

Agricultural contaminants: Farm Practices in Pesticide use

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*Pesticide Use in Rice bowl of Kerala and human health
–South Asian Network for Development and
Environmental Economics*

*Pesticide use and crop productivity in food crops of
Kerala-Kerala State Council for Science ,technology and
Environment*

**Supply Side Analysis of Pesticide Markets in Kerala-
Evidences from Retail Traders**

Kerala State Council for Science ,technology and Environment

Pesticide Scene in India

Largest manufacturer of basic pesticides in Asia

12 *th* globally

226 products

Insecticides 75%, Fungicides 12%, Herbicides 10%

Export oriented

Production – 80-85 MT

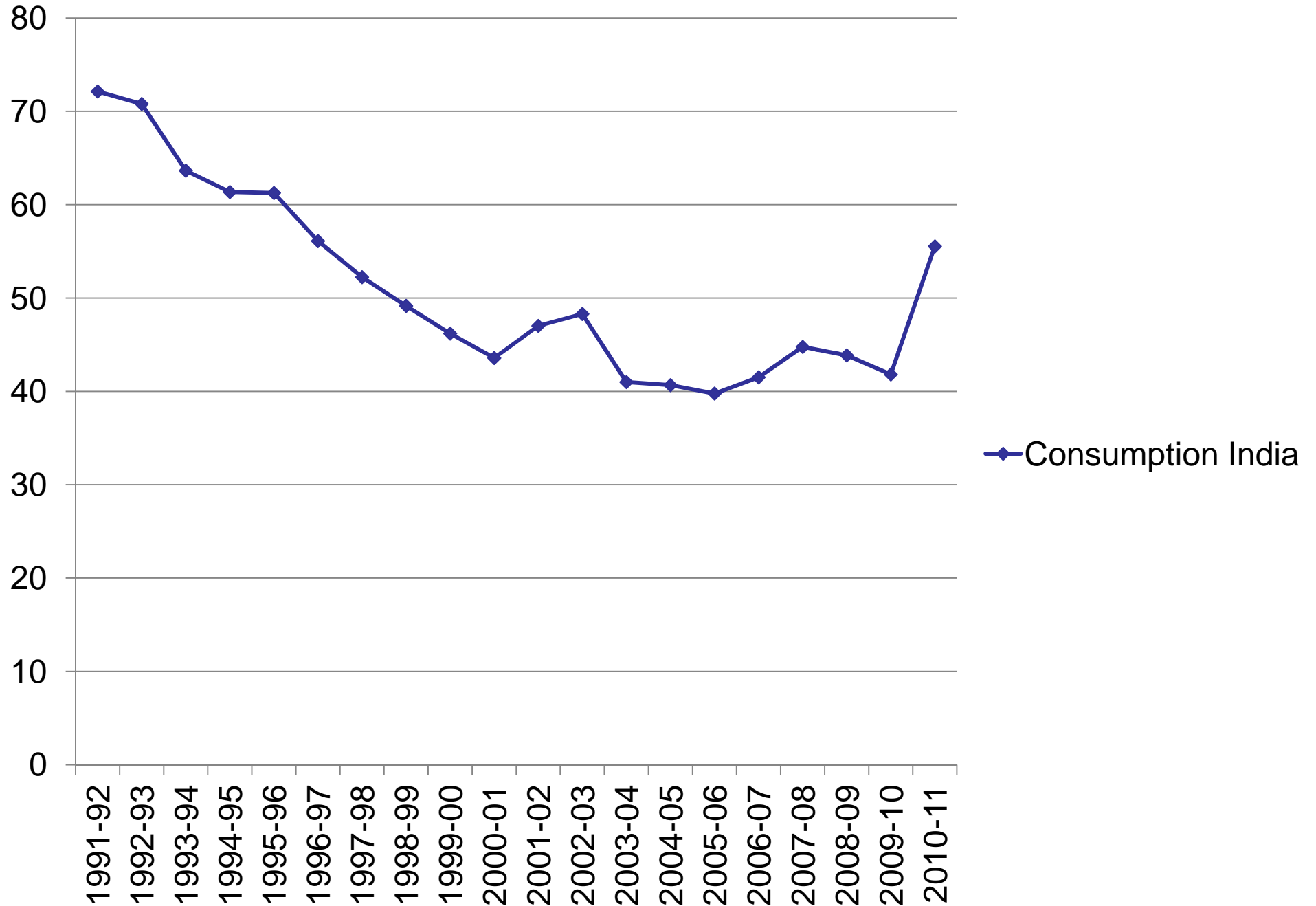
Imports - 19-29 MT

Consumption – 42-45 MT

EXPORTS – three times cons.

