



**Pesticide  
Action  
Network**  
Europe

# Pesticides in Table Grapes

## Background Paper (24/11/08)

Analysis of grapes purchased from 18 major food retailers revealed illegal, unauthorised and unsafe pesticides. Ninety nine percent of grapes tested were contaminated. One third of samples were classified as 'Not Recommended' for consumers due to critical levels of pesticide residues.

Analysis of 124 grape samples purchased from leading European supermarkets and wholesalers in France, Germany, Netherlands, Italy and Hungary found widespread pesticide contamination. Over 99% of grapes contained pesticides while 6.5 different pesticides were detected per sample. Twenty percent of grapes contained ten or more pesticides.

One third of grapes tested were classified as 'Not Recommended' (red rating) for consumers owing to critical levels of pesticide contamination, according to evaluation protocols developed by Greenpeace. Such grapes included samples purchased from all countries included in the analysis. Only one sample of grapes – sold by LIDL in Germany – was awarded 'Recommended' (green) status under the same assessment criteria.

Grapes bought from international food wholesaler Metro in Germany were shown to contain the fungicide 'procymidone' at double the Acute

Reference Dose (ARfD) established by the German Federal Institute for Risk Assessment and the World Health Organisation. Ingesting pesticides above the ARfD even once can be acutely damaging to the health of young children. Procymidone is officially recognised by the EU as a carcinogen and reproductive toxin, and has endocrine disrupting properties.

Six of the 124 grape samples (4.8%) contained pesticides at concentrations above EU maximum legal limits. These grapes were purchased from Auchan, Carrefour and ALDI in France, from Esselunga in Italy, and from *Großmarkt Hamburg* – the wholesale fruit and vegetable market in Hamburg, Germany.

Two samples of Italian-grown grapes contained the banned insecticide endosulfan. Use of endosulfan has been illegal since 31 December 2007 following the announcement of an EU-wide ban in 2005. Both samples of affected grapes were purchased from ALDI in France.

Comparison of grape samples purchased from supermarkets operating in more than one country found evidence of double standards. While none of the samples from Metro in Italy were assessed as 'Not Recommended', 60% of samples taken at Metro in Germany were rated 'red'. Similar differences were found between Lidl in Germany, Netherlands and France with zero red ratings and Lidl Italy with 40% and Hungary with 20% red ratings. Meanwhile ALDI's

stores in France were found to sell grapes that the retailer's own code of conduct would not permit for sale in Germany.

Pesticides included in the Greenpeace 'Pesticide Blacklist' were found in 115 grape samples (92.7%). These pesticides have particularly hazardous properties including links with cancer, infertility, nerve damage, disruptions to the hormonal system or mutagenic effects.

Imported grapes were on average more contaminated than those grown in the European Union. Over 50% of grapes grown in Turkey received the 'Not Recommended' classification, while fewer than 20% of samples from Greece and Spain were given this red rating. With 38% red ratings, grapes grown in Italy showed the worst contamination from the European producing countries.

## METHODOLOGY

Between 6 October and 16 October, staff from five environmental organizations purchased a total of 124 samples of table grapes from 18 supermarket chains and food wholesalers in Italy, France, the Netherlands, Hungary and Germany.

The organisations responsible for the purchases were Legambiente (Italy), MDRGF (France), Milieudefensie (Netherlands), Levego Munkacsoport (Hungary) and Greenpeace (Germany). The project was supported by Pesticide Action Network Europe (PAN Europe). Contact details for the various organisations can be found at the end of this background paper.

In each of the five countries of purchase, samples were bought in a number of regions or towns. Each sample consisted of a minimum of 1 kg of grapes.

## Food retailers included by country

		Samples	%
<b>Germany</b>	<b>Total</b>	<b>35</b>	<b>28.2</b>
Germany	Aldi (North)	3	2.4
	Aldi (South)	2	1.6
Germany	Edeka	5	4.0
	Großmarkt		
Germany	Hamburg	5	4.0
Germany	Lidl	5	4.0
	Metro		
Germany	(Kaufhof)	3	2.4
Germany	Metro (Real)	2	1.6
	REWE		
Germany	(Penny)	5	4.0
	Tengelmann/		
Germany	Kaiser's	5	4.0
<b>France</b>	<b>Total</b>	<b>25</b>	<b>20.2</b>
France	Aldi	5	4.0
France	Auchan	5	4.0
France	Carrefour	5	4.0
France	Intermarché	5	4.0
France	Lidl	5	4.0
<b>Italy</b>	<b>Total</b>	<b>24</b>	<b>15.3</b>
Italy	Carrefour	5	4.0
Italy	Coop	5	4.0
Italy	Esselunga	6	4.8
Italy	Lidl	5	4.0
Italy	Metro	3	2.4
<b>Netherlands</b>	<b>Total</b>	<b>35</b>	<b>24.2</b>
Netherlands	C1000	5	4.0
Netherlands	Coop	5	4.0
Netherlands	Lidl	5	4.0
	Super de		
Netherlands	Boer	5	4.0
Netherlands	Albert Heijn	5	4.0
Netherlands	Plus	5	4.0
Netherlands	Spar	5	4.0
<b>Hungary</b>	<b>Total</b>	<b>5</b>	<b>4.0</b>
Hungary	Lidl	5	4.0
<b>All countries</b>	<b>Total</b>	<b>124</b>	<b>100</b>

## Producer countries represented in the sample

All 124 samples of table grapes examined were grown under non-organic farming protocols. Most samples were from in Italy (62) or Greece (34). Turkey was the major non-EU country of origin.

