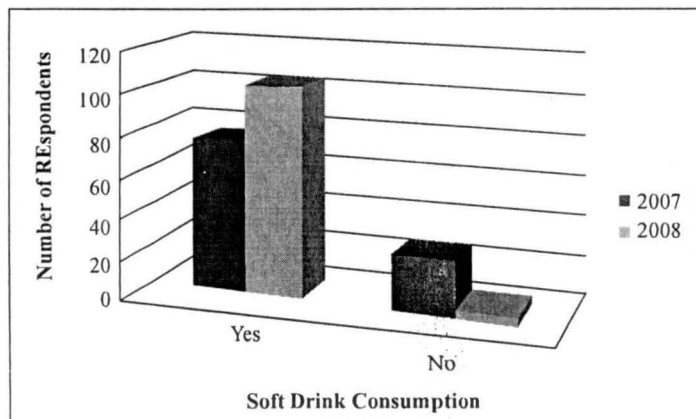
A further research was carried out in Sep-Oct 2007 with a sample size of 104 respondents. It was obviously not possible to approach the same respondents. Hence, similar selection criteria were used for both surveys i.e.

- a) College students in the age group of 20-25 years were approached.
- b) Minimum qualification was graduation.

The questionnaire used and the results obtained are outlined below:

**Q1. Do you consume soft drink?**

YEAR	2006	2007
YES	75	104
NO	29	Nil



**Findings:**

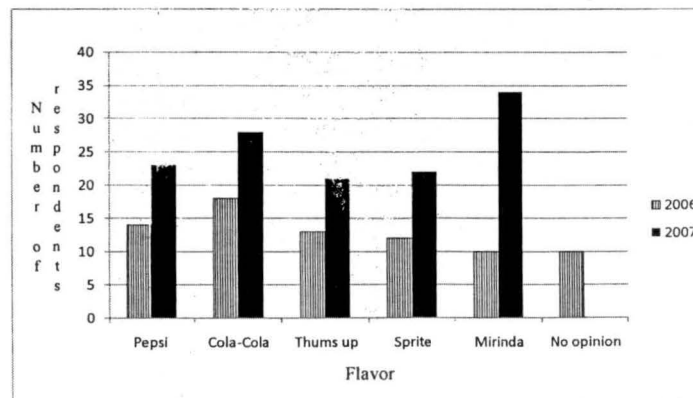
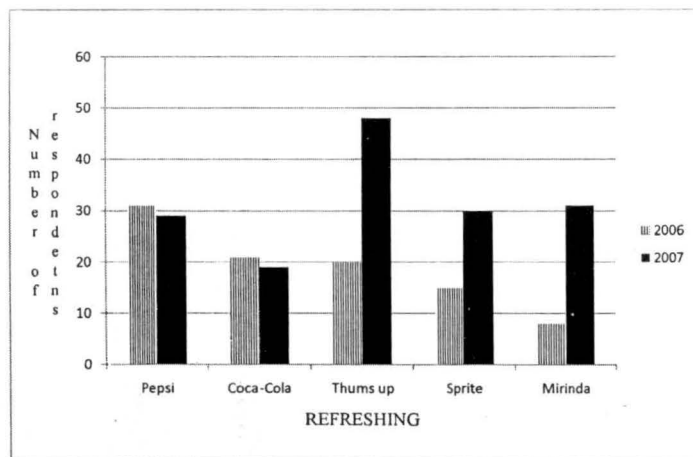
The survey revealed that the respondent's consumption in year 2007 was 100% instead of 72% in year 2006.

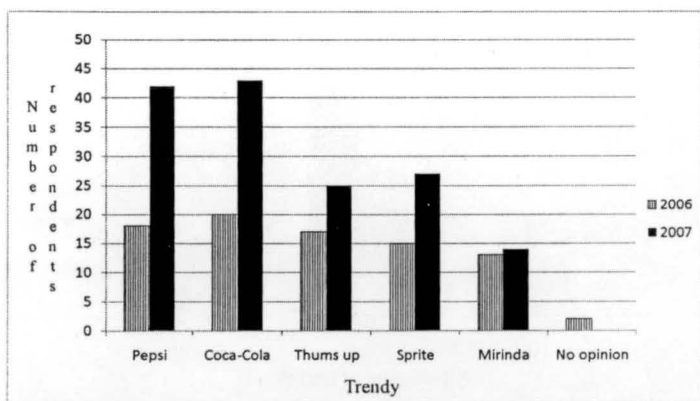
**Q2. What is your perception of different soft drink available in the market?**