2.38% CAGR(US,EU,AFRICAN)

Consumption India



Can we relax?

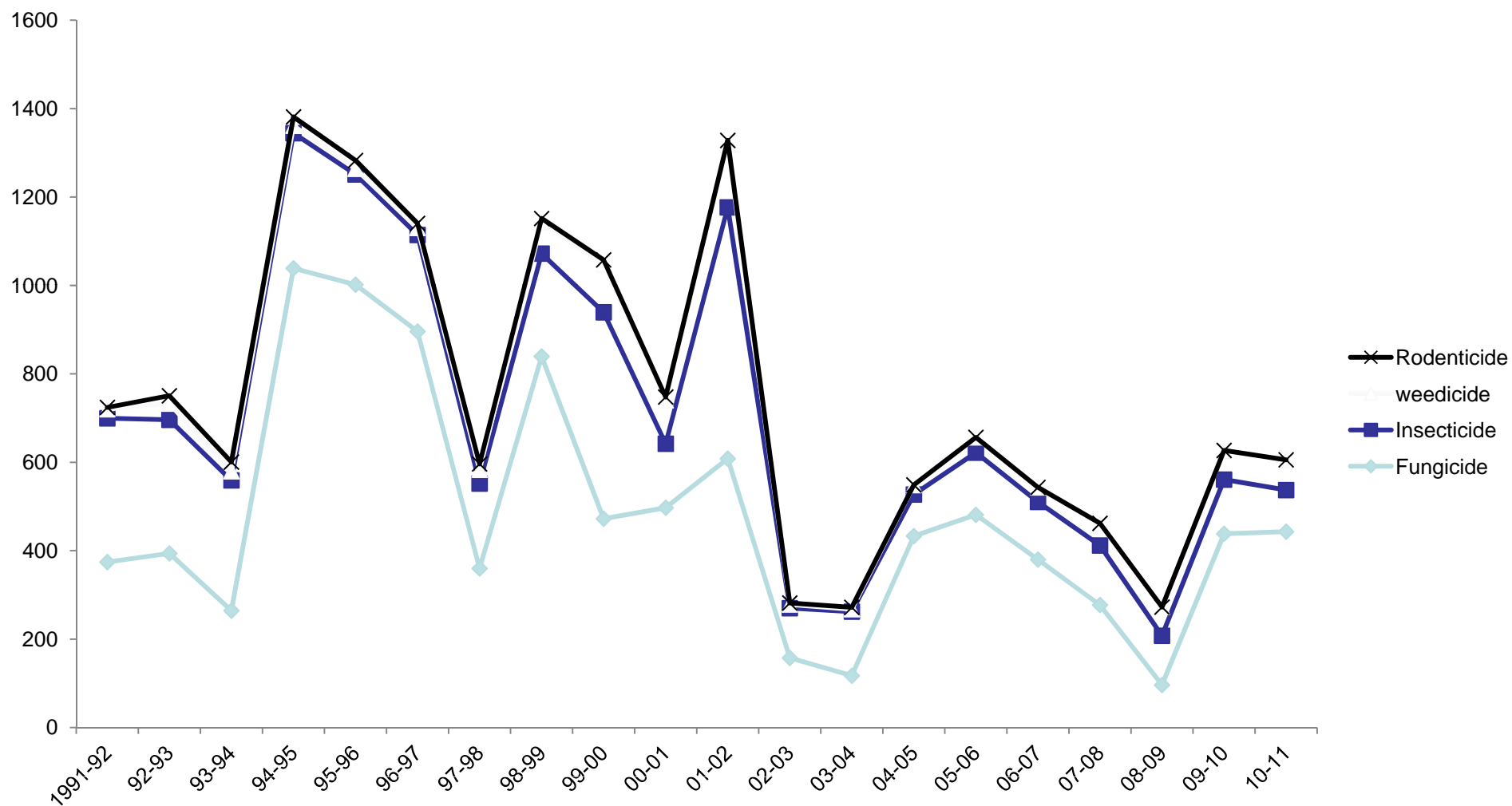
Is it due to decline in consumption ,in real sense?

Less quantity..more toxic,persistent?

