Issue 2013

monitoringreport

A Publication of QS Fachgesellschaft Obst-Gemüse-Kartoffeln GmbH and DFHV Deutscher Fruchthandelsverband e.V.

opinion

More Transparency for Consumers

The Federation of German Consumer Organisations (Verbraucherzentrale Bundesverband, vzbv) has welcomed the initiative from QS Qualität und Sicherheit GmbH and the German Fruit Trade Association (Deutscher Fruchthandelsverband e.V., DFHV) to achieve lower levels of pesticide residue and even safer fruit and vegetables. This is no easy task in the face of increasingly long supply chains and the global nature of the fruit and vegetable market. It is therefore even more impressive that the 2013 monitoringreport reflects a trend towards lower residues of plant protection products in fruit and vegetables. This is confirmed by the analysis results of the official inspection authorities in the German federal states, which are published yearly by the German Federal Office of Consumer Protection and Food Safety (Bundesamt für Verbraucherschutz und Lebensmittelsicherheit, BVL).

A great deal has already been achieved, but limit values for authorised maximum levels are still being exceeded. We feel it is very positive that QS and DFHV are involved in the work group "Plant protection product residues in food" of the BVL. This makes use of synergies between state and commercial inspections.

This collaboration is a positive step and should be expanded upon. It is important to improve transparency for consumers. German federal states such as North Rhine-Westphalia and Saxony demonstrate what initial steps in this direction may look like with their pesticide reports. But these individual cases are not sufficient. We need nationwide standards for consumer information. The consumer information law and the new regulations in Section 40 of the German Feed and Food Code (Lebens- und Futtermittelgesetzbuch, LFGB) outline options for the provision of information to consumers about important product properties. In the future, the federal states should implement these measures in a uniform manner – and they must now work together to develop concrete plans for this.

Gerd Billen
Executive Director of the Federation of German Consumer Organisations

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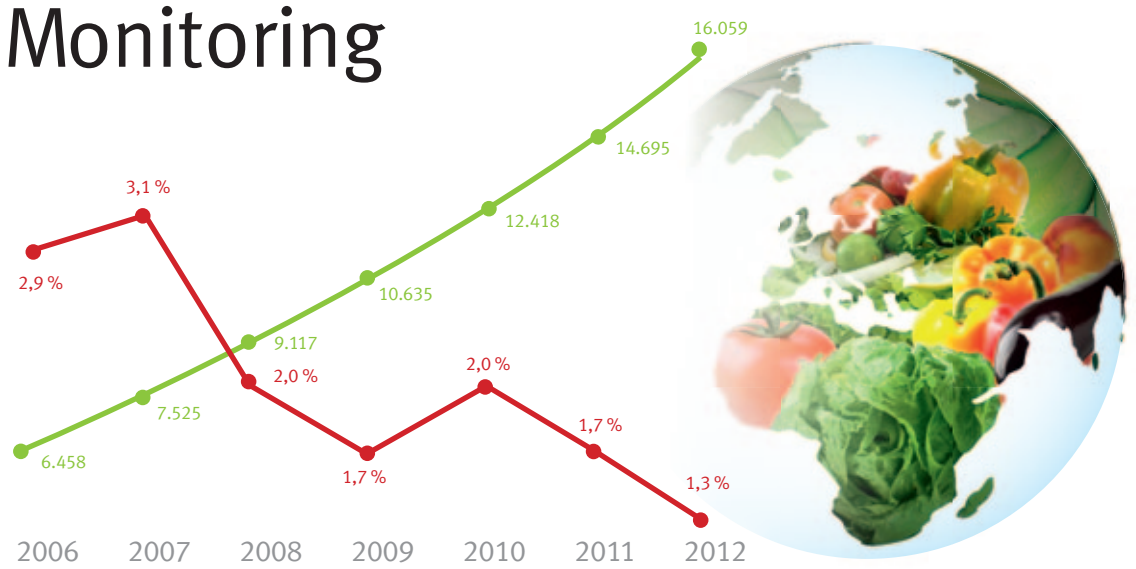
Tradition of Residue Monitoring



For the 2013 monitoringreport, QS and DFHV evaluated their residue monitoring programs together for the fourth time. Since the third time famously marks the beginning of a tradition, it's time for our first look back.

