

# **Toxic Industrial Colorants found in Imported Foods**

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Robert Sheridan

**New York State  
Department of  
Agriculture & Markets  
Food Laboratory**



# Dye types:

## 1. Acid dyes

Food Dyes (subset of acid dyes)

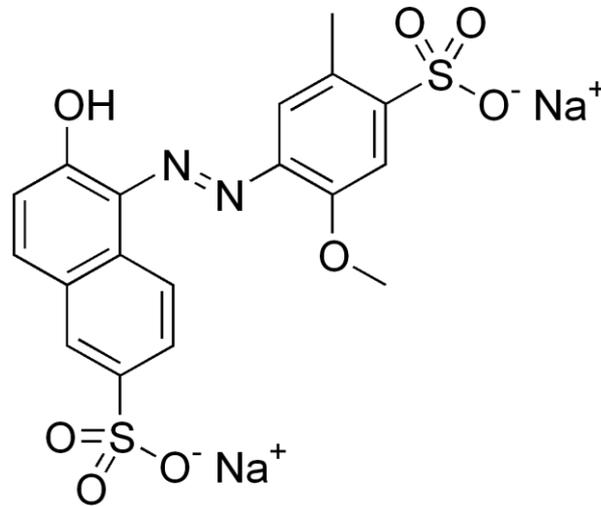
## 2. Basic Dyes

## 3. Reactive Dyes

## 4. Solvent Dyes

## 5. Fluorescent Brightener Dyes

etc.



**Allura Red AC**  
**(FD&C Red 40)**



## Color Additives Approved for Use in Human Food

### Subpart A: Color additives subject to batch certification

#### FD&C Designation

- FD&C Red 40
- FD&C Red 3
- FD&C Yellow 5
- FD&C Yellow 6
- FD&C Blue 1
- FD&C Blue 2
- FD&C Green 3
- Citrus Red 2

#### Common Name

Allura Red AC  
Erythrosine  
Tartrazine  
Sunset Yellow FCF  
Brilliant Blue FCF  
Indigo Carmine  
Fast Green FCF  
Solvent Red 80 (E121)



**FD&C YELLOW NO. 5**  
TARTRAZINE  
CI 19140 E 102



**FD&C RED NO. 40**  
ALLURA RED AC  
CI 16035 E 129



**FD&C RED NO. 3**  
ERYTHROSINE  
CI 45430 E 127



**FD&C BLUE NO. 2**  
INDIGO CARMINE  
CI 73015 E 132



**FD&C YELLOW NO. 6**  
SUNSET YELLOW FCF  
CI 15985 E 110



**FD&C BLUE NO. 1**  
BRILLIANT BLUE FCF  
CI 42090 E 133



**FD&C GREEN NO. 3**  
FAST GREEN FCF  
CI 42053 E 143



**FD&C CITRUS RED NO. 2**  
SOLVENT RED 80  
CI 12156

# FDA certification

- All dyes used in food must be batch certified

Specifications:

Purity

Subsidiary colors

Heavy metals (Lead, Arsenic, etc.)

- Once a batch is approved it is given the FD&C designation.

## § 74.340 FD&C Red No. 40.

(a) *Identity.* (1) The color additive FD&C Red No. 40 is principally the disodium salt of 6-hydroxy-5-[(2-methoxy-5-methyl-4-sulfophenyl)azo]-2-naphthalenesulfonic acid.

(2) Color additive mixtures for food use (including dietary supplements) made with FD&C Red No. 40 may contain only those diluents that are suitable and that are listed in part 73 of this chapter as safe for use in color additive mixtures for coloring foods.

(3) The listing of this color additive includes lakes prepared as described in § 82.51 of this chapter, except that the color additive used is FD&C Red No. 40 and the resultant lakes meet the specification and labeling requirements prescribed by § 82.51 of this chapter.

(b) *Specifications.* FD&C Red No. 40 shall conform to the following specifications and shall be free from impurities other than those named to the extent that such other impurities may be avoided by good manufacturing practice:

Sum of volatile matter (at 135 °C.) and chlorides and sulfates (calculated as sodium salts), not more than 14.0 percent.

**Water-insoluble matter, not more than 0.2 percent.**

Higher sulfonated subsidiary colors (as sodium salts), **not more than 1.0 percent.**

Lower sulfonated subsidiary colors (as sodium salts), **not more than 1.0 percent.**

Disodium salt of 6-hydroxy-5-[(2-methoxy-5-methyl-4-sulfophenyl) azo] -8-(2-methoxy-5-methyl-4-sulfophenoxy)-2-naphthalenesulfonic acid, not more than 1.0 percent.

Sodium salt of 6-hydroxy-2-naphthalenesulfonic acid (Schaeffer's salt), not more than 0.3 percent.

4-Amino-5-methoxy- *o*-toluenesulfonic acid, not more than 0.2 percent.

Disodium salt of 6,6'-oxybis (2-naphthalene-sulfonic acid), not more than 1.0 percent.

**Lead (as Pb), not more than 10 parts per million.**

**Arsenic (as As), not more than 3 parts per million.**

**Total color, not less than 85.0 percent.**

(c) *Uses and restrictions.* FD&C Red No. 40 may be safely used for coloring foods (including dietary supplements) generally in amounts consistent with good manufacturing practice except that it may not be used to color foods for which standards of identity have been promulgated under section 401 of the act unless added color is authorized by such standards.

(d) *Labeling.* The label of the color additive and any lakes or mixtures prepared therefrom intended solely or in part for coloring purposes shall conform to the requirements of § 70.25 of this chapter.

(e) *Certification.* All batches of FD&C Red No. 40 and lakes thereof shall be certified in accordance with regulations in part 80 of this chapter.



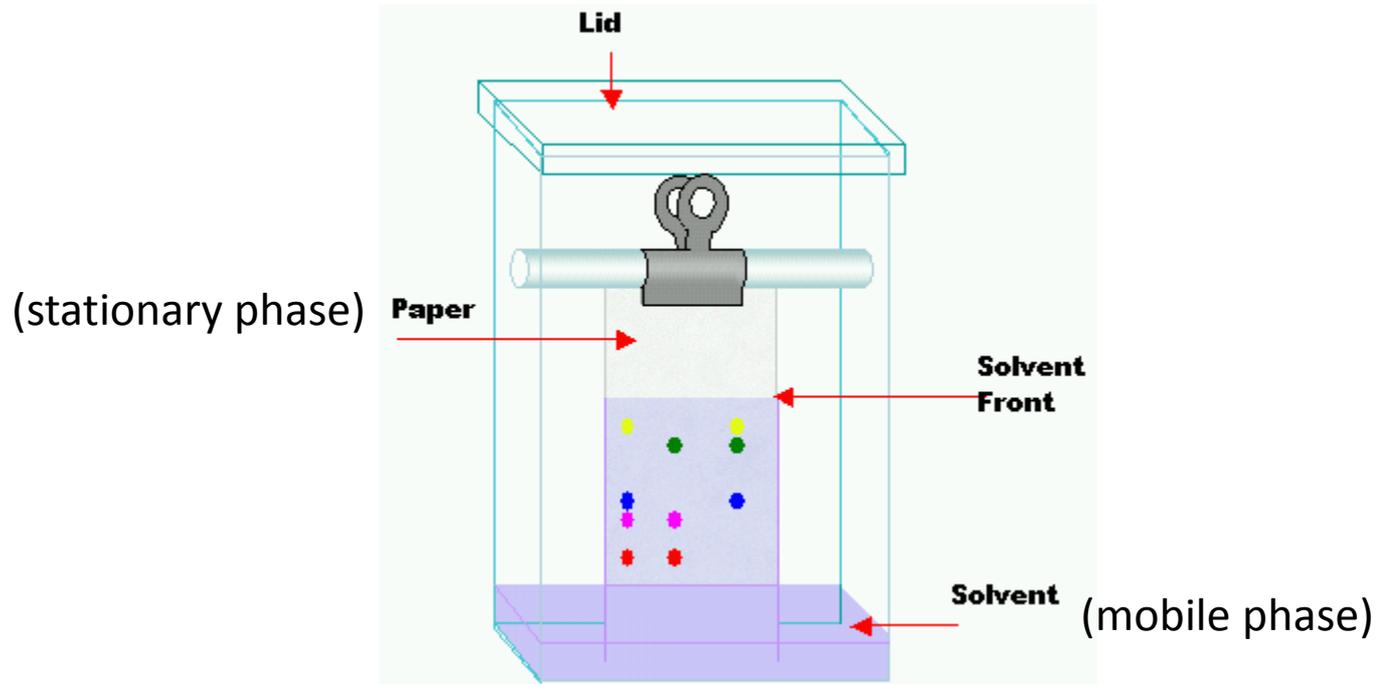
## Report on the Certification of Color Additives: 4th Quarter, Fiscal Year 2011, July 1 to September 30

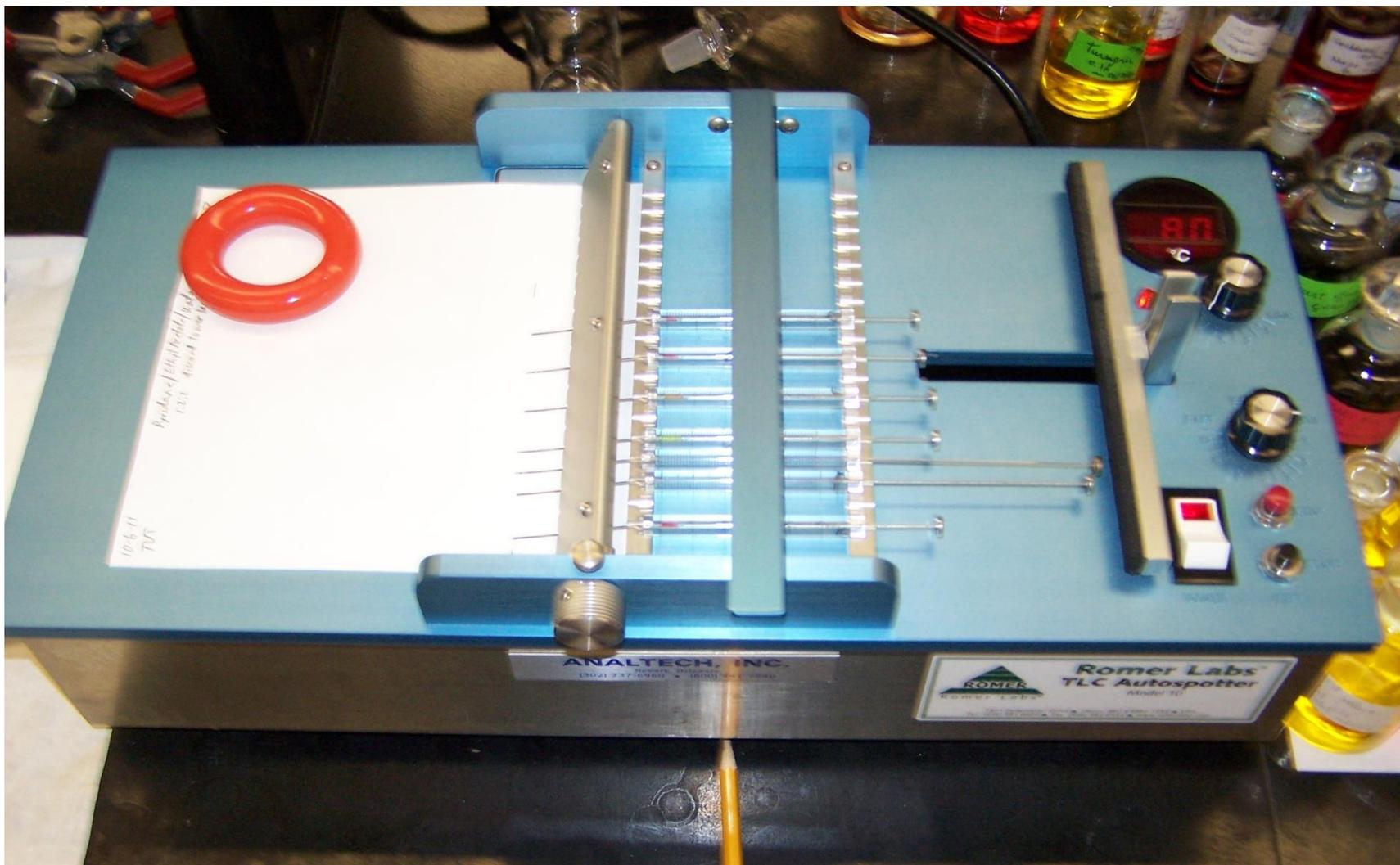
	4th Quarter July 1 to September 30	Recapitulation October 1 to September 30
FD&C - STRAIGHTS	Pounds	Pounds
FD&C BLUE No. 1	240,650.91	706,996.84
FD&C BLUE No. 2	141,154.49	556,642.78
FD&C GREEN No. 3	1,410.20	16,746.47
FD&C RED No. 3	55,702.72	219,560.24
FD&C RED No. 40	1,369,108.52	5,487,226.47
FD&C YELLOW No. 5	938,041.19	4,221,745.30
FD&C YELLOW No. 6	902,718.30	3,862,134.56
CITRUS RED No. 2	0.00	2,733.70
<b>TOTAL</b>	<b>3,648,786.33</b>	<b>15,073,786.36</b>

**How do we  
determine what dye  
is in a food product?**

# Paper Chromatography Method

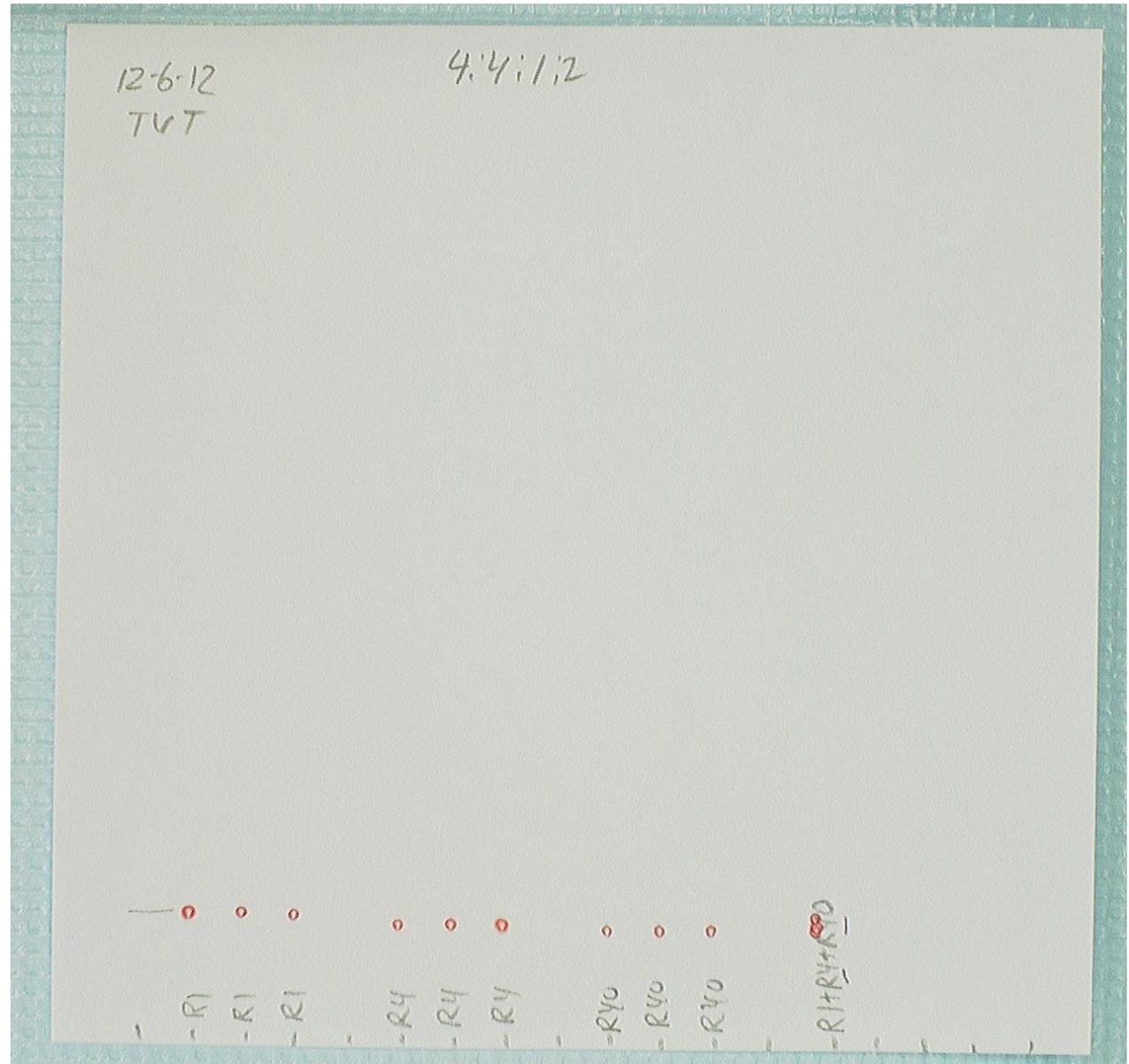
In paper chromatography substances are distributed between a stationary phase and a mobile phase. The stationary phase is a piece of chromatography paper. The mobile phase is a solvent mixture that travels up the stationary phase, carrying the samples with it. Components of the sample will separate readily according to how strongly they absorb on the stationary phase versus how readily they dissolve in the mobile phase.