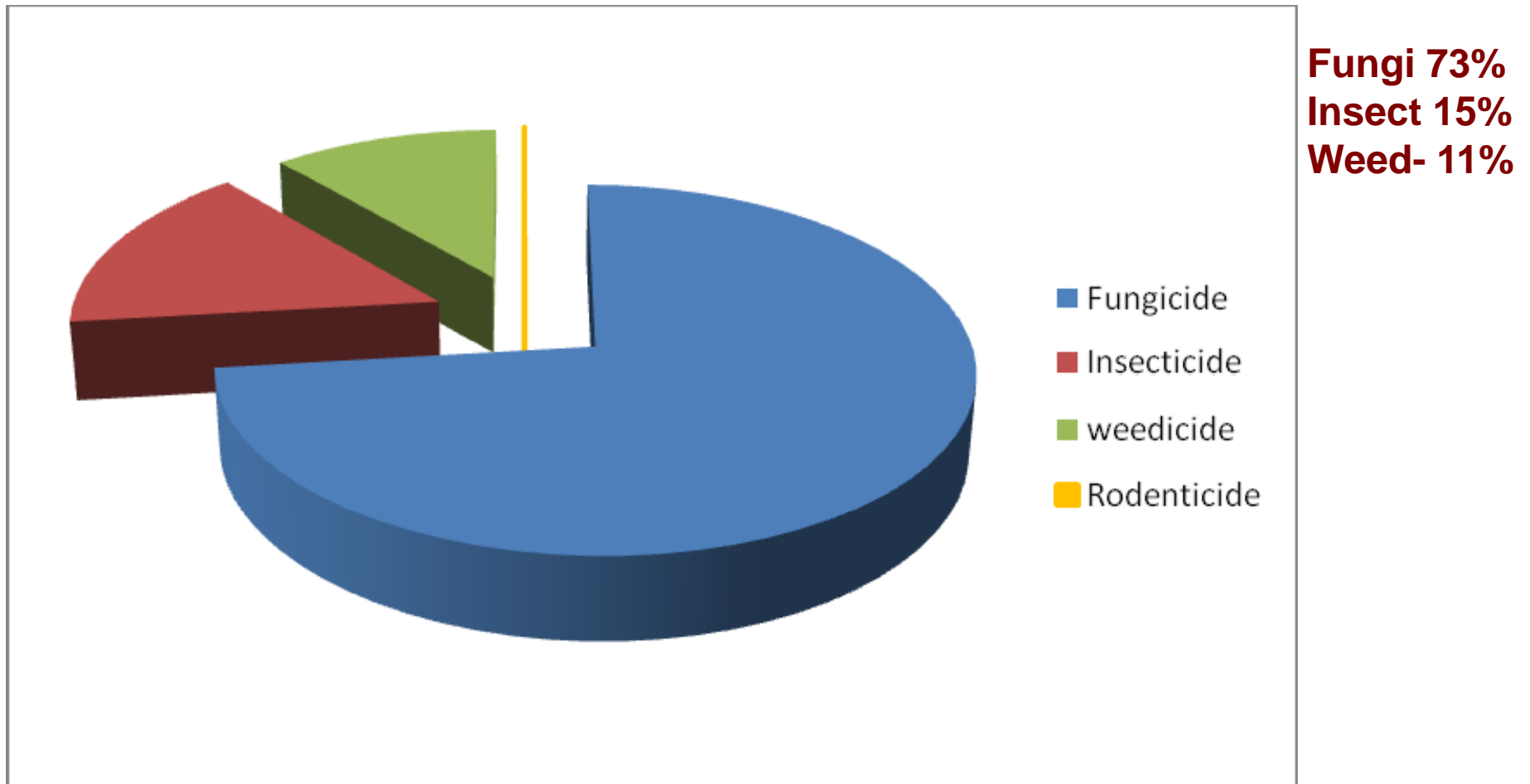
Kerala Scene-



Trend of Pesticide consumption in Kerala



Pesticide consumption in Kerala during 2010-11



Growth rates

Fungi-	-3.12%
Insect--	-16.46%
Weedi	-7.12%

Total- -7.55%

Concerns

Increasing share of weedicides

While *toxic and more persistent chemicals show a very high growth rate in consumption* ,

the chemicals that exhibit *a decline in consumption are safer and more in number, but less in the extent of decline.*

Sale Policy.....