Producer	Samples	%
Brazil	2	1.6
France	9	7.3
Greece	34	27.4
Italy	62	50.0
Spain	6	4.8
South Africa	1	0.8
Turkey	9	7.3
Unknown	1	0.8

## Laboratory Analysis

In October 2008 an accredited German laboratory specialising in pesticide residue analysis was commissioned by the six environmental organisations to test all the samples of grapes for approximately 300 different pesticide residues.

## The Greenpeace evaluation system

The Greenpeace evaluation system classifies food samples as being either 'Not Recommended' to consumers due to high levels of pesticides (red rating), 'Caution' contains pesticides (yellow rating), or 'Recommended' to consumers (green rating). The evaluation protocols assess the pesticides found in each food sample against maximum residue levels (MRLs), the Acute Reference Dose (ARfD), and the Acceptable Daily Intake (ADI), and takes account of multiple toxicant exposure and the special sensitivity of children.

## SUMMARY OF RESULTS

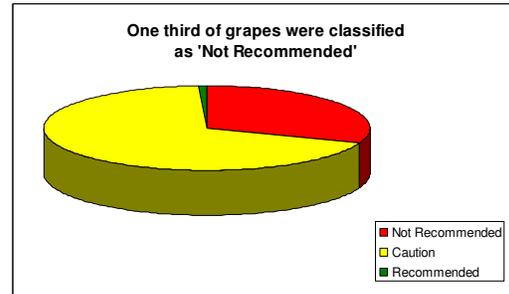
In total 123 grapes samples (99.2%) were found to contain pesticides. On average 6.5 pesticides were detected per sample. Twenty percent of grapes contained ten or more pesticides. One sample bought at Intermarché in France topped the list with 16 different pesticides.

The overall results using the Greenpeace evaluation system is as follows:

**Not Recommended:** 38 samples (30.7%)  
**Caution:** 85 samples (68.5%)  
**Recommended** 1 sample (0.8%)

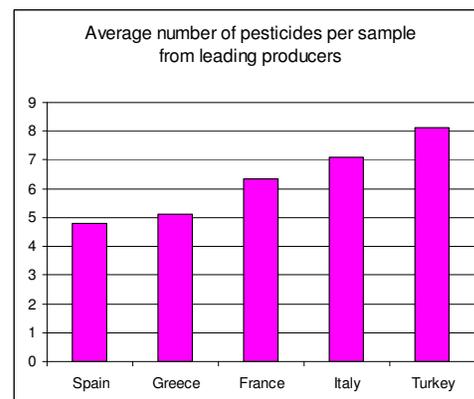
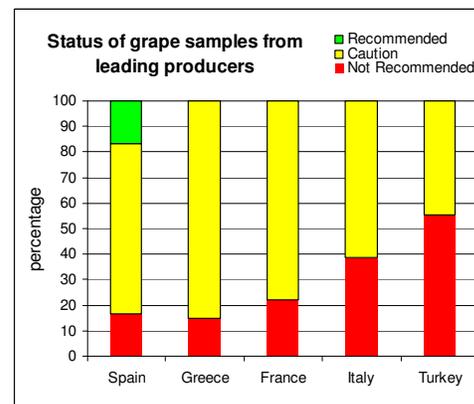
Only 1 sample of grapes could be given a green rating (Recommended) as they contained no pesticide residues or the residue levels were lower than 0.01 mg/kg (detection limit). 68.5% of the samples were given a yellow rating as they contained pesticide residues. 30.7% of the

samples contained high levels of residues and were given a red rating, i.e. classified as 'Not Recommended'.



## Country of origin

Imported grapes were on average more contaminated than those grown in the European Union. Over 50% of grapes grown in Turkey received the 'Not Recommended' classification, while fewer than 20% of samples from Greece and Spain were given this red rating. With 38% red ratings, grapes grown in Italy showed the worst contamination from the European producing countries. Grapes from Italy and Turkey also showed a higher number of pesticides per sample.



### Breach of Acute Reference Dose

One grape sample purchased at Metro in Germany exceeded the Acute Reference Dose (ARfD) established by the German Federal Institute for Risk Assessment (BfR)<sup>1</sup> and the World Health Organization. These grapes had been grown in Turkey.

The ARfD is defined as the maximum amount of pesticides that can be ingested within one day or in a typical meal. It is set by the WHO and the BfR respectively. To exceed the ARfD even just once can acutely damage human health, particularly the health of children. Therefore, breaches of the ARfD must absolutely be avoided.