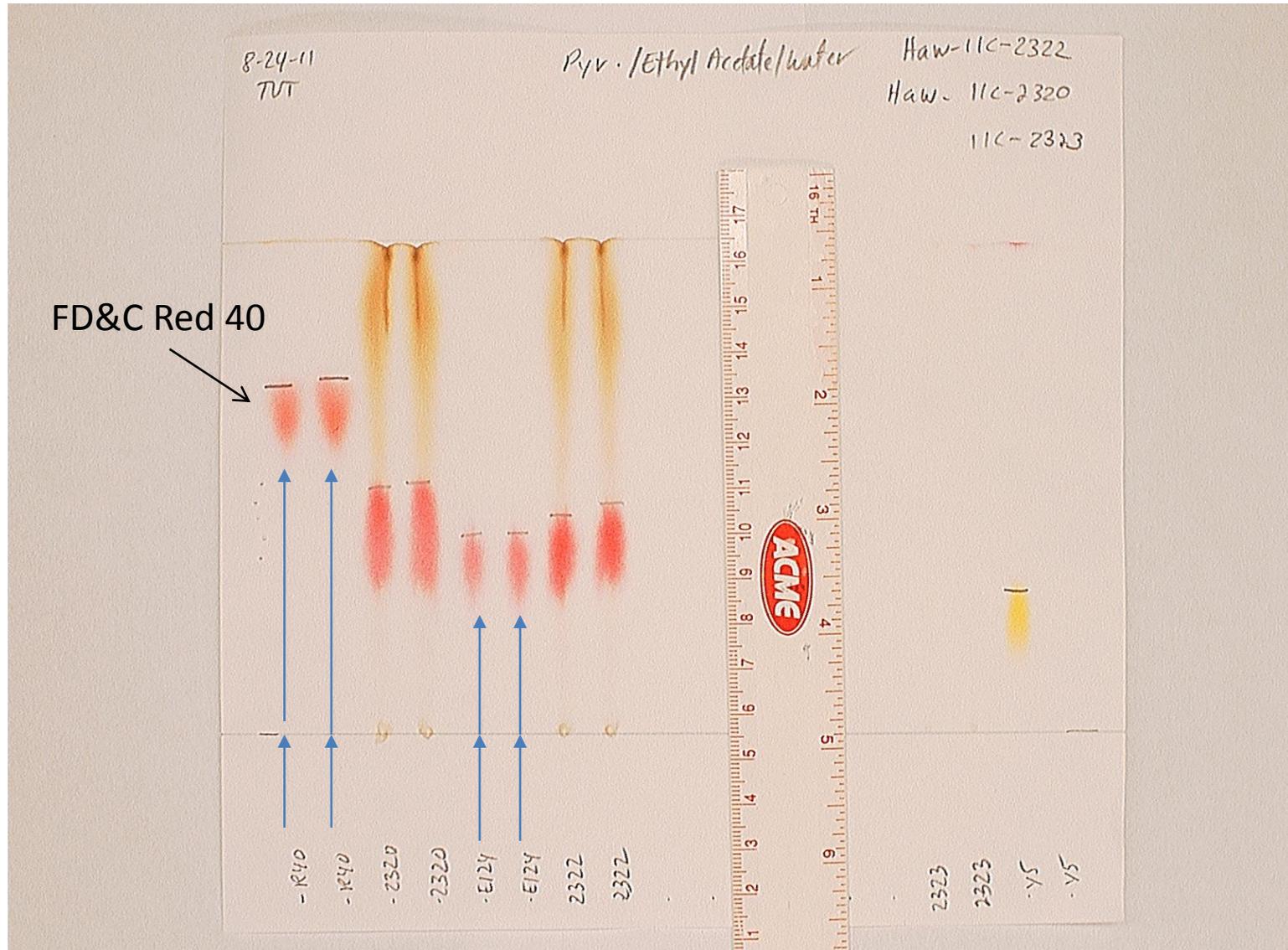


**Chromatography  
paper with  
samples or  
standards  
spotted on  
bottom.**

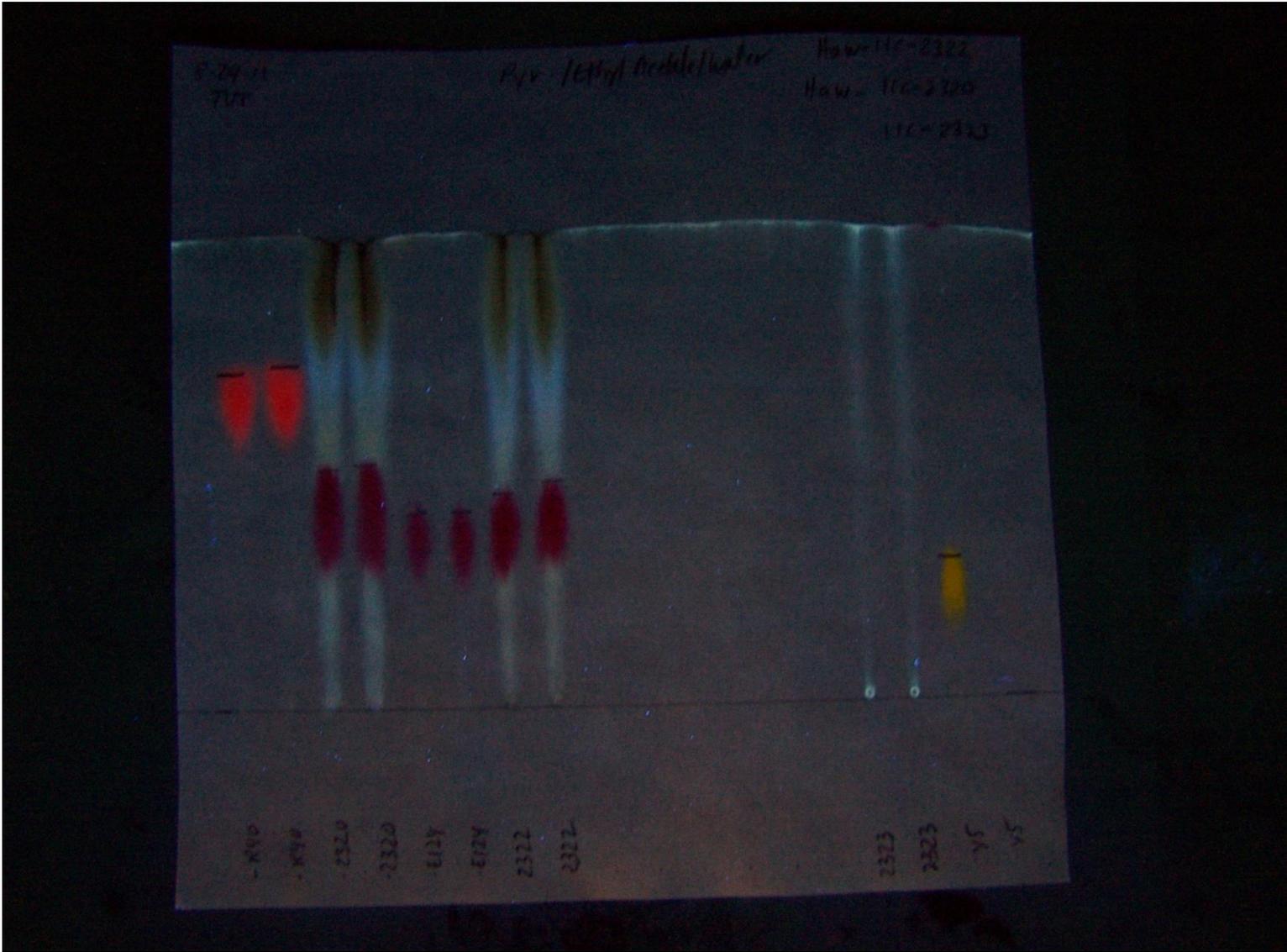
**Paper  
chromatography  
is a  
non-targeted  
method**



# Chromatogram viewed under white light:

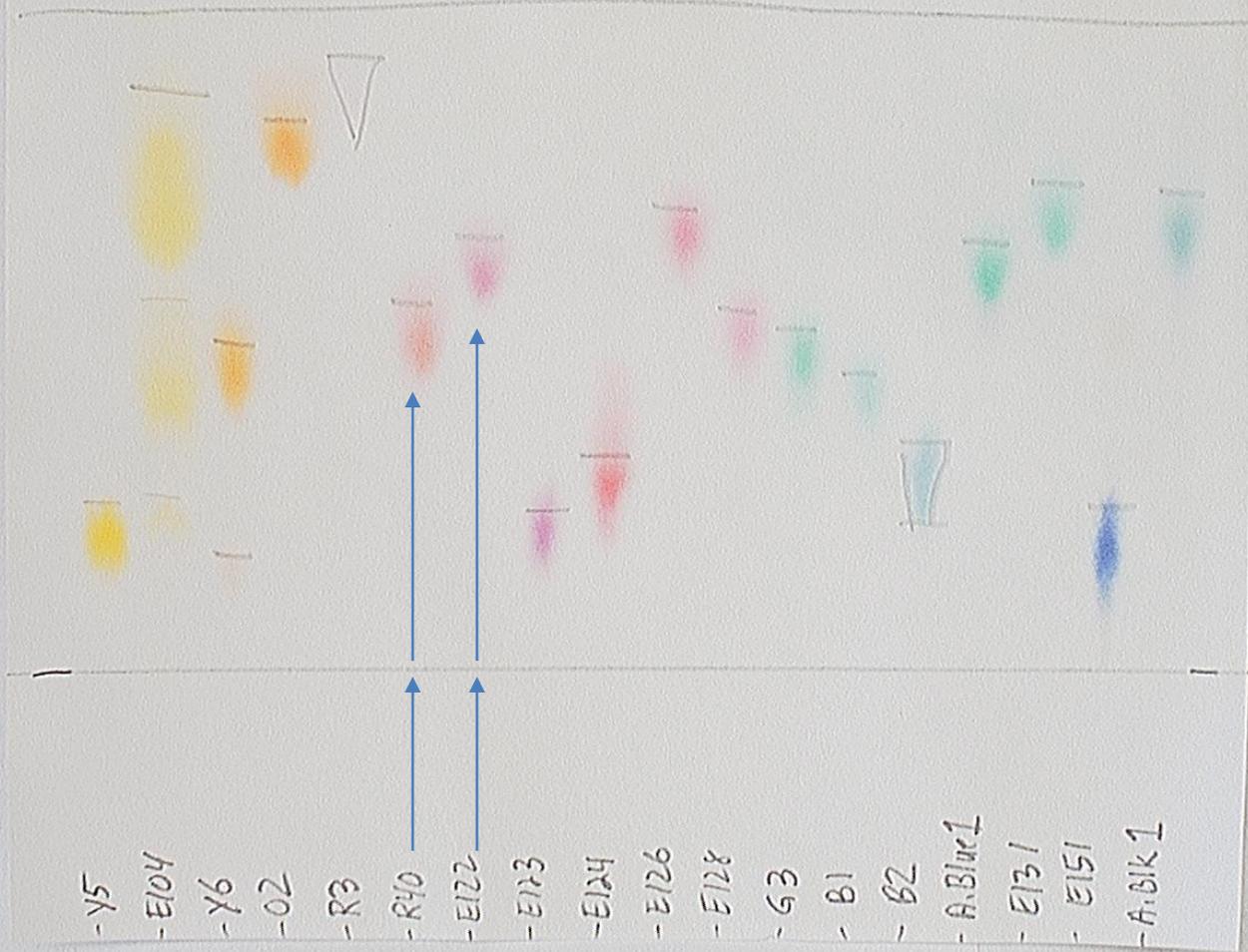


# Chromatogram viewed under UV light:



10-26-12  
TVT

Pyridene: Ethyl acetate: water  
1:2:2  
(discard lower layer)