[illegible]

Retailing -India

1,78,979 retail outlets

90% private

7% Cooperative

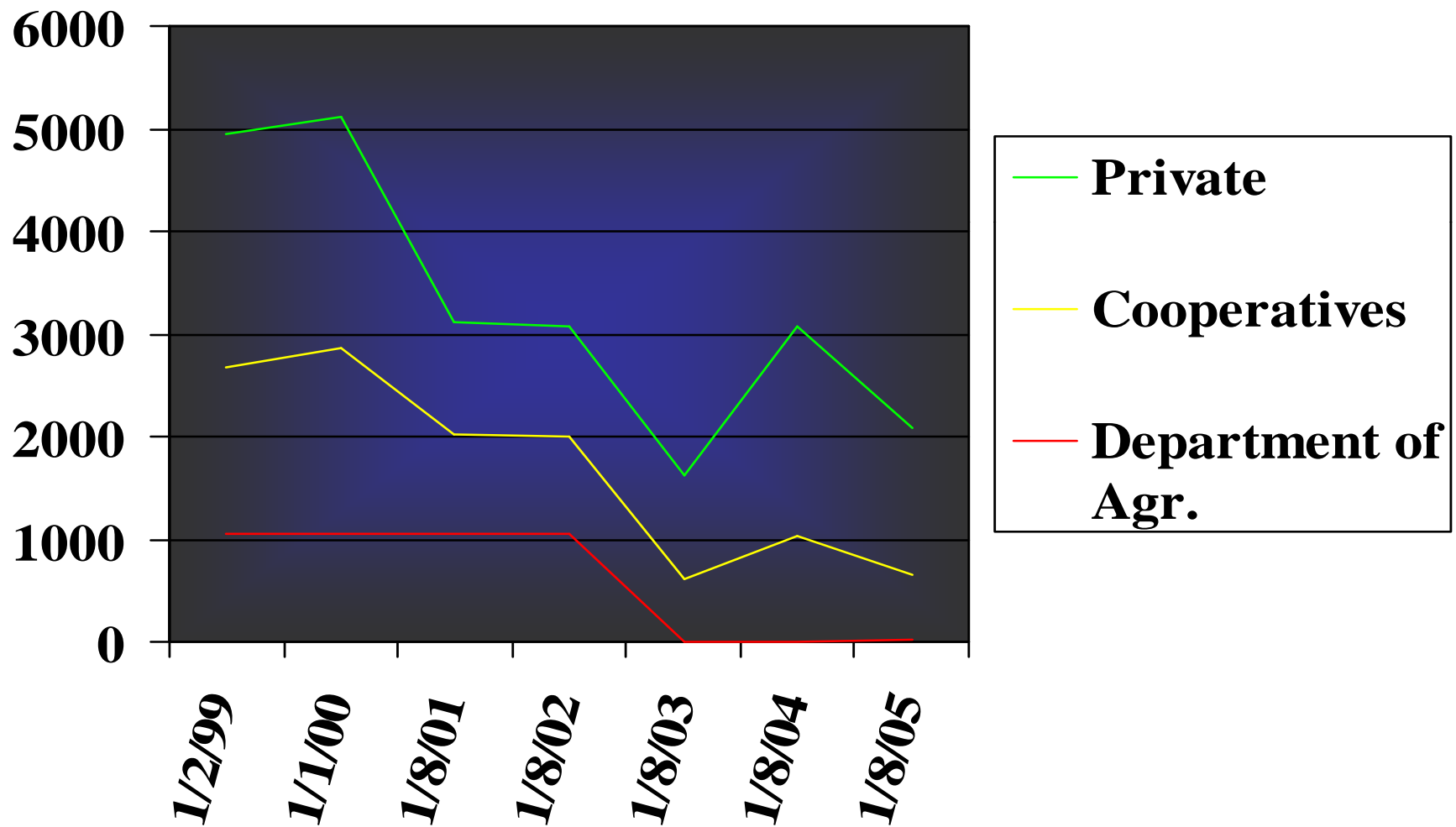
Only in 11 states public sector presence

HP, Meghalaya, Mizoram, Nagaland,
Punjab, Sikkim, TN, Tripura, UP,
Uttaranchal and UT of Delhi

In NE states (Mizoram, Meghalaya and
Nagaland) public sector has a major
share in pesticide retailing.

In HP 42% public and cooperatives
58% private).

Private Sector ruling the retail market-60%...



Poor Quality control arrangements.....

Date	Sample analysed	Sample found poor	Action taken
1997-98	1784	6	Nil
1998-99	1505	23	Nil
1999-2000*	1281	2	Nil
2000-01	1698	-	Nil
2001-2002	1591	3	Nil
April 2002- July 02	554	-	Nil

Micro level Behaviour- Farm practices



Risk management...

Risk assessment

Chances of pest attack?.....