The perception was found on 3 attributes namely refreshing, flavor and trendy

Attribute	Refreshing		Flavor		Trendy	
	2006	2007	2006	2007	2006	2007
Pepsi	31	29	14	23	18	42
Coca-Cola	21	19	18	28	20	43
Thums Up	20	48	13	21	17	25
Sprite	15	30	12	22	15	27
Mirinda	08	31	10	34	13	14
No Opinion	-	-	10	-	02	-
Total	95	157	77	128	85	151

Note:- As respondents had an option to select more than one drink, the total perception can be more than the sample size.





**Findings:**

- The most refreshing drinks being Pepsi & Thums Up in 2006 and 2007 respectively.
- As far as flavor is concerned coke was preferred over Pepsi in 2006. The same trend continued in 2007.
- Coca-Cola was considered to be most trendy

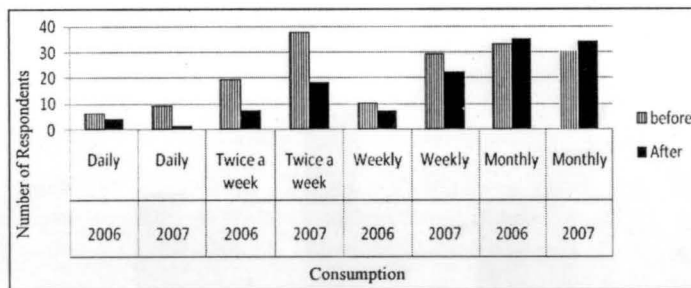
**Q.3 Which soft drink do you prefer?**

	2006	2007
Thums Up	24	33
Sprite	11	26
Coke	25	25
Mirinda	11	14
Pepsi	16	13
<b>Total</b>	<b>87</b>	<b>111</b>

**Note:-** As respondents had an option to select more than one drink, the total preferences can be more than the sample size.

**Q.4 What was your soft drinks consumption before and after the controversy?**

Year	2006				2007			
	Daily	Twice a week	Weekly	Monthly	Daily	Twice a week	Weekly	Monthly
Before	06	19	10	33	9	37	29	30
After	04	07	07	35	01	18	22	34



**Findings :**

After the controversy in 2006 & 2007 :

- Daily, twice a week and weekly consumption moved down.
- Monthly consumption had marginally gone up.

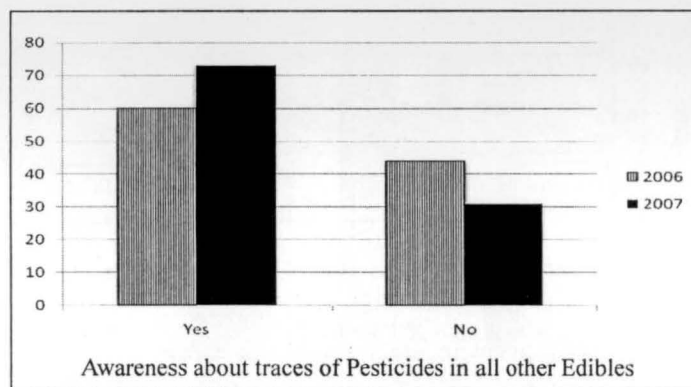
**Q.5 If you reduced/ stopped drinking soft drinks after the controversy, to which other drinks did you shift to?**

**Findings:**

Preference of coconut water and fruit juices remained unchanged in 2007

**Q.6 Are you aware that there are traces of pesticides in sugar, tea, coffee, milk and drinking water you consume?**

Year	2006	2007
Yes	60	73
No	44	31



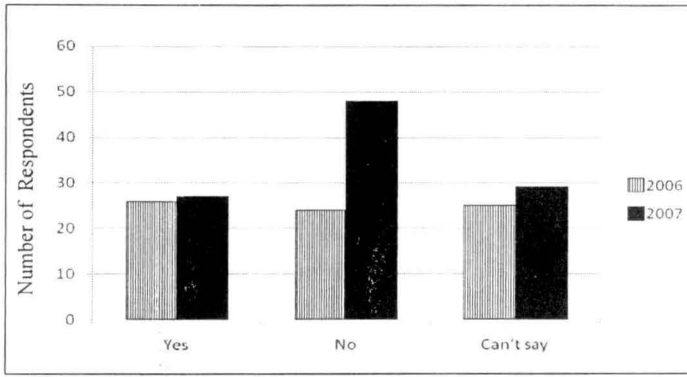
**Findings :**

The respondents awareness of traces of pesticides in many edibles and drinking water had increased in 2007.