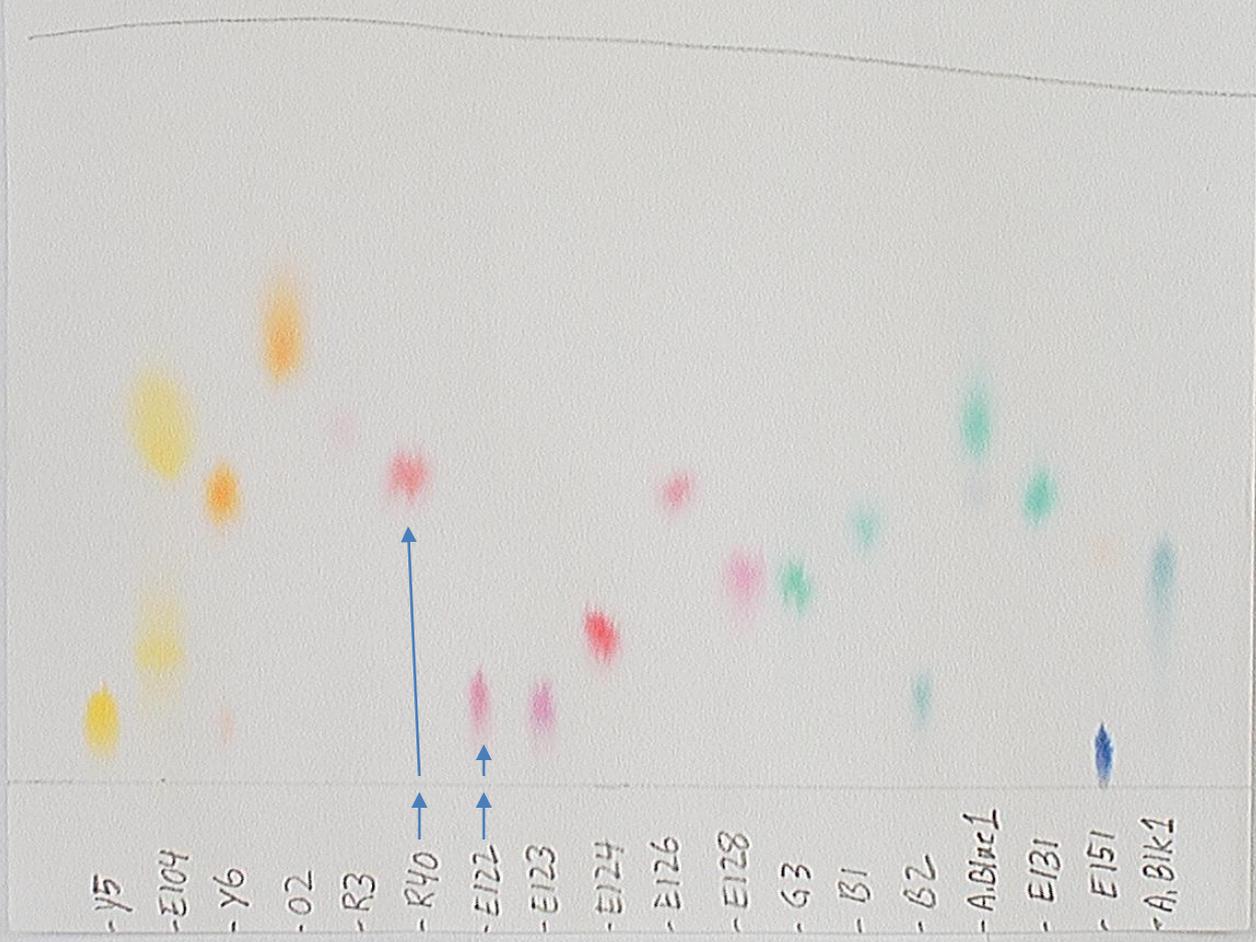


10-26-12  
TVT

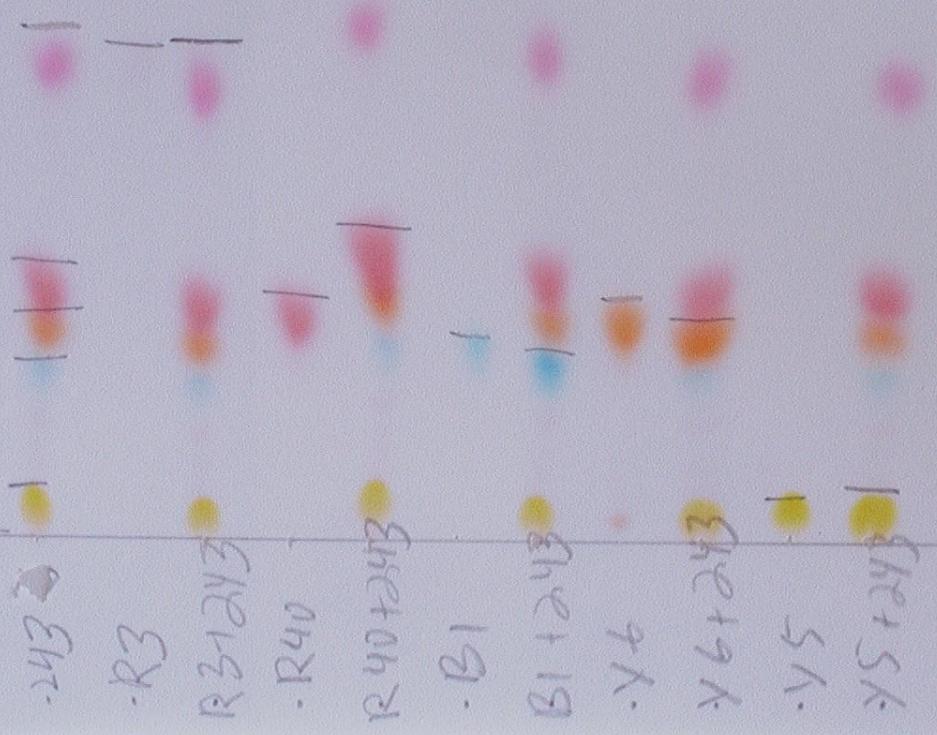
4:4:1:2

Standards

Isoamyl alcohol: ethanol: ammonia: water



5 + 3 + 1 + 1  
1-Butanol + MEK + water + ammonia



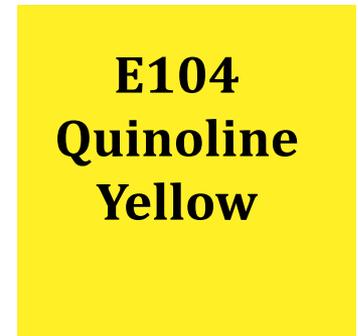
**Which unallowed  
food dyes and acid dyes  
have we found  
in imported foods?**



Allowed in Canada

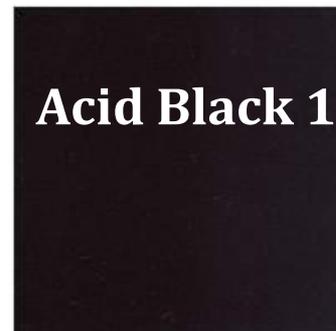


**E125**  
delisted FD&C Red 4



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These acid dyes are not allowed in Food in any Country.



**Candy coated seeds.**

**Origin: Pakistan**

**NO DYES FOUND**

**?**



Thursday May 31, 2007

## Banned 50 years ago, Rhodamine B still used in foodstuff



Colour of danger: Idris and CAP treasurer Ooi Kim Aun showing some food and household items that get their pinkish colour from Rhodamine B.

PENANG: Food operators are still using a **cancer-causing dye** in the preparation of *belacan* (shrimp paste) and several popular Chinese buns and *kuih*, according to the Consumers Association of Penang (CAP).

The dye was banned more than 50 years ago but food operators are still using it due to lax enforcement, said its president S. M. Mohd Idris.

He said a recent test by CAP found that samples of the food items contained **Rhodamine B** – a pink-coloured dye banned under the Food Regulation 1985 and Food and Drug Ordinance of 1952

# Bali Daily

## Food safety: Ramadhan desserts contain textile dye

by [Luh De Suriyani](#) on 2012-07-24



**Test tube:** An official with the government's foods and drugs watchdog tests samples of food collected from street vendors.

"The team found **Rhodamine B, a pink dye banned internationally 50 years ago**, in pearl cassava, kolak and other colorful snacks," she said.

It took only five minutes to detect hazardous materials in any sample food, she added.

The dye is commonly used in the textile and plastic industries to give containers and cloth a bright pinkish hue. It is also used to dye feather dusters.

Officials at the Bali chapter of the National Drug and Food Monitoring Agency (BPOM) have found foods containing a cancer-causing dye, **Rhodamine B**, during a series of random tests in several places in Denpasar on Monday afternoon.

The officials conducted sample tests on various desserts, like kolak, a sweet dessert made of palm sugar and coconut milk added to banana, cassava, sweet potatoes, pumpkin or jackfruit.

During the Ramadhan fasting month, which started last Saturday, many people, including students, sell a large variety of sweet dishes along the city's main streets, in traditional markets and Muslim enclaves for Muslims to break their fast.

Thursday ,Mar 04,2010, Posted at: 12:47(GMT+7)

**Public concerns about food safety in HCMC have returned following the discovery that additives used for cooking curry and stewed beef dishes were contaminated with industrial dye Rhodamine B.**

Ho Chi Minh City Department of Health inspectors announced four food manufacturers had breached food safety regulations for selling products containing cancer-causing chemical **Rhodamine B**, used as a dye and as a dye laser gain medium. The workshops include Kim Nga and Kim Thanh companies. Huynh Le Thai Hoa, head of Food Safety and Hygiene Bureau spoke with SGGP saying that many bogus additive manufactures distribute their products markets themselves without official permission.

Flavoring with unclear origin was being sold openly at local markets without control. At Kim Bien wholesale market in HCM City, a Sai Gon Giai Phong reporter impersonating a sidewalk eatery vendor was guided to gate No. 5 where many stores were selling food flavorings.



Rampant contaminated spices sold in markets , especially in wholesale markets Kim Bien and Binh Tay (Photo: SGGP)

A saleswoman at a store C.P introduced different kinds of flavorings including coffee, butter, cocoa, milk, chicken, onion, beef and fruit flavors, which were sold in big plastic cans and small jars, saying to use only a spoonful to achieve the desired taste. She showed a plastic 250 ml can, which had a label identifying that it was made in Singapore but showed no brand name, expiration date or name of importer.

In front of the store C.P, a man was manually filling small bags from a large plastic sack. He said it was a pigment for furniture polish that was also used to add to rice vermicelli and sour crab soup as it was three times cheaper than the legal food color.

Meanwhile, shops in Binh Tay market in district 6 greeted customers to buy food flavorings and spices. Shop 181 C.T. introduced several flavorings including one from Kim Nga workshop to cook soup. The powder, which smelled mouldy, was labeled with contents of star anise, false cardamom, cinnamon bark, coriander seeds, whole cloves, dried tangerine peel and fennel seeds.

Health officials said the Food Safety and Hygiene Bureau would trace manufacturers of unregulated food additives, to dish out harsh punishments and confiscate offending products.

Thiruvananthapuram, August 27, 2012

## Is it cloth to apply textile dye? bitter cotton candy

It is probably the only treat which has just one ingredient: sugar.

The soft, billowy pink puff of cloud explodes in your mouth, leaving just a sweet, sticky smack on the tongue... Is there a soul alive who can resist the pink cotton candy? It is pure happiness rolled on to a stick, no better way to put it.

A staple at fairgrounds, festivals and on the beach, cotton candy has to be one of those irresistible treats that makes you want to steal or beg a bite from your child's candy unabashedly.

Almost all adults will have childhood memories about stuffing themselves with cotton candy at fairgrounds, which is why one feels so indignant when faced with the news that prohibited chemicals — a textile dye, no less — is used these days to colour your favourite treat of pink.

But food safety has never been a public concern as it is now. It is with dismay that many read that an analysis of cotton candy samples collected from the Shanghumughom beach has revealed the presence of the chemical **Rhodamine B**, which can be potentially harmful to health because it has no role as a food colour at all.



**Rhodamine B is a textile dye**, which is heat stable. The colour does not fade when heated, probably the reason why it is being used to colour cotton candy.

Ardent dieters will tell you that cotton candy is just pure sugar and that it is better to avoid piling on all those empty calories — a single standard-size serving of cotton candy can be no less than 100 calories — but then, calories is the last thing on your mind when you see those pink fluffy clouds.

Cotton candy, or candyfloss, is just spun sugar with a bit of colour. It is an art by itself, the way heated sugar strands just pop up on the inside of the cotton candy machine, which is rolled so artfully by the vendor on to a stick or stuffed into a polythene bag.

One can console oneself that cotton candy is an occasional treat and probably very little amounts of the chemical might be ingested by one. But a safer bet might be to settle for the colourless clouds of sugar.



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## Import Alert 45-02



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**(Note: This import alert represents the Agency's current guidance to FDA field personnel regarding the manufacturer(s) and/or products(s) at issue. It does not create or confer any rights for or on any person, and does not operate to bind FDA or the public).**

### Import Alert # 45-02

**Published Date:** 11/19/2012

**Type:** DWPE

#### Import Alert Name:

"Detention Without Physical Examination and Guidance of Foods Containing Illegal and/or Undeclared Colors."

#### Reason for Alert:

This revision to Import Alert #45-02 incorporates import alerts previously issued for illegal or undeclared food color additives.

There continues to be a large number of detentions for illegal and undeclared food color additives. In FY-93, there were more than 450 detentions of products for illegal or undeclared color additives, from approximately 35 countries.

#### Guidance:

\* The attachment for this alert identifies manufacturers and products, by country, subject to detention without physical examination under this Import Alert, and the undeclared or illegal colors found in such products.

The Green List identifies manufacturers and products, by country, exempted from detention without physical examination of products.

Districts may detain without physical examination all products that appear on the attachment for this alert. If the product is shown as containing an illegal color, detain the product with charge (1). If the product is shown as containing an undeclared color additive, detain the product with charge (2).

When districts encounter violative shipments of products for illegal and/or undeclared color, recommendation for detention without physical examination and accompanying information, including laboratory worksheets, should be forwarded to DIOP, HFC-170. DIOP, in turn, will coordinate with CFSAN.

\* Products which list a non-permitted color on the label may be detained without physical examination. Recommendations for detention without physical examination should be forwarded to DIOP, HFC-170, along with the label and invoice. Refer to IOM Appendix A for the Color Additive

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Notes:3/13/00; unidentified synthetic yellow and blue colors

Problems: 19140-FD&C YELLOW #5 (TARTRAZINE);

**Vina Hung**

**177/46 Luy Ban Bich , 177/46 Luy Ban Bich , Ho Chi Minh, VN-65 VIETNAM**

**Date Published : 09/18/2009**

24 T -- 20 Mustard Greens (Leaf & Stem Vegetable)

Date Published: 09/18/2009

Desc:instant sweet and sour mustard

Notes:6/28/05

Problems: 19140-FD&C YELLOW #5 (TARTRAZINE);

27 Y -- 05 Mustard, Prepared

Date Published: 09/18/2009

Problems: 19140-FD&C YELLOW #5 (TARTRAZINE);

**Vinalink**

**145-147 Nguyen Tat Thanh St. Dist.4 , Ho Chi Minh City, VIETNAM**

**Date Published : 09/18/2009**

03 M -- 99 Cookie,Biscuit,Wafer Dough, N.E.C.

Date Published: 09/18/2009

Desc:egg roll cookie

Notes:10/5/00; Rhodamine B chloride and stearate salts formerly certifiable as D&C Red No 19 and as D&C Red No 37, respectively. The methodology use does not distinguish these and other forms of Rhodamine B

Problems: 19140-FD&C YELLOW #5 (TARTRAZINE); 45170-RHODAMINE B STEARATE (FORMER D&C RED #37); 45170-D&C RED #19 (RHODAMINE B);

33 L -- 12 Mixed/Assorted Soft Candy without Nuts, Fruit or Chocolate)

Date Published: 09/18/2009

Desc:Sweet Gracilaria

Notes:3/23/00

Problems: 19140-FD&C YELLOW #5 (TARTRAZINE);

**Vissan Instant Noodle Joint Stock**

**420 No. Trang Long Streetbinh Thanh , Ho Chi Minh City, VIETNAM**

**Date Published : 09/18/2009**

04 C -- 07 Noodles, Instant

Date Published: 09/18/2009

Desc:Vissan Brand Instant Noodles - various flavors

Notes:3/19/02

Problems: 19140-FD&C YELLOW #5 (TARTRAZINE);

**Vo Thi Truong**

**21 Le Quang Dinh , Hochiminh City, VIETNAM**

**Date Published : 01/18/2011**

33 J -- 99 Soft Candy with Fruit, N.E.C. (without Chocolate)

Date Published: 01/18/2011

Desc:Lemon Candy/ Mut Chanh (Brand Name; Binh Thien)

Problems: 16255-PONCEAU 4R (C.I. ACID RED 18); 16035-FD&C RED #40 (ALLURA RED AC);

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## YUGOSLAVIA

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**Swisslion Doo**

**35 Cara Dusana , Novi Sad, YUGOSLAVIA**

**Date Published : 09/18/2009**

03 M -- 09 Fruit/Fruit flavored,Cookie,Biscuit and Wafer Dough

Date Published: 09/18/2009

Desc:Kondita Biscuits Sponge Biscuit with Cherry Jelly and Chocolate

Notes:4/6/05

Problems: 16255-PONCEAU 4R (C.I. ACID RED 18);

# FDA Import Alert 45-02

Rhodamine B found in food products:

Bangladesh - 0

Brazil - 1

Canada – 2

China – 2

El Salvador – 4

Hong Kong – 2

India - 0

Mexico – 37

Nicaragua – 1

Pakistan – 3

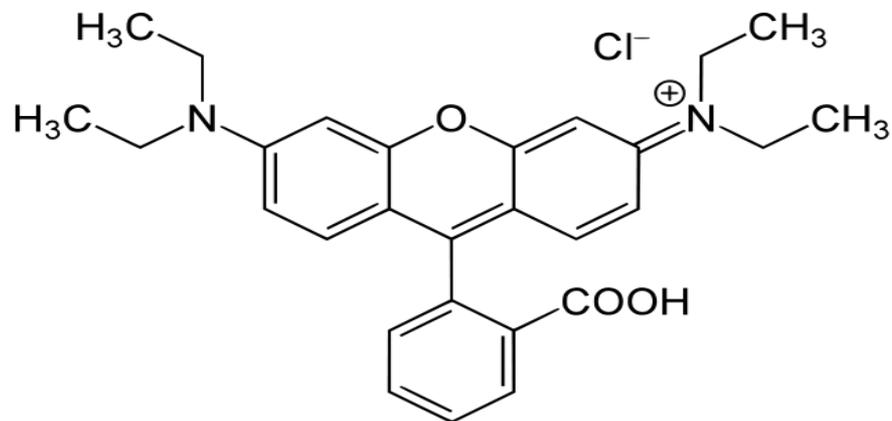
Peru – 1

Thailand – 3

Vietnam – 36

**Rhodamine B is a  
basic dye.**

**Synonyms:  
Basic Violet 10,  
Color Index 45170.**



## Determination of rhodamine B in spices by solid phase extraction-high performance liquid chromatography-tandem mass spectrometry

YIN Feng, DING Zhaowei, YANG Zhijian

State Non-Staple Food Quality Supervision and Test Center, Beijing 100070, China

Abstract

References

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**Abstract** Rhodamine B (RB), as an unlawful colour, is forbidden to add into foods by Chinese government. A solid phase extraction-high performance liquid chromatography-tandem mass spectrometry (SPE-HPLC-MS/MS) method for the determination of RB in spices has been developed. The sample was extracted by acetonitrile and then centrifugated, purified and enriched with a strong positive ion exchange SPE column (Bond Elut Plexa PCX SPE column) after adding 10 mL 1% trichloroacetic acid solution. The HPLC separation was performed on a Pursuit C18 column (100 mm×2.0 mm, 3 μm) by gradient elution with 0.1%(v/v) formic acid solution and methanol as the mobile phase. The analyte was detected by electrospray ionization in positive ion mode-MS/MS in multiple reaction monitoring (MRM) mode. The good linearity ( $R^2 > 0.99$ ) was obtained over the range of 0.6~6 μg/L. The limit of quantification (LOQ) for RB was 1.2 μg/kg. The average recoveries were ranged from 80% to 121% at the spiked levels of 1.197, 2.992 and 5.985 μg/L, and the relative standard deviations (RSDs) were not more than 15%. The conditions of mobile phase elution gradients, extraction solvents, and SPE columns were optimized. This method is highly selective and has weak matrix effect for qualitative and quantitative analyses of RB in spices.