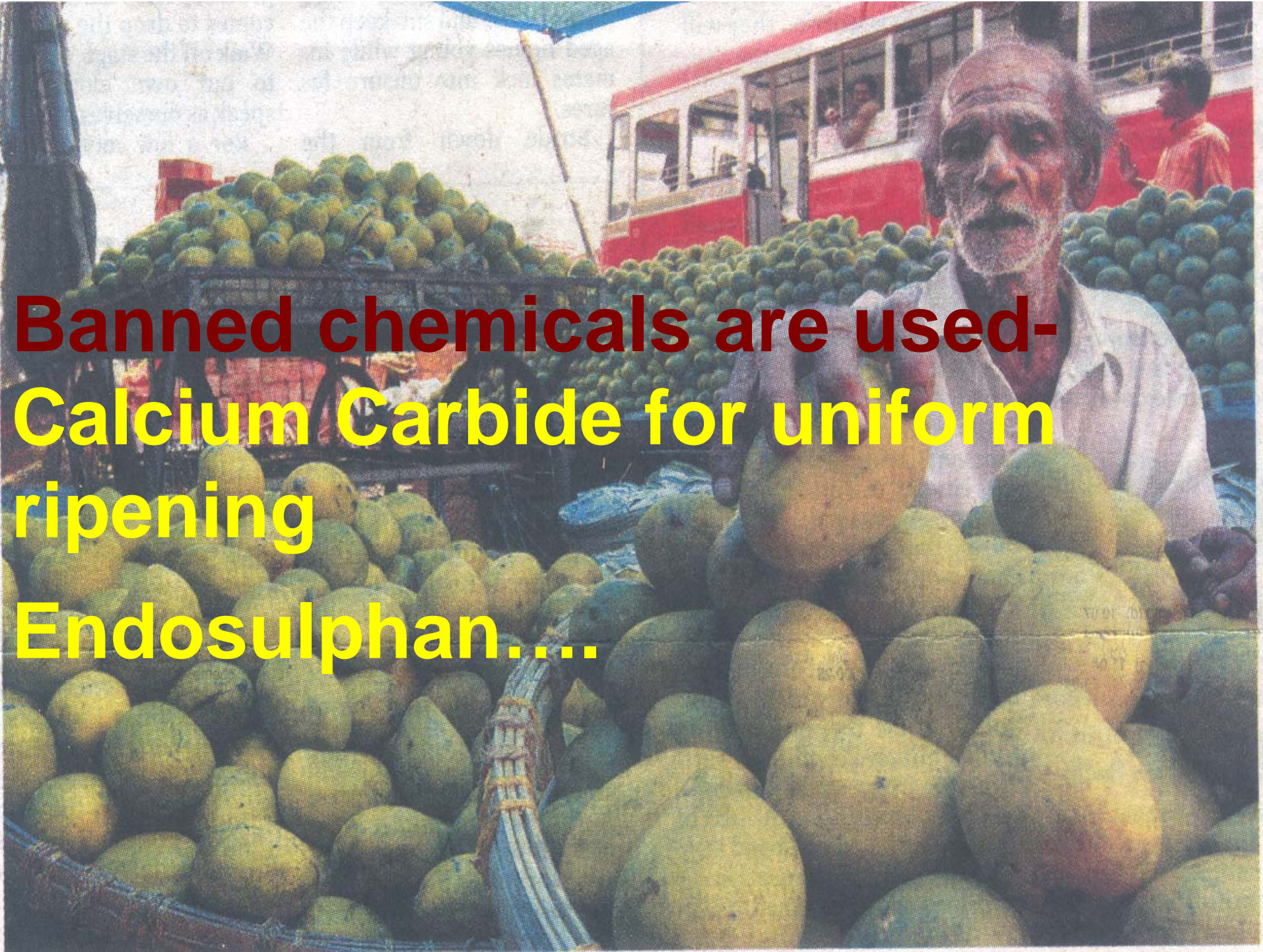
yield risk perceptions...very high

why take risk?

Preventive than Curative..

Most toxic pesticides are preferred

Colour	Category	Frequency (%)
Green	Slightly toxicity	5
Blue	Moderately toxic	25
Yellow	Highly toxic	48
Red	Extremely toxic	22



Banned chemicals are used-
Calcium Carbide for uniform
ripening
Endosulphan....

Use of pesticides banned for use in Fruits and Vegetables (monocrotophos)-



Methoxy Ethyl Mercury Chloride-
prescribed for *restricted use* (!!...)
only





waiting
Period....

Why should
we wait??

Not for banana??? Why?

No mechanism to ensure crop specific use

Restricted use ??? What`s it?