Since 2005, residue inspections of the economic partners involved have been recorded in DFHV's *4fresh* database and in the residue monitoring module of the QS database. The residue load in fruit and vegetables has decreased considerably since that time, as confirmed by concrete figures based on the cooperative evaluation of the two databases. These figures illustrate the effectiveness of the measures taken by the economic partners.

77,000 Samples in Seven Years

In the period from 2006 to 2012, approximately 77,000 samples from nationally and internationally traded products were recorded in the DFHV and QS databases. The fact that the annual number of samples more than doubled in this time shows that participation in a residue monitoring program is now standard for companies in the fruit and vegetable sector. Despite the greatly increased number of samples, the complaint rate has gone in the opposite direction: it stood at 2.9 percent in 2006, but more than halved to 1.3 percent in the following years. Today, this figure remains at a constant low level.

2012: Joint Evaluation of 16,059 Samples from 66 Countries

The trend outlined above was confirmed by the 2013 monitoringreport: 40 percent of the samples analysed in 2012 did not contain any detectable residues. As in 2011, the proportion of samples in which the maximum residue level was exceeded stood at a low 0.9 percent for products of European origin. The fact that the complaint rate for goods from third countries fell by 0.4 percent year on year to 2.8 percent is encouraging.

Overall, 16,059 samples were analysed and recorded in the *4fresh* database and the residue database of the QS scheme between 1st November 2011 and 31st October 2012. The samples came from 66 countries, with the majority of the sampled goods (83 percent) coming from Europe, namely Germany, Spain, Belgium and Italy. Most of the samples from outside Europe were taken in Chile, Ecuador and South Africa. The most frequently tested product groups were lettuce and other leafy vegetables with just under 14 percent, followed by stone fruits with 12.8 percent and fruit vegetables such as tomatoes and peppers with 11.5 percent.

On the following pages, you will learn more about the residue situation in bananas, carrots, plums and rocket.

News in Brief

QAC – Industry Pulling Together

At present, temporary maximum residue levels of 0.5 mg/kg in food apply to the active substances benzalkonium chloride (BAC) and didecyldimethylammonium chloride (DDAC). In order to verify these values and allow for a final ruling in Regulation (EU) 396/2005, the European Commission has requested that industry and official inspections collect further analysis results. QS and DFHV are organising the data collection on behalf of their scheme participants and member companies.

By summer 2012, the two organisations had already compiled more than 800 analysis results and forwarded them to the authorities in anonymised form. This data formed the basis for the health-related evaluation of BAC and DDAC by the German Federal Institute for Risk Assessment (Bundesinstitut für Risikobewertung, BfR) and the subsequent definition of temporary maximum levels by the EU.

Prior to the definition of specific maximum residue levels, a legal maximum level of 0.01 mg/kg applied to the active substances BAC and DDAC due to the so-called lowest collection level of Regulation (EU) 396/2005. As a consequence of frequent residue findings, a large amount of fruit and vegetable produce was assessed as unsuitable for sale and was not permitted to be traded on the market. As the BfR confirmed in its report, the residue values detected would not have presented any health risks.

Number of Samples per Country

EUROPE	**13,311**
Austria	89
Belarus	2
Belgium	1,297
Bosnia-Herzegovina	1
Bulgaria	1
Cyprus	2
Czech Republic	1
Denmark	1
France	195
Germany	8,081
Great Britain	4
Greece	88
Hungary	29
Italy	1,031
Lithuania	2
Macedonia	3
Netherlands	887
Poland	32
Portugal	50
Romania	1
Spain	1,513
Switzerland	1
AFRICA	**687**
Burkina Faso	5
Egypt	170
Ghana	2
Ivory Coast	15
Kenya	13
Madagascar	2
Mali	4
Mauritius	2
Morocco	82
Namibia	12
Senegal	12
South Africa	363
Swaziland	3
Tunisia	2
ASIA/PACIFIC	**501**
Australia	10
China	80
Democratic People's Republic of Korea	1
Guinea	1
India	90
Israel	106
Malaysia	9
New Zealand	68
Russia	1
Saudi Arabia	1
Thailand	12
Turkey	121
Vietnam	1
NORTH/SOUTH AMERICA	**1.560**
Argentina	87
Bolivia	1
Brazil	235
Canada	1
Chile	407
Columbia	108
Costa Rica	142
Dominican Republic	5
Ecuador	384
Guatemala	1
Honduras	4
Mexico	26
Panama	5
Peru	123
Puerto Rico	4
Uruguay	16
USA	11
Total	**16.059**

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Plums

Top of the Class in Stone Fruit

Over 2,000 different types of plum are available. They differ with respect to size, shape and colour, among other aspects. The 263 samples which were tested between 1st November 2011 and 31st October 2012 were of the types Damask, Mirabelle and Greengage. Apart from two Hungarian and one French sample, all samples were taken in Germany.