**Key words :** [solid phase extraction \(SPE\)](#) [high performance liquid chromatography-tandem mass spectrometry \(HPLC-MS/MS\)](#) [rhodamine B](#) [spices](#)

**Received:** 2012-02-13; **Published:** 2012-07-18

### Cite this article:

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《Chinese Journal of Health Laboratory Technology》 2011-07

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# HPLC determination of Rhodamine B in foods

SUN Lei-long, YANG Zhi-hua (Jieyang Center for Disease Control and Prevention, Jieyang 522031, China)

Objective: To establish a method for the determination of Rhodamine B in food by HPLC method. Methods: Samples were extracted, purified, concentrated, and then went into the high performance liquid chromatography (HPLC), separated by C18 and detected by UV/visible (UV/VIS) detector. Results: There is a good linearity in the range of 0.1 mg/L~10 mg/L, correlation coefficient ( $r$ ) is 0.9994 or more, the method recovery is 96.1%~100.4%, relative standard deviation RSD(%) is 1.8%~3.9%. Conclusion: The method is simple, sensitive, less interference, accuracy and reliable with good selectivity and good precision.

【Key Words】 : **High performance liquid chromatography Rhodamine B Determination**

【CateGory Index】 : TS207.5

【DOI】 : CNKI:SUN:ZWJZ.0.2011-07-023



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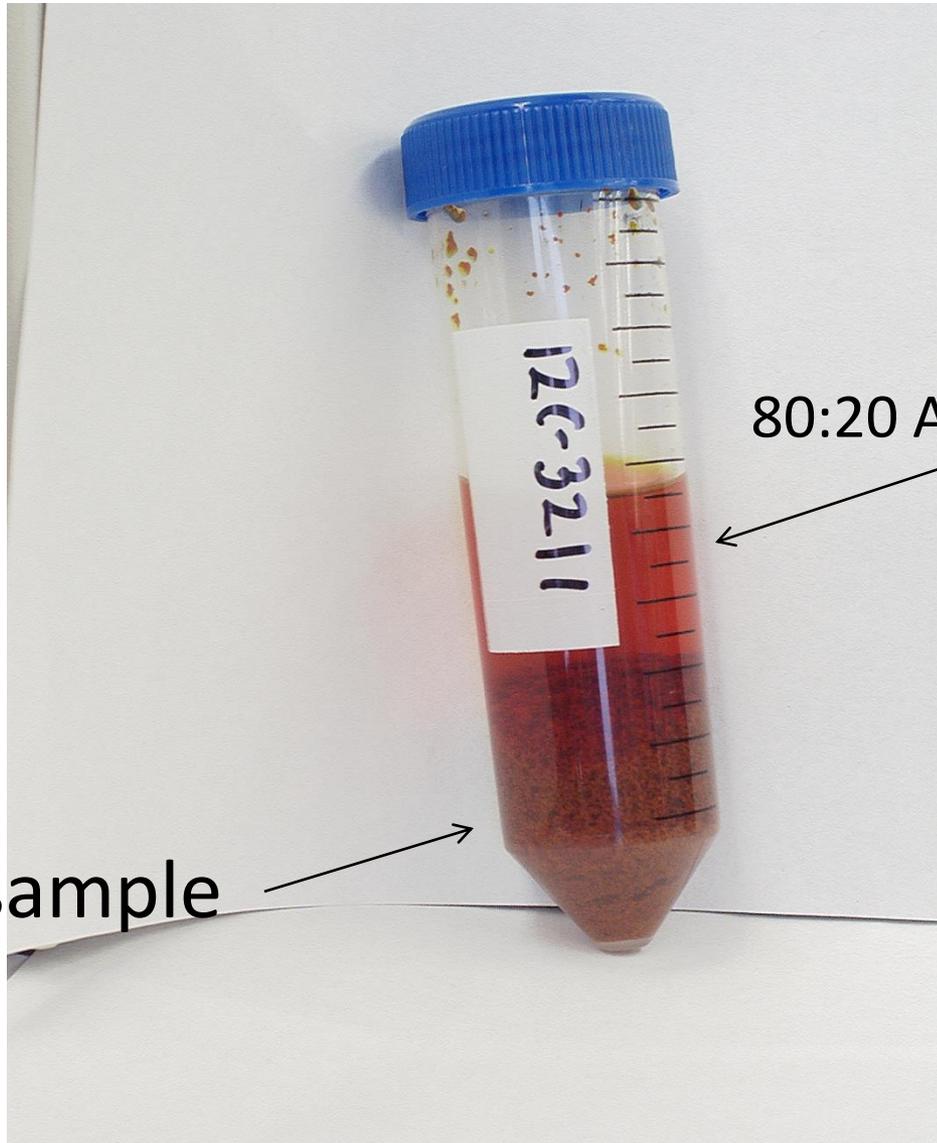
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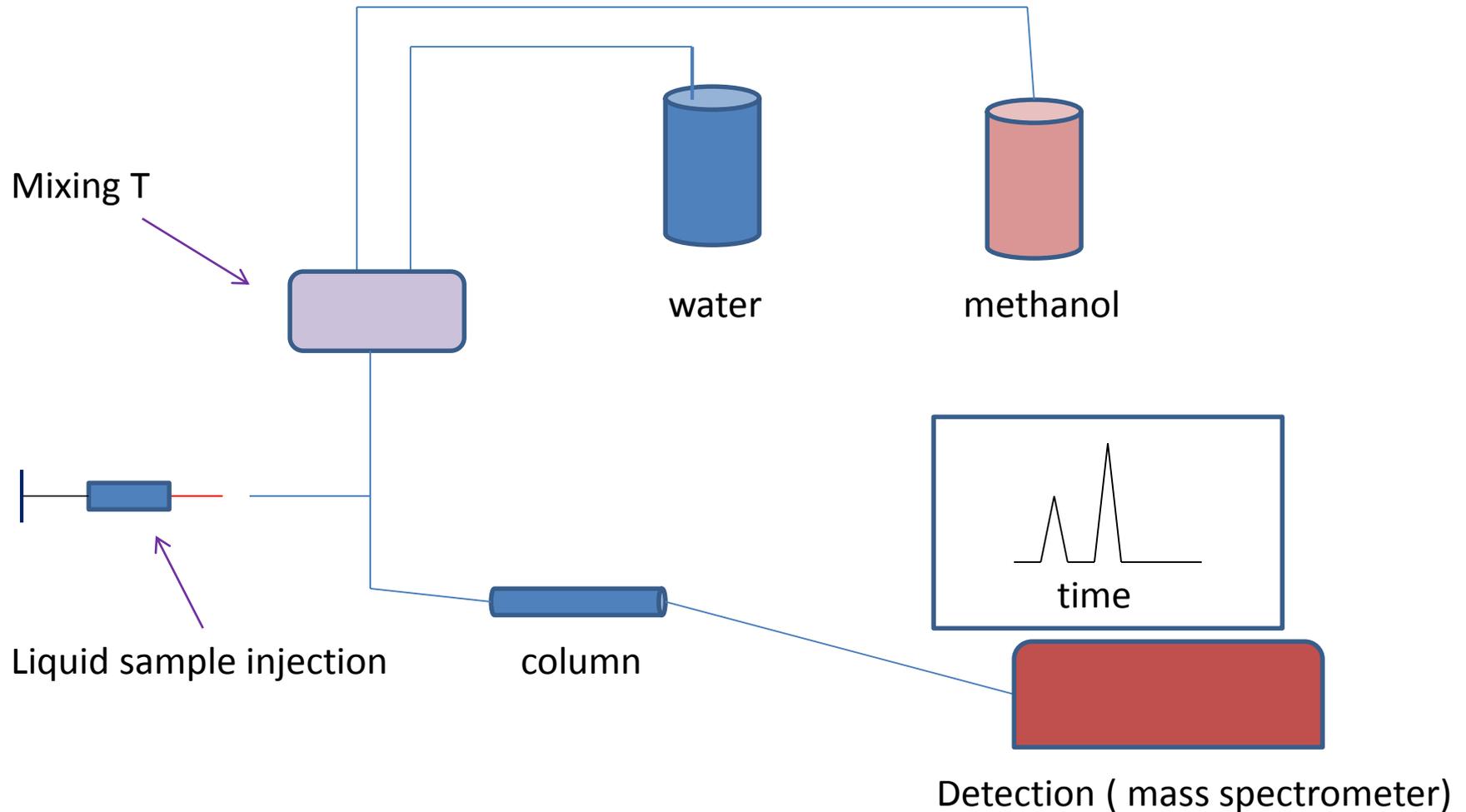
Spice sample



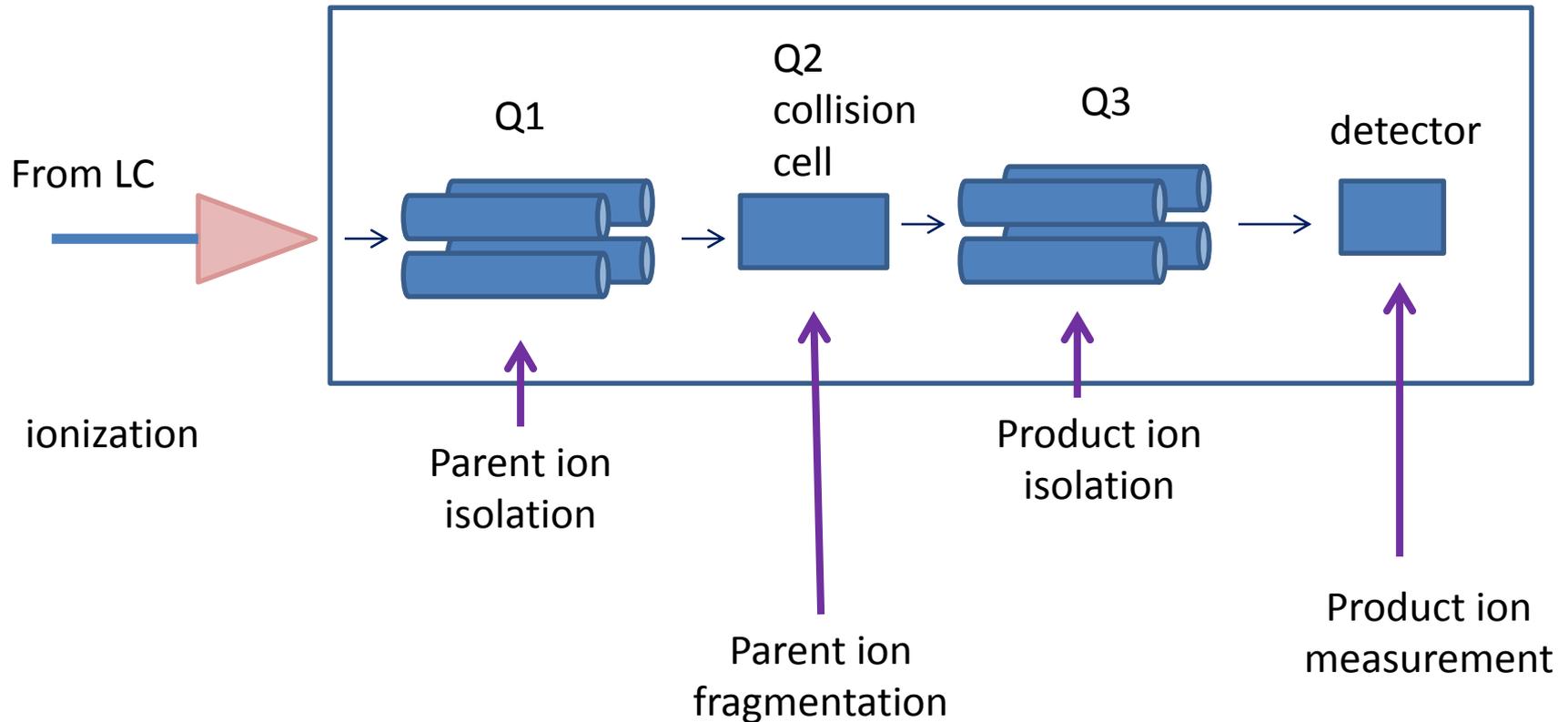
80:20 Acetonitrile : Water



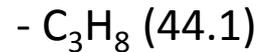
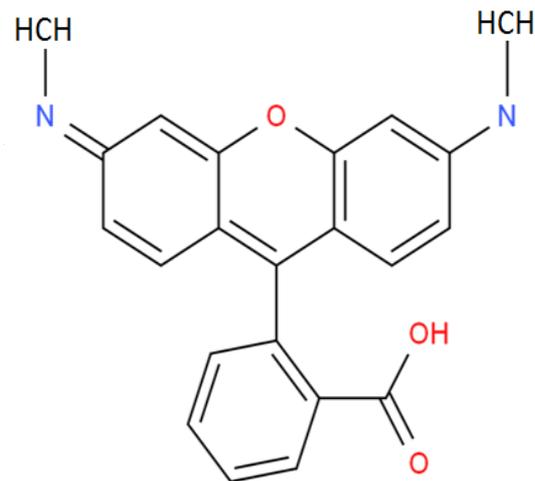
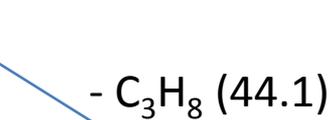
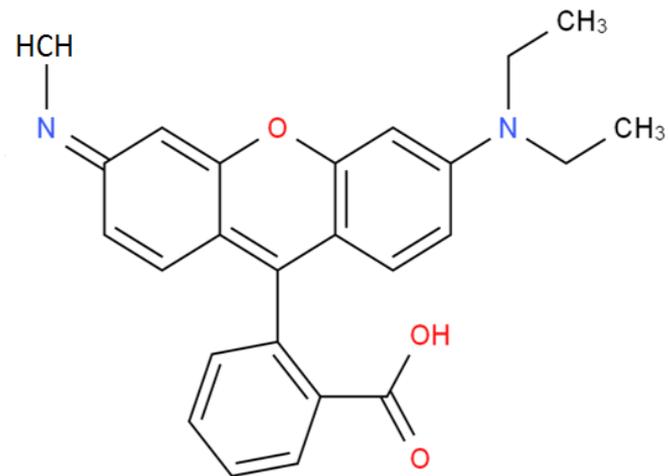
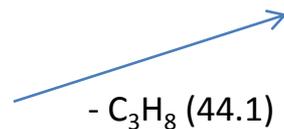
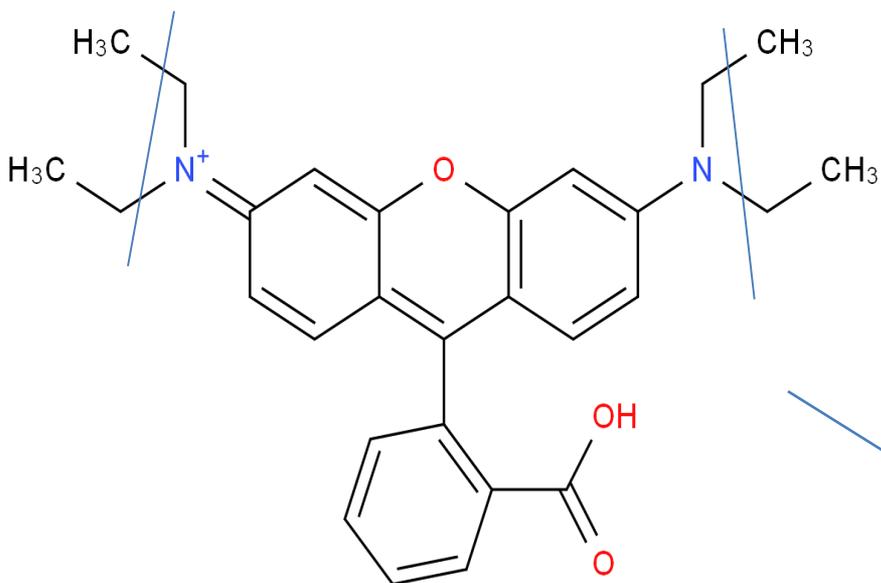
# Liquid chromatography (LC)