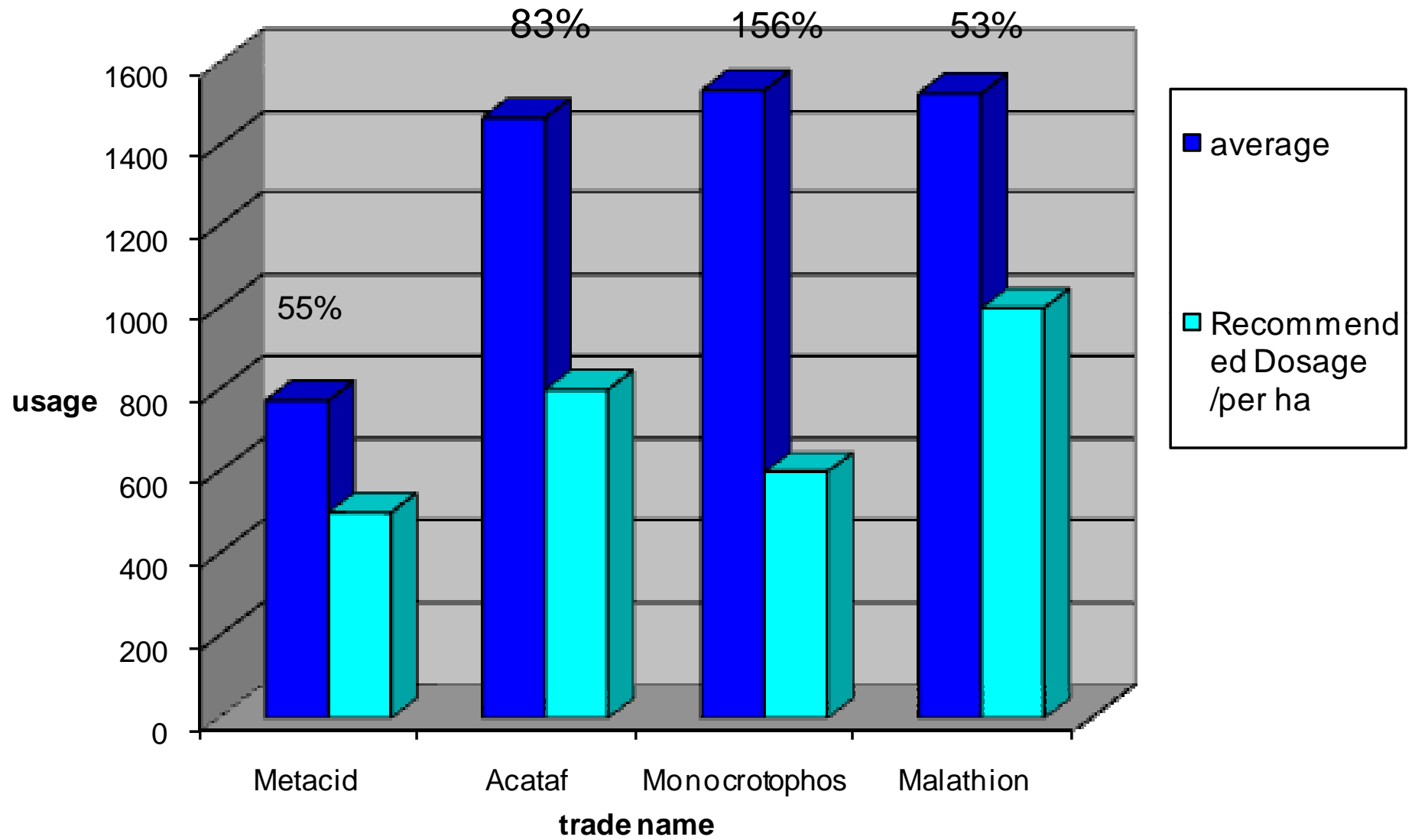
No arrangements to ensure restricted use..

No problem there...why here?