At present, the plum is the least contaminated stone fruit. This was confirmed by the exemplary results of the QS residue monitoring programme: in 57 percent of the samples, no residue at all was found. A quarter of the samples with residues contained only one active substance, a further 17 percent contained two or three active substances, and only two samples contained four and seven active substances respectively.*

Only one sample containing the active substance dithianon, which is not approved for plums, gave cause for concern. Individual authorisation was in place for each of the five samples containing captan. In almost half of the samples, the detected active substances stood at 10 percent or less of the permitted maximum residue levels. Between 80 and 100 percent of the maximum level was present in just two samples. The legal maximum levels were not exceeded in any of the cases.

A total of 21 different active substances were analysed. The ten most frequently found active substances made up 79 percent of all findings. In addition to the fungicides boscalid, myclobutanil, dithiocarbamate and fenhexamid, common active substances included the insecticides thiacloprid and pirimicarb, as well as spirodiclofen from the acaracide group.

* The measured value was assessed without consideration of the measurement uncertainty of +/-50%

Rocket

Green Light for the Fashionable Vegetable

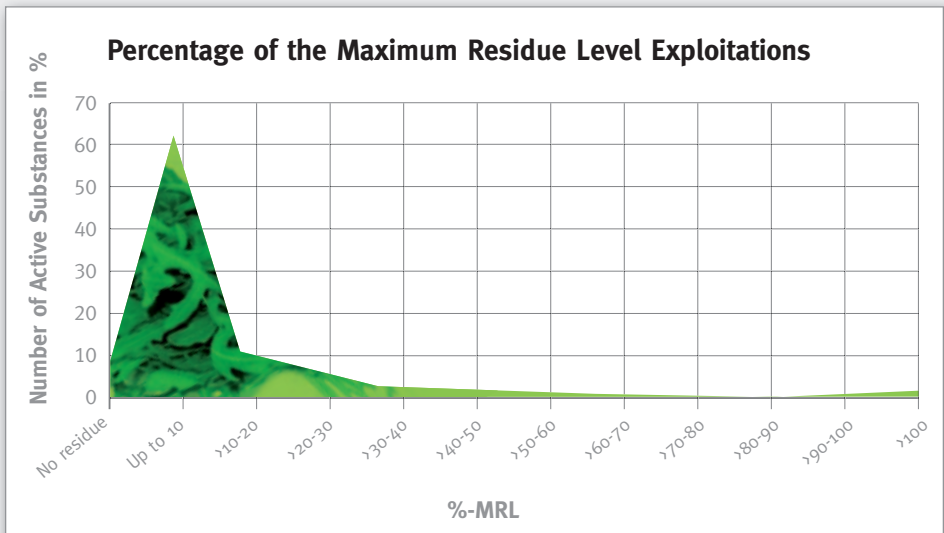
With many names, including salad rocket, roquette, rucola, colewort and arugula, this salad vegetable has been around since the middle ages but has become increasingly popular in recent years. During the period analysed, DFHV and QS evaluated a total of 122 samples. The significant majority of these came from Germany and Italy (45 percent from each country).

20 percent of the samples were completely free of detectable residues. Most of the samples with residues (71 percent) contained between one and five active substances, although more than ten active substances were found in four samples. This works out at an average of 2.9 active substances per sample.*

49 different active substances were found overall. These were primarily fungicides such as propamocarb, dimethomorph and boscalid. On average, the active substances found were at 13 percent of the legally prescribed maximum residue levels. The limits were exceeded in seven samples. The complaint rate was therefore 5.7 percent.