# Triple quadrupole Mass spectrometer

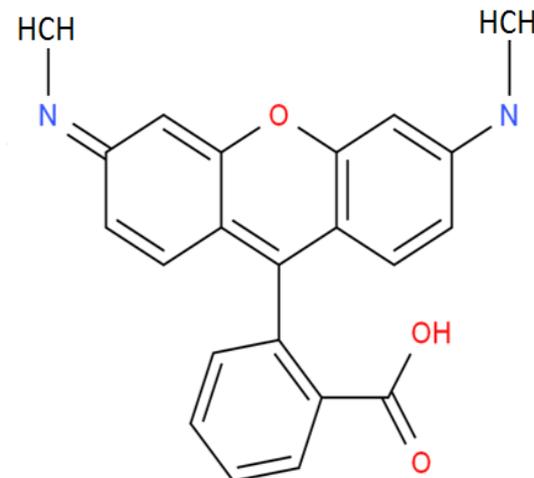
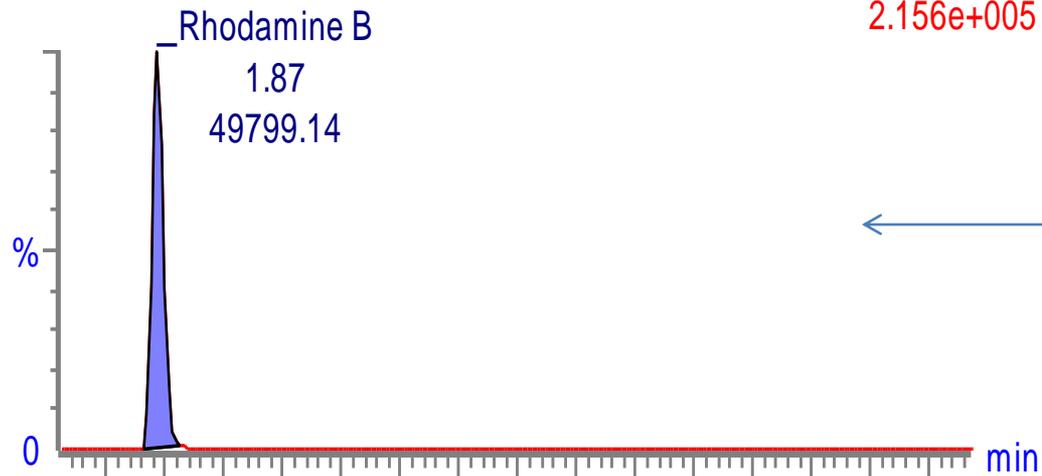


# Rhodamine B



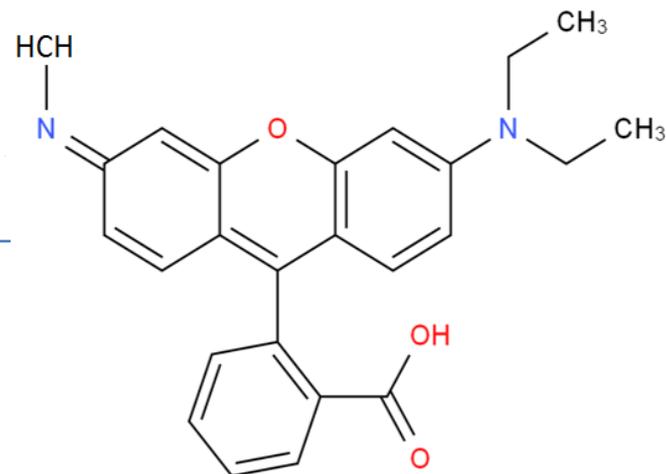
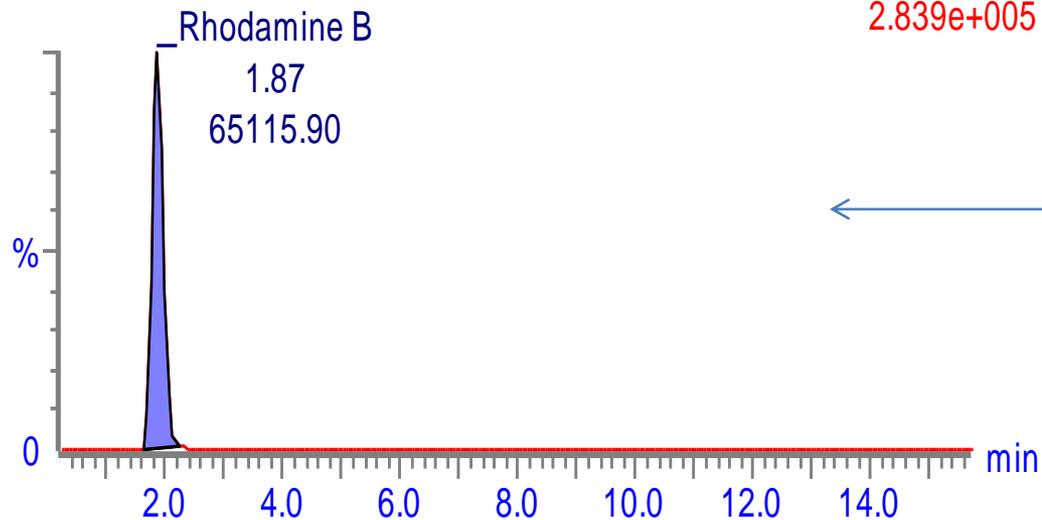
colors-14-4-205 Smooth(SG,2x1)  
14C-749 turnips D1000 D2

F1:MRM of 32 channels,ES+  
443>355  
2.156e+005



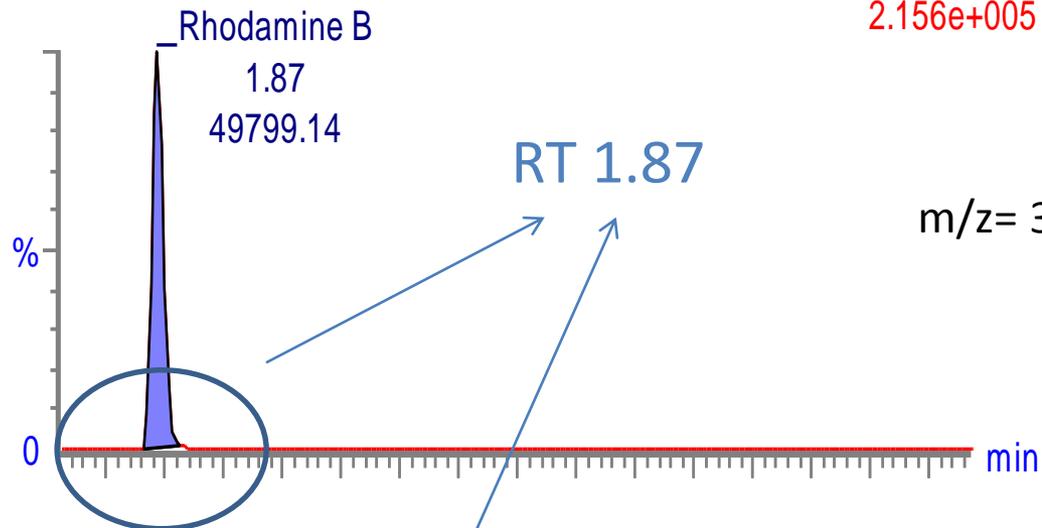
colors-14-4-205 Smooth(SG,2x1)  
14C-749 turnips D1000 D2

F1:MRM of 32 channels,ES+  
443>399  
2.839e+005



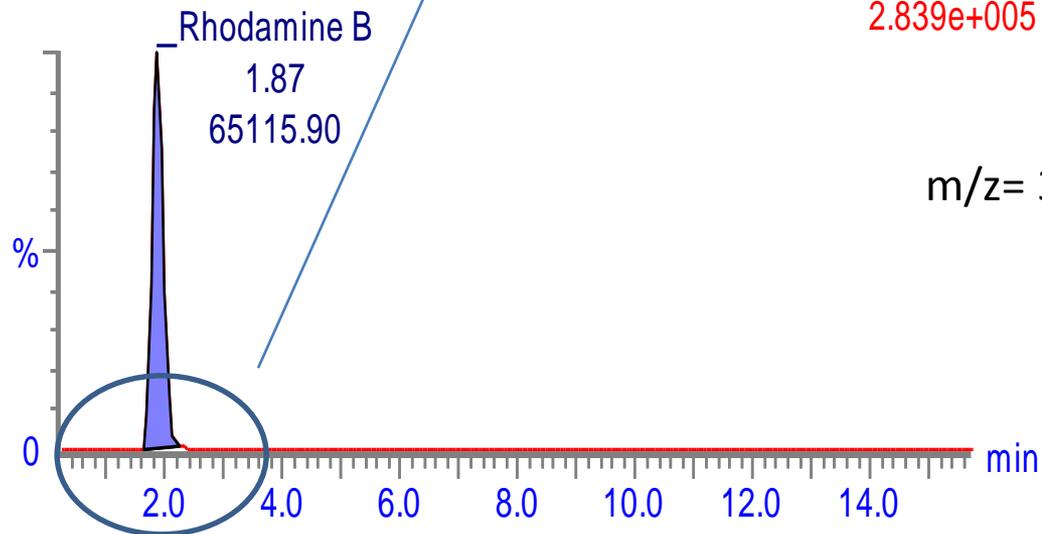
colors-14-4-205 Smooth(SG,2x1)  
14C-749 turnips D1000 D2

F1:MRM of 32 channels,ES+  
443>355  
2.156e+005



colors-14-4-205 Smooth(SG,2x1)  
14C-749 turnips D1000 D2

F1:MRM of 32 channels,ES+  
443>399  
2.839e+005



76%



Ion ratio for Rhodamine B

**Candy coated seeds.**

**Origin: Pakistan**

**Rhodamine B**

**detected by LC/MS/MS  
method**



**Is there any evidence  
of other Industrial Dyes  
being used in food?**

## Sudan IV Makes Duck Egg Redder?

The hot-selling red-heart duck eggs come from the ducks which are fed cancer-causing Sudan IV, reported the CCTV' s *Weekly Quality Report* program recently.



The red-heart duck eggs [dayoo.com/Guangzhou Daily]



The egg(R) containing Sudan IV is redder than the common egg (L). [CCTV.com]

The red-heart duck eggs are redder and "with more nutrition" than the common ones because "the duck was fed fish, shrimp and float plant", alleges the sales in the supermarkets.

However, an inspection from Chinese Academy of Inspection and Quarantine Sciences (CAIQ) shows that one kilogram duck eggs contain 0.137 milligram Sudan IV, much higher than the safety standard. As an industrial dye, Sudan IV is not permitted for use in food. It is likely to pose adverse health effects after taking for a long period of time.

(Translated by editor Jessie)

# LETHAL MEAL

## Cancerous dye in every bite of your favourite street biryani

Prithvijit Mitra | TNN

10 June 2010

Kolkata: Cancer comes at Rs 15 a plate in Kolkata and is sold at every crossing and locality in the city. The street biryani you tuck into in a hurried lunch break or have home-delivered from that well known restaurant is laced with **metanil yellow, an industrial dye and a known carcinogen.**

The biryani's yellow colour that should come from kesar is replaced with this cheap lead-based dye. Kesar comes for Rs 200 a gram whereas metanil yellow costs just Rs 4 a packet. More than 90% of street sellers in Kolkata and even some well known restaurants use the yellow dye to make a fast buck. And you tuck into the plate of meat and rice thinking you have struck a delectable little bargain.



**Metanil yellow is sold under various brand names. One such packet in TOI's possession claims that it is 'permitted' for use in food. Its contents list mentions tartrazine — a synthetic lemon yellow dye — as the principal component. The packet has even got an ISI seal embossed on it and claims to have been approved by the agency.**

**Even though tartrazine could be of food quality, it cannot be sold at Rs 4, pointed out experts. "A 10-gm packet of food-grade tartrazine costs more than Rs 350. The fact that they are selling it so cheap proves this is fake. Also our tests show that these turn pink or blue when treated with hydrochloric acid, which means they have metanil yellow,"** said Utpal Ray Choudhury of the department of food technology, Jadavpur University.

# THE ENEMIES OF INDIA

Binoy Valsan, TNN Mar 24, 2011, 01.57pm IST

## Don't go for colour, it just might kill

COIMBATORE: The brightly-coloured snacks at your city eateries and shops may tempt your eyes and tastebuds. But beware of what you bite as risks abound in many of them. Lab tests of samples of crunchy namkeens and sweets picked up from shops in Coimbatore city and across Tamil Nadu point to alarmingly high levels of adulteration. As high as 65.7% of the samples of spicy savouries picked up randomly for tests in 2010 by the department of health were found to be adulterated.

Shockingly, the adulteration seems to be rising every year. In 2009, only 56% of the samples of namkeens were found to be contaminated. In Coimbatore city too, 11 out of the 21 samples of namkeens and other snacks were found to be adulterated, according to corporation health officials. "Adulteration mainly happens in the use of colouring agents. Non-permitted colours are used to brighten up most of these snacks," joint director of health, Dr Sadasivam told TOI. The alarming revelation is that chemical colouring agents that are used to dye your clothes are being mixed with the ingredients to attractively brighten up the namkeens and sweets. If the mouth-watering laddus and jangris stored in glass containers are deep orange in colour, just don't buy them, says the health official. For, brightly coloured food come packed with toxic dyes, he says. **Rhodamine**, a chemical is used to give the bright red or brown colour to the food stuffs. In India, **Rhodamine B** is used in making kara sevs, bhajjis and laddus. **A study done in New York a few years ago revealed that Rhodamine B is carcinogenic and could cause cancer of the intestines.** Another chemical, **malachite green**, is used to brighten the shelled peas or chips before frying them.