**Q.7 According to you, is banning of soft drinks an answer to reducing health hazards?**

	2006	2007
Yes	26	27
No	24	48
Can't say	25	29

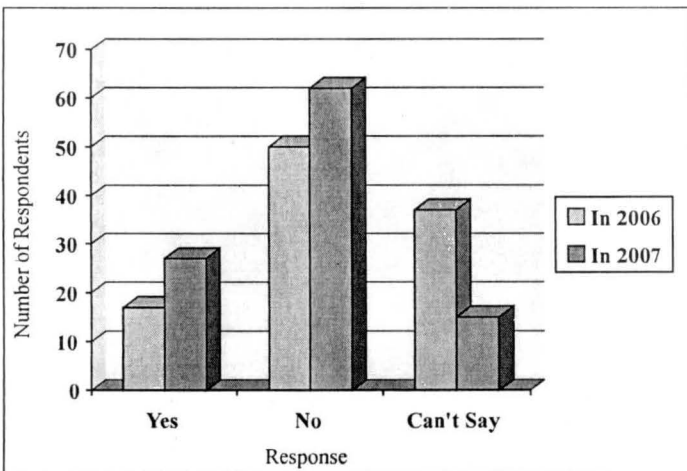




**Findings :** In 2006 , the opinion on banning of soft drinks was almost equally divided among the respondents on this issue. However, in 2007 the opinion was strongly in favor of not banning soft drinks, which is evident from increased consumption level by the respondents in 2007.(Difference between private actions & public posturing)

**Q.8** Has availability of soft drinks reduced after the controversy?

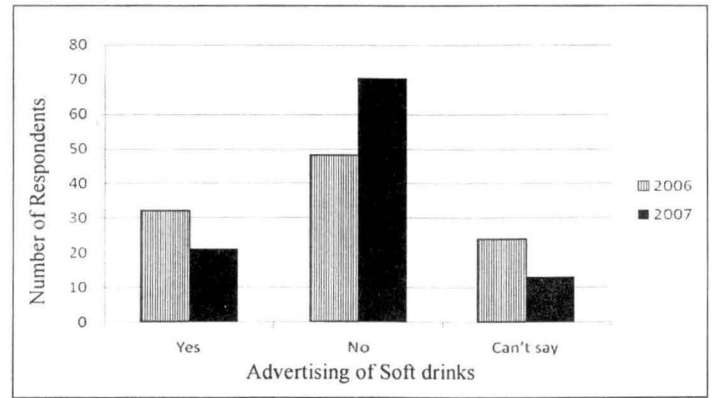
	2006	2007
Yes	17	27
No	50	62
Can't say	37	15



**Findings :** In 2006 and 2007, the majority of respondents stated that availability of soft drinks had not reduced, Some were unsure of this issue even in 2007.

**Q.9** Do you think that soft drink advertising should be banned ?

	2006	2007
Yes	32	21
No	48	70
Can't say	24	13



**Findings :** It was observed that the respondents felt that soft drink advertisements should not be banned.

**Conclusions**

1. There was a great awareness about pesticides in the soft drinks controversy, which had resulted in marginal reduction in consumption temporarily in 2006. However in 2007, the consumption levels have gone up, which indicates that the pesticides controversy was ignored by the target market.
2. The consumer preferences had shown a radical shift from one brand to another brand during the period under study.
3. For Colas as a category, even though the consumption for a target market under study may have gone up but globally there is change in the trends & health perception. All major soft drink manufacturer in India such as Pepsi Co, Coca-Cola, Parle etc. along with major FMCG players like Godrej & Dabur have started working towards launching substitute products like nutritious beverages& mineral water /health drinks in the market of Colas may be due to health perceived hazards.
4. Too much Sodas can increase the risk of diabetes, obesity, Colas contain high level of phosphoric acid, which has been linked to kidney stones and other renal problems<sup>10</sup>.
5. In the long run as more and more target market is becoming health conscious, it remains to be seen whether there will be a shift in the demand from soft drinks to substitute products like fruit juices, water, nutritional and sports drinks.
6. A clear picture of colas consumption & health hazards will be known after publishing of the result by ICMR, who is carrying out Nationwide survey presently.

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