Nitrate

Leafy and root vegetables such as lettuce and spinach tend to be enriched with nitrate. For this reason, a statutory maximum level of nitrate in rocket was defined with effect from 1st April 2012. Compliance with this has been checked in a total of 99 samples – all but two of which came from Germany and Italy – since this time. As the nitrate level is influenced by different light conditions, the legal maximum level varies between 6000 mg/kg in the summer season and 7000 mg/kg in the winter months. In summer, the average nitrate content was 55 percent of the maximum level. The values of most samples



were between 50 and 80 percent. In winter, the average nitrate content was 79 percent of the maximum level. Eleven of the samples taken in the winter season exceeded the maximum winter level. This did not lead to complaint however, as the samples were taken before the maximum level was set.

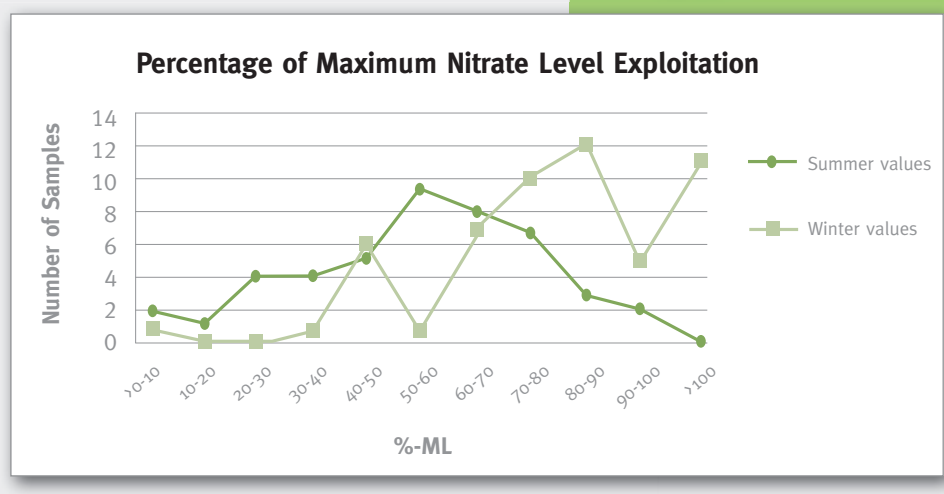
* The measured value was assessed without consideration of the measurement uncertainty of +/-50%

MAXIMUM LEVELS

for rocket according to Regulation (EU) 1881/2006

Harvest 1st October – 31st March: 7000 mg/kg

Harvest 1st April – 30th September: 6000 mg/kg



Question Time

On 2nd December 2011, the Regulation (EU) 1881/2006 was changed. It regulates the maximum levels of nitrate in food, among other things. For the first time, this regulation specified maximum nitrate levels for rocket to come into force on 1st April 2012.

Interview with **Rien Simonse**, Food Safety Manager at The Greenery in the Netherlands and member of the scientific advisory body for QS residue monitoring.

Why was it necessary to revise the maximum nitrate levels and to define a limit value for rocket?

EU regulations are regularly revised and adapted to the current situation. When the maximum nitrate levels were last defined, the discussion on the positive effects of nitrate consumption certainly contributed to the fact that a little more leeway was allowed for lettuce. On the other hand, rocket was included for the first time because this product has become very popular in a short space of time and has become a more significant part of our diet. That is why it made sense to set a maximum level.

What consequences are there if nitrate levels are not adhered to?

The trading organisations in northern Europe test all products covered by the EU Nitrate Regulation. Some products are sampled in the trade chain, but the majority of the samples are taken before the harvest. If the results of such a pre-harvest sample exceed the defined maximum levels, a ban on harvesting is issued. This ban applies until a subsequent sample proves that maximum levels are being adhered to. It often happens that the nitrate content decreases after a certain amount of time. In particular when the weather improves and the sun comes out, the nitrate