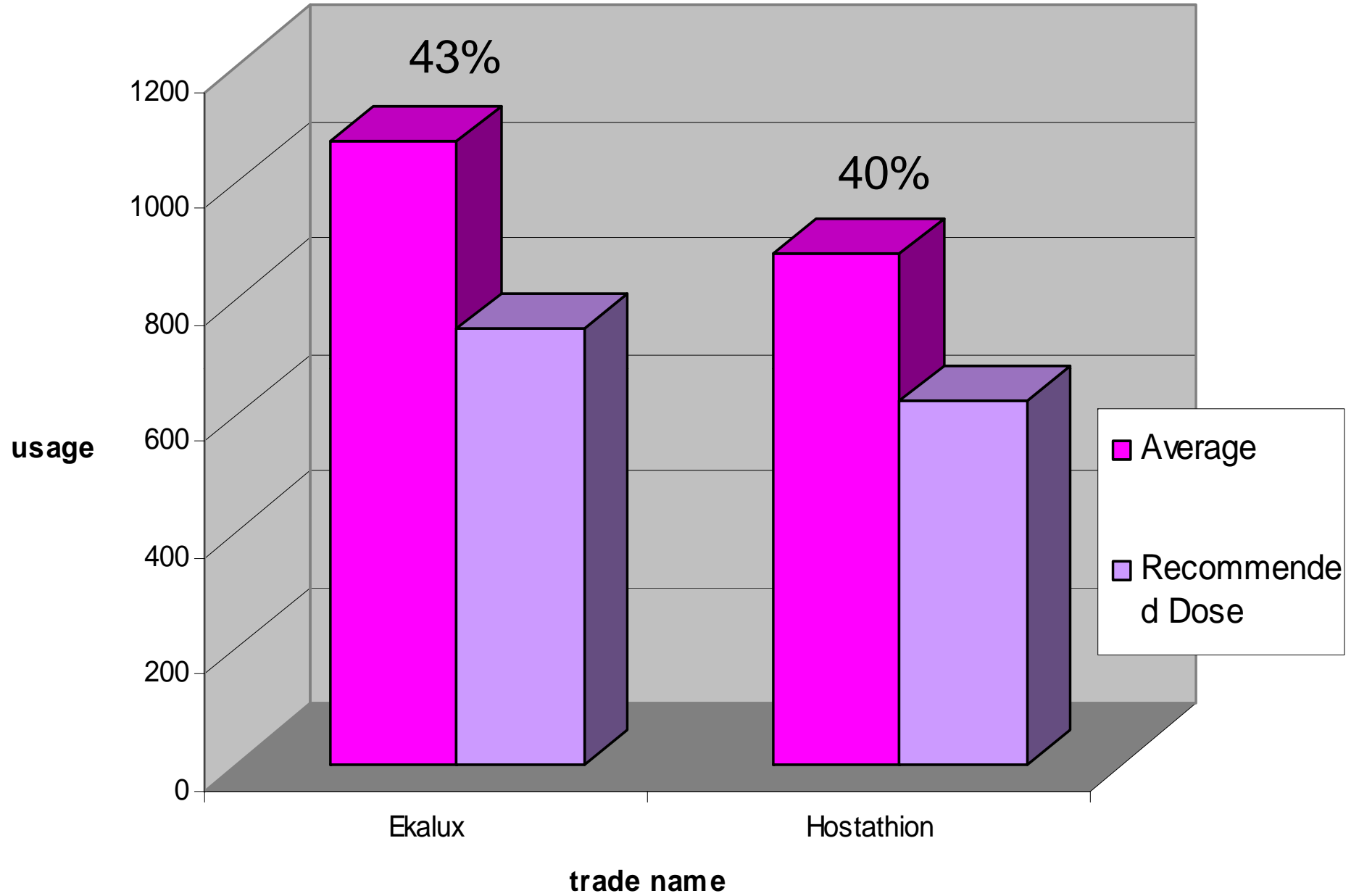
No checks for cross boarder transfers.....