When the artificially coloured peas is soaked, the water turns green. "When the colour of the green peas washes, it shows it is adulterated," says a food analyst of the health department. And **metanil yellow** is another dangerous colouring agent which is often mixed with gram flour for making attractive crimson bhajjis, bondas and other crunchy savouries. Rats which were fed **metanil yellow** laced food frequently suffered irreversible damage to their central nervous system, according to a study conducted by the NIMHANS at Bangalore. The study showed chronic consumption of **metanil yellow** predisposes the body to nervous toxicity. Children who consume these adulterated food are the most vulnerable, say doctors. From a mild irritation or upset of the stomach to cancer of the intestines, children and adults gobbling up the adulterated namkeens are exposed to an alarming range of health hazards. "We regularly advice parents to not let children eat these brightly coloured snacks. But they don't seem to listen. Especially, in sweets like jangris, non-permitted colours are being used liberally by some sweet makers. This could cause irritation in the stomach and in worst cases, intestinal cancers too," says Dr V Kumaran, dean of the Kovai Medical Centre and Hospital. However, doctors say adulteration of food is on the rise only because of the government's failure to strictly enforce the laws against food adulteration. "Now those caught and convicted for selling adulterated food just pay a fine of Rs 3,000 and Rs 5,000 and get away," says a corporation food inspector. The Prevention of Food Adulteration Act is, however, set to change with more powers for the enforcing authorities, especially the health officials.

The revamped law will allow the public to get the food samples tested free of cost. As of now, the public have to lodge a complaint with the food inspectors and go through a cumbersome process besides paying Rs 1,000 to get the food samples tested. "Unless the law is changed and the amended law is enforced strictly, it is not possible to rein in adulteration in food," says Dr Kumaran, who was formerly the dean in-charge of the Coimbatore government medical college hospital.



channelnewsasia.com

A MEDIA CORP Interactive Media

# Tea leaves from Myanmar recalled

Posted: 30 March 2009 1112 hrs

Singapore: A range of pickled tea leaves imported from Myanmar has been found to be unsafe for consumption.

The Agri-Food and Veterinary Authority (AVA) - which has issued a product recall - said it has detected the presence of **Auramine O, which is a yellow dye used as an industrial colouring agent for coloring silk, cotton, paper and leather.**

The dye is not permitted for use in food, and all products containing the dye have been recalled and will be destroyed.

The move follows a ban by the Myanmar Health Ministry on 43 brands of pickled tea leaves which **were found to contain the chemical dye instead of edible dye, which is said to cost 20 times higher than Auramine O.**



Pickled tea leaves, mixed with edible oil and nuts often called "tea salad" or "la phet thote" is a popular traditional side dish.

The pickled tea leaves found to contain the chemical dye include several popular brands sold in Myanmar and abroad.

In Singapore, 20 types of pickled tea leaves imported from Myanmar have so far been found to contain Auramine O dye, including those under the brands of Ah Yee Taung, M&N, Shwe Toak, Soe Win, U Ka Kar, Yuzana and Zayan.

The AVA said in a statement that all consignments of tea leaves from Myanmar will be held for testing and will be released for sale only if test results show that they are free from Auramine O.

Consumers who have bought such products are advised not to consume them but to discard the products. Those with queries can call AVA's hotline at 6325-7625.

# A chemical dye emerges the city's favourite poison

A Subburaj, TNN Apr 7, 2012, 04.22AM IST

COIMBATORE: A crackdown on the sale of a chemical substance, known as cow dung powder in common parlance, is imminent. This chemical substance, used in the dyeing industry, has emerged as the favourite substance for the city's depressed lot when they wish to take their lives.

As per police records, at least 56 persons including 32 women committed suicide by consuming cow dung powder in Coimbatore last year. The toll as on March 25 this year is 10.

That the powder is cheap and is easily available makes it the preferred poison for those wanting to end their lives. A packet costs just Rs 5 and is available in most grocery shops in the city, though the government has banned of-the-counter sales.

"We are taking severe action against shopkeepers selling the banned cow dung powder to the public. People should not take the extreme step by consuming chemical substances. If they are having problems, they could seek police help," said Hema Karunagaran, deputy commissioner of police.

On February 15, Shanthi Selvaraj, a 34-year-old resident of Annai Velankanni Nagar in Sowripalayam, killed her two little daughters, Priyadarshini and Jeevadarsini, by feeding them the chemical and took the same to end her life. Priyadarsini, 10, was found dead with her hands and legs tied to a cot and her head smashed with a wooden log. Police said she was force-fed the chemical. A month later, T Tamilmani, 55 of New Siddhapurdur, died taking the chemical. Police said Tamilmani was unemployed for over two years and was an alcoholic. His wife had refused him money to buy liquor and a depressed Tamilmani consumed cow dung powder and died.

The chemical dye is used as a substitute for cow dung, which is applied on the floor of houses and in courtyards. Two types of the powder are available: yellow cow dung powder or **Auramine O** and the green coloured **Malachite Green**. Auramine is the more poisonous one, which affects the functioning of major organs when consumed. People who consume Auramine generally die of multiple organ failure.

"The chemical dye is very poisonous and there is no proper antidote to this poison to counteract its effect which makes chances of survival meagre. There is a need to enforce the ban on cow dung powder in the city," says Dr P Sivaprakasam, resident medical officer, Coimbatore Medical College Hospital.

**In some countries, dye is inexpensive and easily obtained.**



# 80 per cent of food stuff adulterated in Uttarakhand

**Dehra Dun:** In Uttarakhand where there seems to be zero governance, every one is having a ball at the cost of the aam aadmi. From the highest echelons of power to the lowest, the focus seems to be on how to make a quick buck, without an iota of thought to improving the lot of the people. And even the traders are having a field day as almost all the edibles are adulterated and it does not seem to bother the concerned authorities.

An NGO, ***Society of Pollution and Environmental Conservation Scientists*** took 255 samples of edibles from various shops in Dhamawala, Hathi Barkla, Dharampur, Hanuman Chowk, Ajabpur, Karanpur, Krishna Nagar, Panditwari, Doon Vihar, Premnagar, Rajpur, Raipur and D L Road localities of the city. And of these as many as 205, that is 80 per cent were found to be adulterated. Obviously with concerned authorities not taking samples, the traders are making the most of it.

It may be sound ridiculous, out of Ripley's Believe it or Not, but 100 per cent of the mustard oil samples were found adulterated with argemone oil, mobil oil and **metanil yellow**. And likewise 100 per cent of the roli samples were also found adulterated with lead arsenic and chromate. Imagine cooking food in mobil oil, but that is where things have gone to in Uttarakhand also called Land of the Gods (sic).

Of the honey samples that were taken as many as 90 per cent were adulterated, thankfully only with honey and not something that kills or is carcinogenic. Even **90 per cent of the turmeric** (that is used by all households for cooking) samples that were taken were found to be adulterated with **metanil yellow, lead chromate** and rice flour.

The milk that people drink in this small mountain state is 84 per cent chemical milk as the samples were found to be adulterated with soda, dry milk powder, refined oil, urea and **formline**, whereas 80 per cent of the 'mawa' was adulterated with dry milk, refined oil and Dalda. Even 80 per cent of the 'burfi', milk cake and 'gulab jaumn' was adulterated with refined oil, wheat flour and dry milk.

Even 80 per cent of the red chilly samples that had been taken were found to be adulterated with geru, **rhodamin-B, Sudan-III** and old and low grade chilly, while 80 per cent of the pure ghee samples was nothing but Dalda and essence, while 80 per cent of the 'ladoo' and 'sonpadi' samples contained **metanil yellow** and 70 (thankfully) per cent of the 'paneer' samples was adulterated dry milk and refined oil.

Hold your breath, 70 per cent of the 'dhania' (coriander) samples had been adulterated with of all the things, saw dust. Incidentally, the NGO had also undertaken a survey of the dhabas along the route to Badrinath, Kedarnath, Yamunotri and Gangotri and the samples indicated that the food at these places was highly adulterated, enough to make one fall sick.

**What are  
consumers to do  
in a country  
where the food is  
highly  
adulterated?**

# Eat less, avoid adulteration: Faruk Khan

Thu, 04/08/2011 - 10:26pm | by priyodesk



Amid widespread adulteration of food items, Commerce Minister Faruk Khan has come up with a solution to it -- eat less.

**“Eat less, things will be okayed,” he said admitting the government’s helplessness in dealing with the growing problem.**

The minister came forward with the advice at a discussion on ‘Adulteration of Foodstuff: Our Doings’ at the National Press Club on Thursday.

# ET EASY TEST



MENYEDIAKAN:

- TEST KIT FORMALIN
- TEST KIT BORAX (BORAKS)
- TEST KIT METHANIL YELLOW
- TEST KIT RHODAMIN B

**AHLINYA TEST KIT DI INDONESIA**

CONTACT: [easy4test@yahoo.com](mailto:easy4test@yahoo.com) or 085780850560 / 087887398466



# ET Easy Test

Menyediakan Test Kit Formalin, Test Kit Boraks  
Test Kit Rhodamin B, Test Kit Methanyl Yellow

# Is Your Food Safe? New ‘Smart Chopsticks’ Can Tell

Don't trust the safety of your food in China? Baidu says it has the answer.

The Chinese search-engine giant on Wednesday rolled out a so-called set of “smart chopsticks,” known as Kuaisou in Chinese, that it says can detect oils containing unsanitary levels of contamination. At the company's annual technology conference, Baidu CEO Robin Li gave a brief introduction of the new product, which he called “a new way to sense the world.”



A model of the product was unveiled Wednesday in Beijing. - Baidu

“In the future, via Baidu Kuaisou, you'll be able to know the origin of oil and water and other foods—whether they've gone bad and what sort of nutrition they contain,” Mr. Li said in a speech Wednesday.

A video posted by the company shows how to use the product, which is linked with a smartphone app. In one experiment, the chopsticks were shown being swirled in olive oil, with the smartphone subsequently displaying a “good” reading. In another, the chopsticks registered a “bad” reading after being submerged into recycled cooking oil. In recent years, China has been rocked with scandals involving everything from toxic milk to glow-in-the-dark pork. Earlier this month, a cook at a hotel in the tourist town of Hangzhou was put on trial for painting food with “inedible pigment” to make it look more appealing.

# LC/MS/MS color screen 30 compounds

(Basic dyes, Acid dyes, Solvent dyes, Pigments)

<b>Analyte</b>	<b>RT</b>	<b>T 1</b>	<b>T 2</b>
Basic Blue 3	4.82	324.1>280.2	324.1>236.2
Sudan II	8.13	277.2>120.8	277.2>260.3
Sudan III	8.47	353.2>76.8	353.2>196.0
Sudan IV	9.04	381.2>90.8	381.2>224.2
Rhodamine B	5.50	443.1>399.1	443.1>355.1
Orange II	5.44	329>312	329>155.9
Dimethyl Yellow	7.11	225.9>76.5	225.9>104.5
Yellow OB	7.56	261.9>106.5	261.9>245.9
Fast Garnet GBC	6.69	225.8>90.5	225.8>120.6
Yellow AB	7.22	247.9>232.0	247.9>92.6
Para Red	7.05	294.2>155.7	294.2>277.0
Sudan Orange G	6.01	215.2>197.9	215.2>92.8
Sudan Red B	9.04	381.2>224.2	361.2>90.8
Sudan Red G	7.34	279.2>122.8	279.2>107.8
Toluidine Red	7.34	308.2>155.8	308.2>127.8
Quinoline Yellow SS	5.95	274.2>104.7	274.2>228
Auramine O	4.88	268.3>146.9	268.3>252.1
Sudan Black	8.47	456.9>193.9	456.9>2.11
Sudan Red 7B	9.04	379.9>183	379.9>168.9
Metanil Yellow	5.90	353.8>156.9	353.8>109
Malachite Green	5.61	329>208	329>284
Chrysoidine G	4.38	213.1>121.2	213.1>77.3
Rhodamine 6G	6.13	443.05>415.1	443.05>341.2
Safranin O	4.72	315.1>238.2	315.1>210.1
Brilliant Green	6.59	385>341.1	385>297.1
Crystal Violet	6.19	372.1>356.1	372.1>235.2
Pararosaniline	4.15	288.0>195.1	288.0>167.1
Sudan I	7.63	249.2>92.6	249.2>232.2
Basic Yellow 13	5.17	307>292.1	307>158.2
Basic Red 46	4.30	321.1>224.0	321.1>196.0

# Dried Young Sweet Rice

Origin: Vietnam

Contains:  
Auramine O,  
**Crystal Violet** &  
a Blue Reactive dye (?).

Also acid dyes:  
Tartrazine &  
Brilliant Blue.



# Cayenne Pepper (powder)

**Origin: Unknown**

**Contains:**

**Crystal Violet  
50.3 ppb**



**Ice Sour Plum**  
**Origin: China**

**Contains:**  
**Rhodamine B.**

**Also acid dye:**  
**Ponceau 4R.**



# 6 in 1 Mukhwas

Origin: India

Contains:  
Orange II,  
Auramine O &  
Rhodamine B.

Also acid dyes:  
E124 Ponceau 4R  
&  
E122 Carmoisine.



**Five Spice Powder**  
**Origin: Vietnam**

**Contains:**  
**Auramine O.**



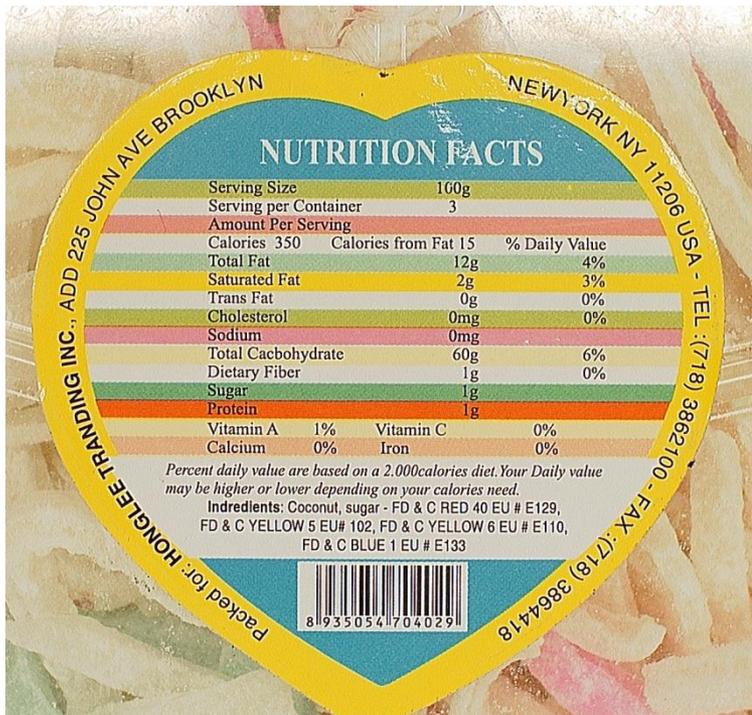
# Coconut Product

Origin: Vietnam

FD&C Red 40:

Declared on label, but not found.