Carrots

Everything Tip Top

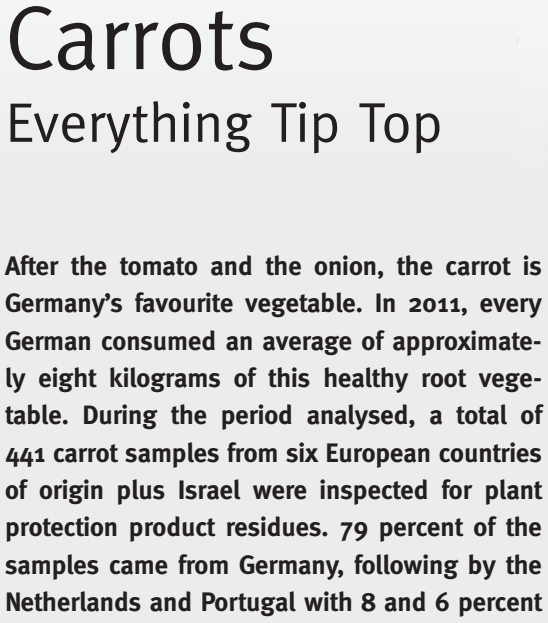
After the tomato and the onion, the carrot is Germany's favourite vegetable. In 2011, every German consumed an average of approximately eight kilograms of this healthy root vegetable. During the period analysed, a total of 441 carrot samples from six European countries of origin plus Israel were inspected for plant protection product residues. 79 percent of the samples came from Germany, following by the Netherlands and Portugal with 8 and 6 percent respectively and Israel with 3 percent.

Almost half of the samples were residue-free. 55 percent of the samples contained detectable plant protection product residues. Most of these contained one or at most two different active substances. Two samples from Germany raised concerns because the legal maximum levels of linuron and dimethoate/omethoate were exceeded.

81 percent of the identified active substances were attributed to the fungicides boscalid, azoxystrobin and difenoconazole, as well as the two herbicides pendimethalin and linuron. A total of 26 active substances were found, but half of these were only detected once or twice.

8 active substances were found in one German and one Dutch bunched carrot sample. One other German sample contained 5 active substances. Active Substances tend to be found more frequently in bunched carrots than in washed carrots, because these are sold with leaves, unlike washed carrots.

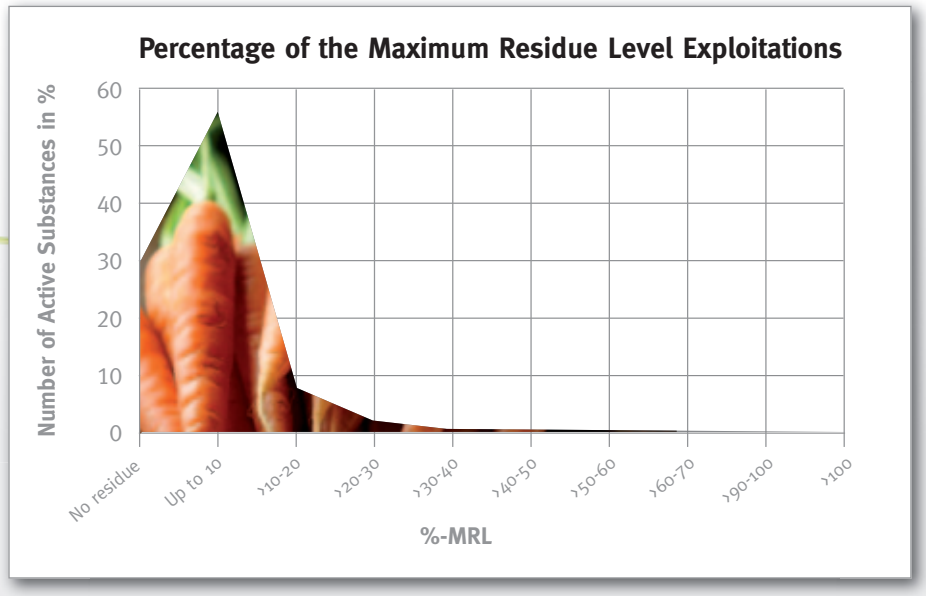
For 65 percent of the detected active substances, the percentage of the maximum residue level present was under 20 percent per substance. On average, 9.7 percent of the maximum residue level was present.