Application Practices

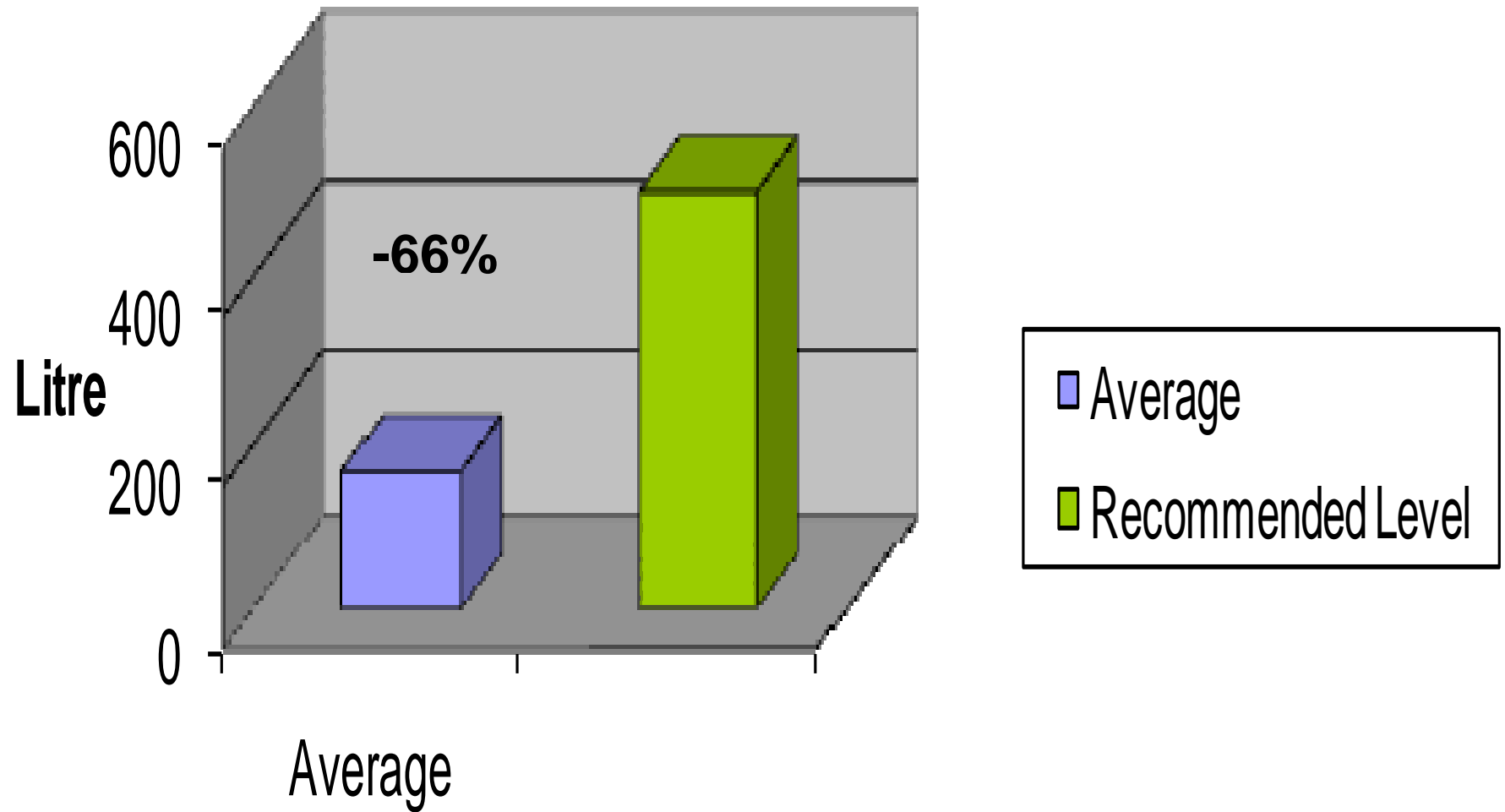
More than recommended dose



pesticide Use



Water-oh it is much less than recommendation



Indiscriminate /unscientific use

Chemical / Dosage / Time

Method / Spurious

...../Mixtures of chemicals.



No suggested
gadgets/precautions



Careless disposal



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Punishment for noncompliance- against whom?

Farm owners?

Farm workers?

Agri. Officers?

Traders?

Agent of consultation on the use chemical pesticides

Agent	Paddy	Banana
	No of respondents	No of respondents
Own decision	5(12.5)	6(15)
Friends	7(17.5)	4(10)
Dealer	19(47.5)	18(45)
Agricultural Officials	9(22.5)	12(30)
Total	40 (100)	40(100)

Wrongly Targeted Trainings...to be focused on farm workers/sales person

*12	Are you aware of pesticide toxicity	49	51
13	Are you able to understand the level of toxicity, reading the sign on the label	0.6	99.4
14	Have you attended any trainings / workshops / discussions on pesticide use and care	1.41	98.59

From beginning to end

Decision making on pesticide use...

Choice of the chemical

Agent of consultation

Concentration of the chemical

Mixing practices

Spurious chemicals/mixtures

Spray practices.....

Some corrections...



Technological Efforts-research focus

Realistic estimates of risk/chances of pest attack

Alternate methods

Bioagents (weed control)

traditional wisdom

Infrastructure

Monitoring Mechanism in pesticide retailing

public sector presence

Licensing system to be changed

Demand pull-

*Testing facility(cheap,quick,easy) for
pesticide residue in agri. products*

Education programme

- **farmer education** through targeted trainings
- **to dealers** and farm workers
- **Consumer awareness**

Awareness regarding the legal status of the chemicals- Information to be displayed on board in front of the sale points, farmer's clubs and Agricultural Offices. The punishment for violation may also be publicized

Training support to Farm Workers and Sales persons.

Welfare Programme

registry of trained applicators at Panchayat level.

They may be provided with protective gadgets at subsidized rates-

WORKER WELFARE PROGRAMMES

Regular pest monitoring

Waste Management

The disposal pattern of used containers may be scientifically managed. The producers may be directed to collect the empty containers back

Better Management

*At panchayat Level.-
environment management*

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