The exhaustion of the Acute Reference Dose was calculated on the basis of a standardized intake of 211.5 g by a child weighing 16.15 kg. These are the values used by the European Food Safety Authority (ESFA) and in Germany by the Federal Institute for Risk Assessment (BfR) to calculate the ARfD.

### Breaches of maximum residue levels

Six of the 124 grape samples (4.8%) contained pesticides at concentrations above EU maximum legal limits. These grapes were purchased from Auchan, Carrefour and ALDI in France, from Esselunga in Italy, and from *Großmarkt Hamburg* – the wholesale fruit and vegetable market in Hamburg, Germany.

### Pesticides above legal limits

Retailer	Pesticide	Hazard	% MRL
ALDI (FR)	Fenitrothion	neurotoxin	5,900
ALDI (FR)	Fenitrothion	neurotoxin	3,900
Auchan (FR)	Fenitrothion	neurotoxin	3,800
Carrefour (FR)	Folpet	carcinogen	120
Großmarkt, Hamburg (DE)	Imazalil	likely carcinogen	430
Esselunga (IT)	acrinathrin	unclassified	380

### Unauthorised pesticides

Two samples of Italian-grown grapes contained the banned insecticide

endosulfan. Use of endosulfan has been illegal since 31 December 2007 following the announcement of an EU-wide ban in 2005. Both samples of affected grapes were purchased from ALDI in France.

### New EU food standards

On 1 September 2008 the European Union introduced new legislation which substantially increased many of the maximum residue limits (MRLs) for food products sold in the EU.<sup>2</sup> The results detailed above provide the first opportunity to assess the impacts of new EU MRLs within the context of an independent food monitoring initiative. While only six samples of grapes breached MRLs at the time of purchase in October 2008, 37 samples would have exceeded legal limits had the grapes been purchased in 2005. These figures demonstrate the dramatic relaxation in EU food standards witnessed in recent years.

## RECOMMENDATIONS

Consumers have a right to pesticide free foods. Retailers, politicians and regulators have a social responsibility to work towards this goal.

### Supermarkets should...

In the immediate term, supermarkets should eliminate the most hazardous pesticides from use in food production and avoid the contamination of food items with multiple pesticides residues. Supermarkets should also make a long term commitment to eliminate all other pesticides from fruits and vegetables in less than 10 years by introducing more stringent and transparent pesticide policies.

### Governments should...

The EU and member state governments must ensure that highly hazardous pesticides such as carcinogenic, mutagenic, reprotoxic, neurotoxic, immunotoxic or endocrine disrupting substances are not authorised for use in food production. Pesticides that can not be monitored

using routine laboratory analysis should also not be authorised. EU states should publish the full results of national residue monitoring programmes including the names of producers and supermarkets. All national governments should adopt pesticide use reduction programmes aimed at cutting pesticide use by 50% over the next ten years.

## CONTACTS

- Greenpeace e.V. (Germany)  
**Manfred Krautter**  
+49 (0) 40 30 618 358  
[Manfred.Krautter@Greenpeace.de](mailto:Manfred.Krautter@Greenpeace.de)  
[www.greenpeace.de/pestizide](http://www.greenpeace.de/pestizide)
- Legambiente (Italy)  
**Davide Sabbadin**  
+39 (0)498 56 12 20  
[d.sabbadin@legambienteagricoltura.it](mailto:d.sabbadin@legambienteagricoltura.it)  
[www.legambiente.eu](http://www.legambiente.eu)
- Levego Munkacsoport (Hungary)  
**János Pál**  
+36 (0)1 411 05 09  
[janos@levego.hu](mailto:janos@levego.hu)  
[www.levego.hu](http://www.levego.hu)
- MDRGF (France)  
**François Veillerette**  
+33 (0) 1 45 79 07 59  
[mdrgf@wanadoo.fr](mailto:mdrgf@wanadoo.fr)  
[www.mdrgf.org](http://www.mdrgf.org)
- Milieudéfensie (Netherlands)  
**René Houkema**  
+31-(0) 20 550 7378  
[rene.houkema@milieudéfensie.nl](mailto:rene.houkema@milieudéfensie.nl)  
[www.milieudéfensie.nl](http://www.milieudéfensie.nl)
- Pesticide Action Network (Europe)  
**Elliott Cannell**  
+44 (0) 20 7065 0920  
[elliott@pan-europe.info](mailto:elliott@pan-europe.info)  
[www.pan-europe.info](http://www.pan-europe.info)

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<sup>1</sup>[www.bfr.bund.de/cm/218/zusammenhang\\_zwischen\\_rueckstands\\_hoehstmengen\\_fuer\\_pflanzenschutzmittel\\_in\\_lebensmitteln\\_und\\_akutem\\_risiko.pdf](http://www.bfr.bund.de/cm/218/zusammenhang_zwischen_rueckstands_hoehstmengen_fuer_pflanzenschutzmittel_in_lebensmitteln_und_akutem_risiko.pdf)

<sup>2</sup> PAN Europe: 'New standards on pesticides violate food safety' – 28 August 2008