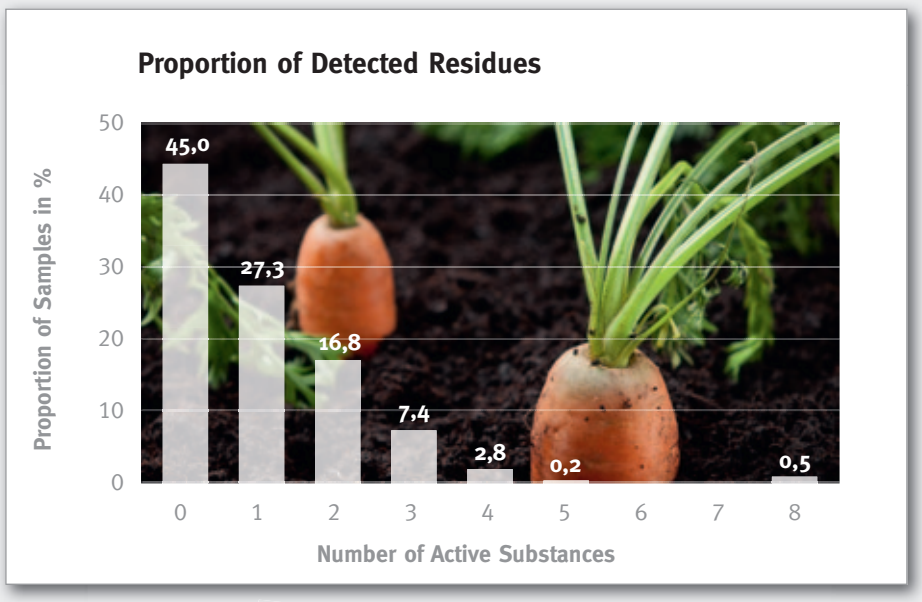


content can decrease relatively quickly. It rarely happens that a product has to be destroyed because of excessive nitrate.

The topic of nitrate in vegetables and possible effects on health is the subject of controversial debate. Can you predict any future trends for the defined maximum levels?

The future of defined maximum levels does not depend on this debate, and rightly so. Action should be based on the law and not influenced by scientific or political opinions. The result of this debate, which has been on-going for some time, will of course be taken into consideration if the current regulation is revised again in the next few years. If the positive effects of nitrate receive more widespread acceptance and recognition, it is possible that the current maximum levels may be "relaxed".





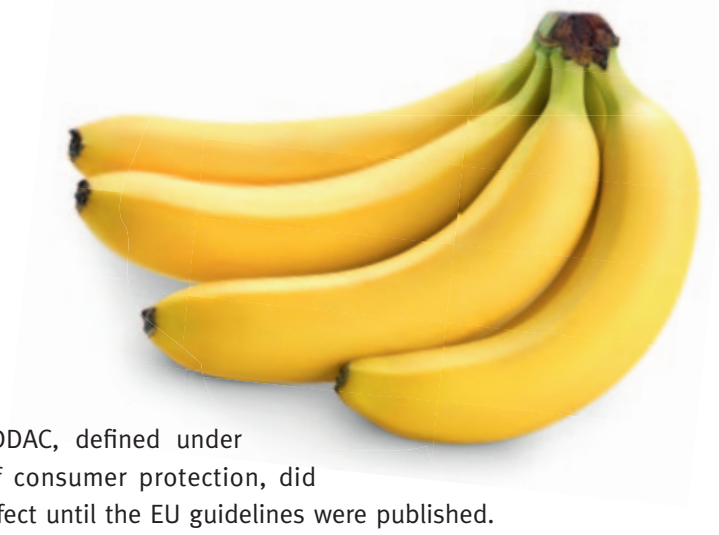
Bananas

Not a Crooked Deal

Between 1st November 2011 and 31st October 2012, 490 banana samples were tested for plant protection product residue in the DFHV *4fresh* monitoring programme. This means that bananas were in 7th place in the top ten most frequently tested products. More than three quarters of the samples (and almost 100 percent of the organic samples) were taken in Ecuador, followed by Columbia and Costa Rica. Almost half of the samples were taken from organically grown bananas.