Contains: **Rhodamine B**



# “Best” Sample of 2012!

under White Light

Allura Red AC  
Erythrosine  
Tartrazine  
Sunset Yellow

Ponceau 4R

Rhodamine B  
Auramine O  
Orange II  
Acid Blue 1

Crystal Violet  
Brilliant Green

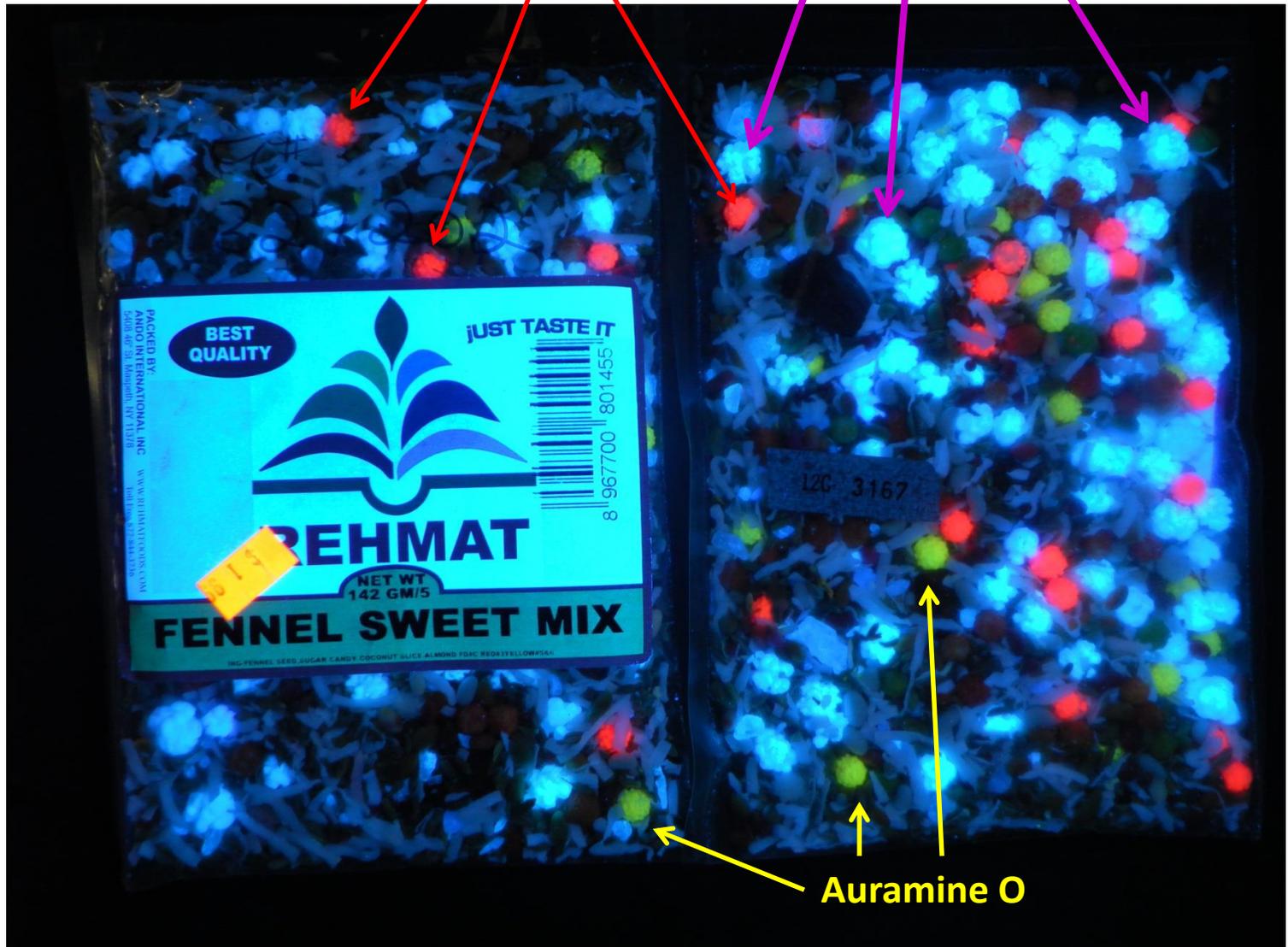
Fluorescent  
Brightener?



Sample (12C-3167) under long wave UV light

Fluorescent brighteners ?

Rhodamine B



Auramine O



HEALTH

Tuesday, Jul 23, 2013, Posted at: 12:40(GMT+7)

## Most rice noodles in markets contaminated with Tinopal

Tests conducted by the Center for Consumption Study and Consultation (CESCON) found 30 samples of rice noodle varieties from four supermarkets, four traditional markets and one shop to contain Tinopal--**a fluorescent whitening agent used** in detergent powders and liquids.

The Tinopal was being used **to make the rice noodles, rice vermicelli, and rice spaghetti to look more white and brighter.**

According to test results released on July 22, around 24 of the 30 samples contained Tinopal. Tinopal consumption can cause liver and kidney failure, body fatigue, gastrointestinal damage, and even cancer.



Rice vermicelli is found to have Tinopal fluorescent

CESCON has petitioned the Ministry of Health to tighten control on food safety in general and production and sale of rice noodles in particular in markets and supermarkets.

Experts advise consumers to use ultraviolet light to check quality of rice noodles, as the noodles contaminated with Tinopal glow under fluorescent light.

# Fennel Seed Sweet Mix

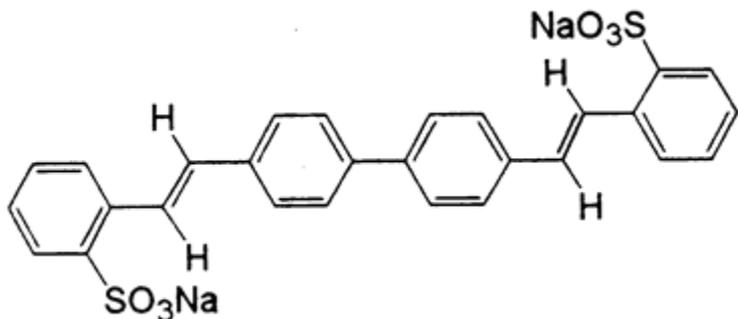
Origin unknown

Contains:

Ponceau 4R  
Carmoisine

**Fluorescent Brightener 351**

(by normal phase  
paper chromatography,  
thin-layer chromatography  
and  
reverse phase  
paper chromatography )



## Violative Samples by Country of Origin

<u>Country</u>	<u># of samples</u>	<u>% of total violations</u>
India	23	21.3%
Vietnam	17	15.7%
China	16	14.8%
Pakistan	8	7.4%
Philippines	8	7.4%
Bangladesh	6	5.6%
Nepal	5	4.6%
Taiwan	1	0.9%
Mexico	1	0.9%
Unknown (likely Asia)	21	19.5%
<u>USA</u>	<u>2</u>	<u>1.9%</u>
Total	108	100%

Commodity	Sample Type	number of detects	Auramine O	Colorant	Found	Metanil Yellow	Malachite Green	Orange II	Rhodamine	Sudan I	Toluidene	
				Brilliant Green	Crystal Violet				Dimethyl Yellow		B	Red
Candy - 5	Nepali ethnic (candy?)	5	1	3			1	2	4			
Eggs - 1	cooked duck eggs	1							1			
Dried Fruit - 24	apricot	1						1		1		
	coconut	2							2			
	dates	1			1							
	fruit	5			1				4			
	lemon	1							1			
	olive	2	1								1	
	orange	1	1									
	peach	1							1			
	plum	4	1		1				2			
	raisins	3					2		3			
	strawberry	1						1	1			
	tamarind	1										
	tomato	1								1		
oil - 5	mustard oil	2							1	1		
	sesame oil	3							3			
Sauces - 2	curry-based sauce	1							1			
	pepper/chili-sauce	1							1			
<b>Spices - 48</b>	Cayenne powder	1			1							
	Chilli pods	1							1			
	Chilli powder	17	3				5		16	2		
	Coriander powder	1							1			
	Curry-based powder	6	3						3			
	Ginger powder	1	1									
	Javantri (Mace) whole	2					1		2			
	Other spice/coloring	1							1			
	Paprika	1							1			
	Safflower powder	9	1					3	10	2	3	
	Spice/soup mix	6	4			1			2	1		
	Turmeric powder	1									1	
	Turmeric whole	1								1		
Starch - 9	Rice flakes (dried)	1	1		1							
	Tapioca product	8	6				7		7			
Sweets - 12	Cookies/Crackers	4			1							
	Sweet fennel/mukhwas	8	4	1	1	1	1	3	8			
vegetables - 2	peas	1							1			
	dried sweet potato	1		1								
		108	27	5	8	2	17	3	17	72	9	1

## World Spice Production in tons, 2003-04, data from FAOSTAT

India		1,600,000	85.6%
China		66,000	3.5%
Bangladesh		48,000	2.6%
Pakistan		45,300	2.4%
Turkey		33,000	1.8%
Nepal		15,500	0.8%
Other		60,900	3.3%
Total		1,868,700	100%



# SPICES BOARD INDIA

Ministry of Commerce & Industry, Govt of India

स्पाइसेस बोर्ड भारत

वाणिज्य एवं उद्योग मंत्रालय, भारत सरकार

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Quality Assured  
Consumer Packs



## Regulatory Functions

### Mandatory quality check

Export of chilli/chilli products or other foods products containing chilli products in whatsoever form is subjected to mandatory sampling and quality test for Aflatoxin and Sudan I, II, III & IV and shipment is permitted at Customs only on the basis of cleared analytical report from the Spices Board. The above condition shall also apply to all exports of turmeric powder to destinations in EU, USA, North America, Australia, New Zealand and Japan. Circulars issued in this regard are given in "Trade Notifications" in the home page.

Board's officers authorized to issue the Certificate on Mandatory Sampling may be substituted as follows: in Annexure II attached to circular dated 9.9.2004 on Mandatory sampling and testing of chilli.

Location port / Stuffing Point	Name & Designation of the official
Anywhere in India	Mr. P M Suresh Kumar, Director(Mktg) Mr. M P Suresh, Dy. Director(Mktg) Mr. K B Radhakrishnan, Dy Director(Mktg) Ms. M B Ajithakumari, Asst. Director(Mktg)
Kochi	Mr. Jayan Puthiyedath, Jr. Section Officer Mr. P M Sanathanan, Junior Clerk (GR) Mr. P K Lakshminarayanan, Assistant



GOV.UK

Guidance

## Chemicals in food: safety controls

### Sudan dyes and industrial dyes not permitted in food

**Certain industrial red dyes** - such as Para Red and the four Sudan dyes (Sudan I, Sudan II, Sudan III and Sudan IV, otherwise known as scarlet red) - **are not permitted for use in food, as they are carcinogenic**. Sudan dyes are used legally in shoe and floor polish, solvents, oils, waxes and petrol.

Sudan dyes have been used illegally in spices, sauces, chutneys, vinegars and palm oil, among many other products and, in some of these cases, food products have been recalled.

The FSA provides food alerts about illegal dyes added to food to enforcement authorities who follow up with businesses that might be affected.

Other illegal dyes are:

- butter yellow
- metanil yellow
- orange G
- rhodamine B
- orange II
- toluidine red

Since 2003, all imports of dried, crushed and ground spices, curry powders, curcumin and palm oil have had to be accompanied by test certificates showing that they do not contain Sudan dyes. Any consignment without relevant documentation is detained for sampling and analysis.

Random sampling must also be carried out by port and local authorities - the FSA sample over 1,000 consignments every year. Any consignment found to contain Sudan is destroyed.

## City seasonings use possibly carcinogenic industrial dye

Last Updated: Friday, February 26, 2010 11:15:28

Three seasoning producers in Ho Chi Minh City have used industrial dye that is a suspected carcinogen, the health department of Vietnam's southern hub said Thursday.

The six samples were contaminated with **Rhodamine B**, a chemical used in textile industry banned from use in food in Vietnam.

Among them are beef stew seasoning samples that contained 332 mg of **Rhodamine B** per kilogram and beef stew coloring power that contained 680.5 mg of Rhodamine B per kilo. Both samples are from the brand Kim Nga.

Kim Nga was earlier found to use **Rhodamine B** in its chili powder and reddening powder. The city Health Department inspectors suspended the producer on January 29.

Meanwhile Kim Thanh factory in Binh Chanh District was found using 31.7 mg of **Rhodamine B** in each kilo of dried satay powder, a seasoning made of chili and cooking oil.

The reddening powder and stew seasonings at Nam An seasoning producer in District 6 also contained a slight amount of **Rhodamine B**.

HCMC health inspectors have sealed 483 kilograms of the contaminated seasonings at Nam An and closed the factory temporarily.

Nam An was also asked to withdraw the contaminated products from the market and dispose of them.

All the samples were taken from Binh Tay, a major food wholesale market in District 6.

**Rhodamine B costs less than other colorings for food and offers more attractive color**, experts said.

Source: Thanh Nien



# Chilli Mixed Flavor

Origin: Vietnam

Contains:  
Rhodamine B &  
Auramine O.



# Vermicelli Soup Flavor

Origin: Vietnam

Contains:  
Auramine O

Also acid dyes:  
Ponceau 4R,  
Tartrazine &  
Sunset Yellow.



# Saffron Flower (Kasubha)

**Origin:  
Philippines**

**Contains:  
Acid Orange II,  
Metanil Yellow &  
Sudan I.**

**Also acid dyes:  
E124 Ponceau 4R  
&  
E126 Ponceau 6R.**



# “Best” Sample of 2013!

**Origin: Pakistan**

**Contains:**

**Sudan I > 300 PPM (CFIA)**

**Sudan IV > 300 PPM (CFIA)**

**Also:**

**Rhodamine B**

**Auramine O**

**Orange II**

**Dimethyl Yellow**

**Fast Garnet GBC**

**Metanil Yellow**

**Malachite Green**

**Update Aug. 2014...**

Curcumin = 147.0 ppm (CFIA)

Demethoxycurcumin = 54.1 ppm (CFIA)

Bisdemethoxycurcumin = 55.1 ppm (CFIA)



**For all those of you who  
are thinking...**

**I'm glad I only use**

**salt and black pepper...**

## NCDEX seek nod to clean adulterated pepper stock

Leading agri-bourse NCDEX, facing the heat from Kerala government over adulterated black pepper stock, today denied any liabilities and sought official permission to remove harmful mineral oil coating from the 900 tonne spice stock valued at around Rs 350 crore.

Last week, the Kerala Food Safety Commissioner ordered NCDEX to destroy 900 tonne of adulterated black pepper...

According to the Prevention of Food Adulteration Act, use of any mineral oil in pepper is prohibited. **Mineral oil, used in adulterated black pepper, is made of burnt diesel, paraffin oil, white petroleum and other un-digestible and insoluble petroleum products.**

Black pepper coated with mineral oil is considered carcinogenic, and even otherwise harmful for human consumption.

## NCDEX to clean 6,400 tons adulterated black pepper at earliest

NEW DELHI: Leading agri-bourse NCDEX today said it will clean 6,400 tonnes of adulterated black pepper lying in Kerala at the earliest and resume fresh contracts early next season starting January.

"After the long battle, we have got the court order allowing us to remove impurities in 6,400 tonnes of black pepper. We will clean it as soon as possible and deliver it to the beneficiary holders," NCDEX CEO and Managing Director Samir Shah said.

The adulterated stock is lying in Kerala. "We will process the stock to remove mineral oils, thereby solve the very massive industry problem," he said.

The exchange would like to process the entire stock before the new season starts, he added.



NCDEX is trying to address the adulterated pepper issue since 2012 as the food safety authorities had seized the stock from some Kerala warehouses accredited by it after buyers complained that the stock contained mineral oil

# Preserved Lemons

Origin: Egypt

Contains:

Sudan I  
(Solvent Yellow 14)



**Ag & Mkt.**  
**Market Blitz sampling for color:**

**Nov. 27, 2013**

**Albany, New York**

**2 markets,**

**27 samples**

**11 adulterated**

**40% adulterated**

# Curry Powder

Origin: Vietnam

Contains:

Auramine O &

Chrysoidin (Basic Orange 2)



# Dried Tapioca Pearl

Origin: Vietnam

Contains:

Rhodamine B

Auramine O

**Malachite Green**

(as a colorant)

Also acid dyes:

Tartrazine

Brilliant Blue

E123 Amaranth



**Ag & Mkt.  
Market Blitz sampling for  
color.**

**March 14, 2014**

**Albany, New York**

**12 markets,**

**23 samples**

**8 adulterated**

**35% adulterated**

# Lift Turnips

Origin: Lebanon

Contains:

Rhodamine B



# Sumac Powder

Origin: Pakistan

Contains:

Amaranth E123 Red

Basic Red 46



# Turmeric Powder

Origin: Bangladesh

Contains:

Lead Chromate

**Lead 52.8 ppm**

**Chromium 10.3 ppm**

**Chromate Test = positive**

(Indian Standard 3576 : 2010)





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## Safety



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### Recall -- Firm Press Release

FDA posts press releases and other notices of recalls and market withdrawals from the firms involved as a service to consumers, the media, and other interested parties. FDA does not endorse either the product or the company.

#### OnTime Distribution Inc. Recalls PRAN brand Spice Powder TURMERIC Due To Excessive Levels of Lead

**Contact:**

Consumer:

1-718-417-1100

**FOR IMMEDIATE RELEASE** - October 3, 2013 - OnTime Distribution Inc. of Brooklyn, NY, is voluntarily recalling PRAN brand Spice Powder TURMERIC because it was found to contain high levels of lead that could cause health problems to consumers, particularly infants, small children, and pregnant women if consumed. Recent analysis of the product found that it contained lead levels as high as 28 and 42 parts per million (ppm).

Lead can accumulate in the body over time. Too much can cause health problems, including delayed mental and physical development and learning deficiencies. Pregnant women, infants and young children especially should avoid exposure to lead. People concerned about blood lead levels should contact their physician or health clinic to ask about testing.

PRAN brand Spice Powder TURMERIC was distributed in New York and New Jersey through retail stores and direct delivery.

**This product is packed in two different size clear plastic jars with yellow plastic lids: Net Wt. 8.82 oz./250 gm with UPC 8 31730 00551, and Net Wt. 14.1 oz./400 gm with UPC 8 46656 00209 4. The affected date codes are: BEST BEFORE: 26 OCT 14 and BEST BEFORE: 15 JAN 15**

# Turmeric Powder

Origin: Bangladesh

Contains:

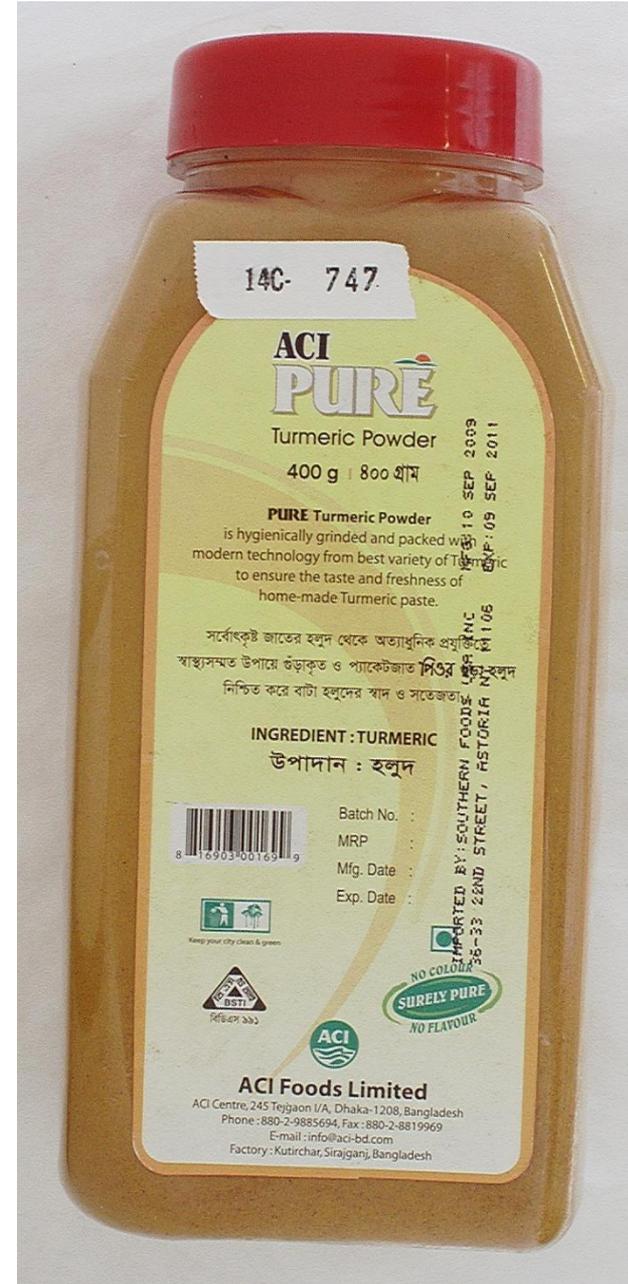
Lead Chromate

Lead 146.0 ppm

Chromium 30.0 ppm

Chromate Test = positive

(Indian Standard 3576 : 2010)

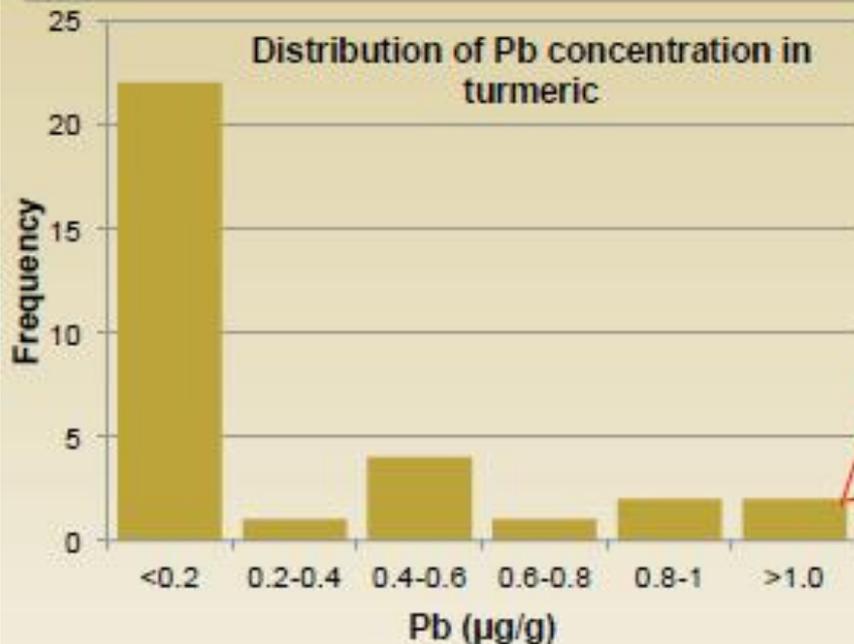


# Population Effects of Turmeric Consumption on Pediatric Blood Lead Levels

Whitney Cowell<sup>1</sup>, Donna Vorhees<sup>1</sup>, Thomas Ireland<sup>2</sup>, Wendy Heiger-Bernays<sup>1</sup>

<sup>1</sup>Department of Environmental Health, Boston University School of Public Health, <sup>2</sup>Boston University School of Arts & Sciences

from FDA we assumed 50% of soluble lead is absorbed in food and water from the child's GI tract



We found two samples with extremely elevated concentrations:

**1. ACI Pure: 99.5 µg/g**

**2. Pran: 34.8 µg/g**

Both were imported from Bangladesh where the permissible level is 2.3 ppm. Using our mean intake, we estimate that a single 400g bag of AcI Pure would last for 2 years when consumed by a child on a daily basis.

3.49

14C- 745

MAYA OVERSEAS FOODS, INC.  
 1000 MASSENAVE RD., SUITE 101, FT. LEE, VA 22041  
 STOP #1 www.mayafoods.com

*A Taste of The East*  
**DHON**

Net Wt.  
400 g (14 oz)

**PAPRIKA**

0 2084 31205 8 1

FL381877

MAYA OVERSEAS FOODS, INC.  
 1000 MASSENAVE RD., SUITE 101, FT. LEE, VA 22041  
 STOP #1 www.mayafoods.com

*A Taste of The East*  
**DHON**

Net Wt.  
400 g (14 oz)

**PAPRIKA**

0 2084 31205 8 1

DONYA SUPERMARKET  
 (541) 668-8814  
 \$ 3.49

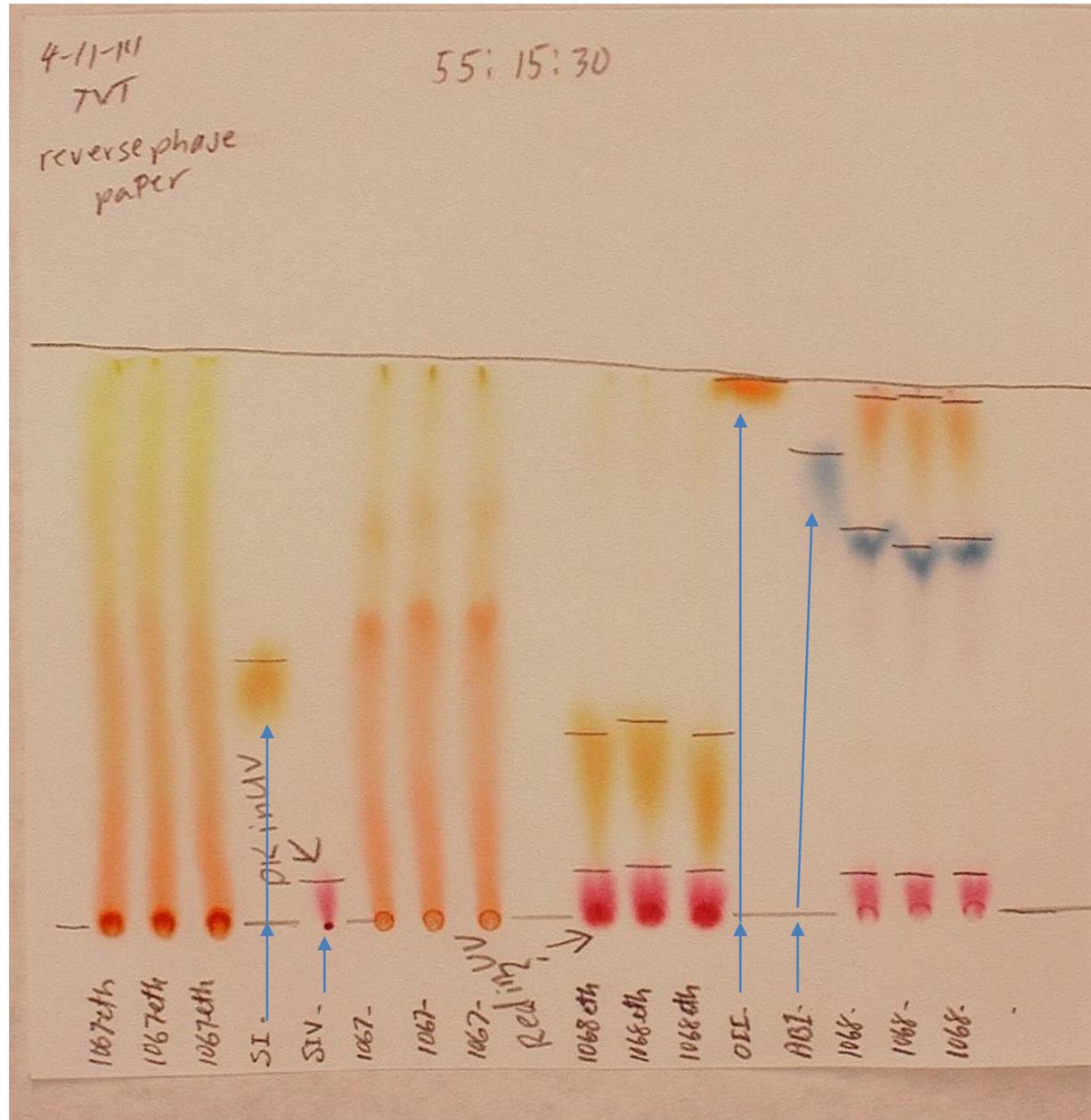
## 14C-1067 Paprika

Observe color:  
Sample is  
adulterated with  
...Annatto...

## 14C-1068 Paprika

Dyes found:

Sudan I  
Sudan IV  
Acid Black 1  
Orange II



## Notifications list : 14 results

Search criteria | Subject **\*PAPRIKA\*** AND **\*ANNATO\***

date	notification basis	notified by	origin	subject	distribution	action taken	distribution status
<b>herbs and spices</b>							
20/08/2004	border control - consignment detained	Spain	from Ghana	unauthorised use of colour E 160b - annato/bixin/norbixin (1790 mg/kg - ppm) in paprika (chilli powder)		re-dispatch	no distribution
9/6/2006	official control on the market	Belgium	from Spain	unauthorised use of colour E 160b - annato/bixin/norbixin (8 mg/kg - ppm) in hot paprika powder from Spain	Netherlands, Italy, France, Belgium	product recall or withdrawal	distribution on the market (possible)
13/10/2006	official control on the market	France	from Belgium	unauthorised use of colour E 160b - annato/bixin/norbixin (25 mg/kg - ppm) in sweet paprika from Belgium	France	no action taken	distribution on the market (possible)
11/6/2007	official control on the market	Czech Republic	from Spain from Peru	unauthorised use of colour E 160b - annato/bixin/norbixin (79 mg/kg - ppm) in hot paprika powder from Spain and Peru	Czech Republic	withdrawal from the market	distribution on the market (possible)
6/8/2007	border control - consignment detained	United Kingdom	from China from Hong Kong	unauthorised use of colour E 160b - annato/bixin/norbixin (70 mg/kg - ppm) in paprika and chilli powder from China via Hong Kong		destruction	no distribution
17/01/2008	border control - consignment detained	United Kingdom	from United States	unauthorised use of colour E 160b - annato/bixin/norbixin (> 10000 µg/kg - ppb) in chilli powder & paprika composite <b>from the United States</b>		destruction	no distribution
24/08/2012	official control on the market	Denmark	from Lebanon	too high content of colour E 160b - annato/bixin/norbixin (bixin: 1700; norbixin: 74 mg/kg - ppm) in paprika powder from Lebanon	Germany, Denmark	recall from consumers	information on distribution not (yet) available

## Notifications list : 528 results

**Search criteria** | Subject \*UNAUTHORISED\* AND \*COLOUR\* | **Product category** herbs and spices

date	reference	notification type	notification basis	notified by	origin	subject	action taken
<b>herbs and spices</b>							
12/2/2013	2013.0180	information for attention	border control - consignment released	Belgium	from Ghana	unauthorised colour Orange II (>50 mg/kg - ppm) in hot pepper powder from Ghana	destruction
12/3/2013	2013.0345	information for follow-up	official control on the market	Czech Republic	from Spain  packaged in Czech Republic	unauthorised use of colour E 102 - tartrazine, of colour E 122 - azorubine and of colour E 124 - Ponceau 4R / cochineal red A in saffron from Spain, packaged in the Czech Republic	withdrawal from the market
9/8/2013	2013.1120	information for follow-up	official control on the market	Switzerland	raw material from Iran from Italy	unauthorised use of colour E 102 - tartrazine (3 mg/kg - ppm) in saffron from Italy, with raw material from Iran	withdrawal from the market
4/2/2014	2014.0154	alert	official control on the market	France	from Lebanon  from Netherlands	unauthorised colour Sudan 4 (146 mg/kg - ppm) in red chilli pepper from Lebanon, via the Netherlands	withdrawal from the market
9/5/2014	2014.0643	information for follow-up	official control on the market	Denmark	from unknown origin  from United Kingdom	unauthorised use of colour E 124 - Ponceau 4R / cochineal red A (1140 mg/kg - ppm) in tandoori masala from unknown origin, via the United Kingdom	withdrawal from the market

# “Best” Sample (so far) of 2014!

**Paprika**

**Origin: Turkey**

**Contains:**

**Sudan I:**

**720 ppm (Pvt. lab)**

**746 ppm (CFIA)**

**Sudan IV:**

**810 ppm (Pvt. Lab)**

**1015 ppm (CFIA)**

**Acid Black 1**

**Orange II**



5th International Symposium on RECENT ADVANCES IN FOOD ANALYSIS

November 1–4, 2011 Prague, Czech Republic

**G-68**

**MONITORING THE ILLEGAL USE OF DYES IN  
CHILLI POWDERS IN **TURKEY** (2008–2011)**

Pelin Ulca, Yeliz Ozturk, Beril Atamer

**“...but two samples from the same supplier in 2010 contained high levels of both Sudan I together with Sudan IV (676 & 466 mg/kg in one sample and 190 & 104 mg/kg in another sample for Sudan I and IV respectively). These results demonstrate that despite the widespread publicity concerning the use of illegal dyes and continued regulatory action this practice still continues to a worrying extent.”**

**“It is possible that the samples may contain other prohibited colouring matters which are outside the scope of the test as there are so many of them.”**

**- Quoted from Hong Kong’s Consumer Council website.**

## **Special Thanks to:**

**NYS Agriculture & Markets  
Division of Food Safety & Inspection**

**Julien Brazeau  
Canadian Food Inspection Agency  
Laboratory  
Longueuil (Québec), Canada**

**Rubin Rabinowitz  
American Dyestuff Corp.**

# Turmeric

## Chromate Test

(Indian Standard 3576 : 2010)

**14C-746 negative**

**14C-747 positive**

**14C-754 positive**