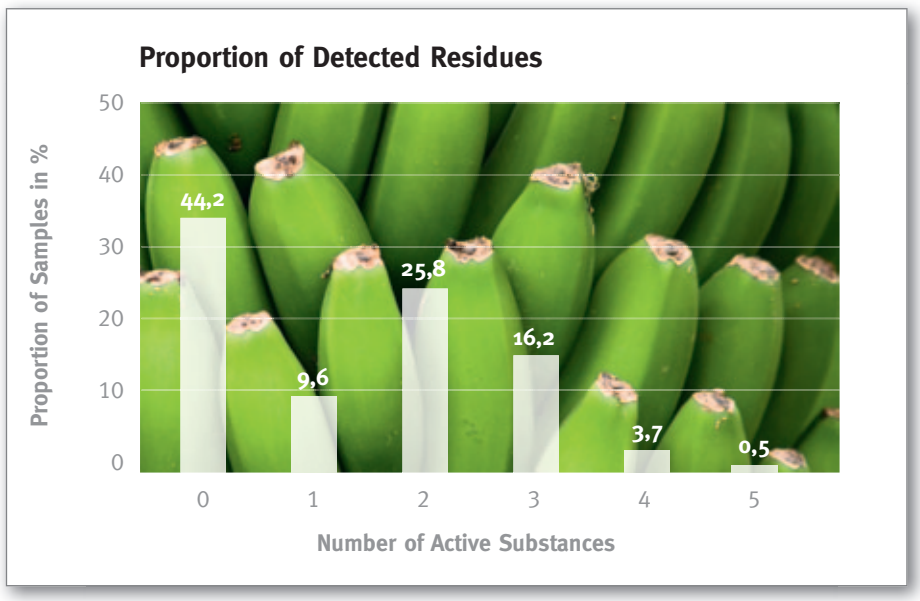
A closer look at the residue findings paints an encouraging picture: 44 percent of the samples did not contain any residues, a further 10 percent contained only one active substance, and two active substances were detected in a further 26 percent. Over 80 percent of organically grown bananas were free from any detectable residues at all. A maximum of two active substances were found in these bananas (in 1 percent of the samples).

In 2010 and 2011, none of the tested bananas contained inadmissible levels of the active substances in question. However, due to the QAC problem, six samples were rejected in the latest inspection period. These can be attributed exclusively to the detection of DDAC – due to cross-contamination from the use of disinfectants. Four organic samples from Ecuador and two conventionally cultivated samples from Ecuador and Peru were affected by this. None of the cases represented a risk to the health of consumers. Because the samples were taken prior to July 2012, the lowest collection level of 0.01 mg/kg specified by Regulation (EU) 396/2005 still applied as the maximum residue level. The temporary maximum residue level of 0.5 mg/kg for DDAC, defined under consideration of consumer protection, did not come into effect until the EU guidelines were published.



The total proportion exceeding maximum levels was a low 1.2 percent. In 94 percent of all analysis results, the active substance contents were well below the limits and reached less than 20 percent of the respective defined maximum residue level.

On average, the tested samples contained 1.9 active substances. The most frequently detected of these were imazalil and thiabendazole, which are used as fungicides for combatting harmful fungi. Bifenthrin und chlorpyrifos were primarily used to prevent insect infestation. The most frequent active substances found in the organic samples included bifenthrin, DDAC and fenpropimorph, which is also a fungicide.



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QS

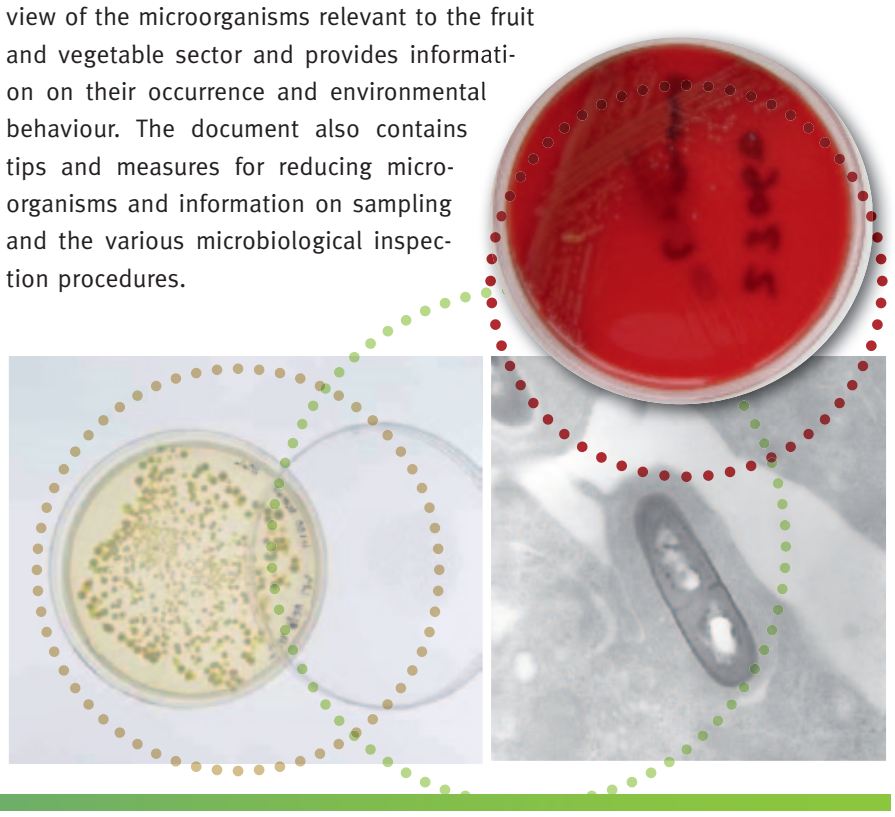
Microbiological Monitoring – No Chance for Germs and Bacteria

As of January 2012, QS-certified producers of fresh-cut salads and other processed fruit and vegetable products are obliged to carry out microbiological monitoring. The central acquisition and evaluation of the analysis results is to provide additional insight into the causes of microbiological contamination and highlight potential areas for improvement.

Because of the many cut surfaces involved, processed fruit and vegetables are particularly susceptible to microbiological contamination. In addition, reduction of germs due to cooking processes does not take place. For these reasons, it is especially important to check for the presence of pathogenic microorganisms and avoid this as far as possible. In order to guarantee the safety of processed fruit and vegetable products with respect to microbiological criteria, the Guideline Preparation was introduced on 1st January 2012. In addition to specific hygiene requirements for preparation processes, employees and product packaging, it obliges scheme participants to subject their products and plants to regular microbiological inspections.

In addition to documentation at the company level, the analysis results of the product inspections are also to be recorded in a central location. QS has set up a database module for this purpose. Within the first half of 2013, the scheme participants and the laboratories approved for microbiological inspections in the QS scheme will begin with the data input. With the central evaluation of analysis data, it is hoped that new knowledge will be gained on the causes of microbiological contamination and critical products will be identified. This enables fast and comprehensive information to be obtained on new developments and specific risks. In potential crisis scenarios, an overview of the actual situation is possible within a very short time. Furthermore, the knowledge gained will be used to review the risk orientation of the inspection plan. This plan defines the minimum frequency for inspections of processed fruit and vegetables and the minimum parameters used for the inspections. Depending on the specific product features and previous analysis results, a higher sampling frequency may need to be selected for individual companies.

The newly published supporting document Microbiology provides help for scheme participants in the implementation of the requirements outlined in the Guideline Preparation. The document gives producers of processed products an overview of the microorganisms relevant to the fruit and vegetable sector and provides information on their occurrence and environmental behaviour. The document also contains tips and measures for reducing microorganisms and information on sampling and the various microbiological inspection procedures.



DFHV

DFHV + PCF: Logistics Hub for Premium Goods at Frankfurt Airport

Most fruit and vegetables come to Germany by land or by sea. However, air transport is indispensable for high-price and perishable premium goods. Frankfurt Airport is an important hub for these products.

30 participants attended an event by DFHV and the Perishable Centre Frankfurt (PCF) to learn first-hand about logistics, fast handling procedures within just a few hours, quality assurance and quality inspections. Authorities represented at the event (Federal Office for Agriculture and Food (BLE), Hesse State Laboratory and Hesse Plant Protection Service) were on hand to answer questions about EU border entry checks. DHL Global Forwarding gave an insight into logistical challenges in South America, while the Nagel Airfreight company provided information on the bundling of extremely small produce lots for wholesale markets. Afterwards, during a tour of the PCF, participants had the opportunity to following handling procedures from incoming goods to customs clearance, product-specific storage and consignment, all the way to the loading process.

DFHV Seminars

Dates 2013

14. February	Quality and Incoming Goods Inspections, Specialist Seminar (Basic), Bonn
15./16. March	Merchandise Knowledge in the Fruit and Vegetable Sector, Trainee Seminar, Bonn
21. March	Risk Prevention, Specialist Seminar, (Advanced), Bonn
17. April	Carbon Footprint – Paths Through the Climate Protection Jungle, Specialist Seminar (Advanced), Bonn
23. April	Fresh-Cut Fruit and Vegetable Products, Specialist Seminar (Advanced), Bonn
13. May	Maritime Fruit Transport incl. Visit to a Container Ship, Specialist Seminar (Basic), Hamburg Port
11. June	Quality and Incoming Goods Inspections, Specialist Seminar (Basic), Bonn
6./7. September	Merchandise Knowledge in the Fruit and Vegetable Sector, Trainee Seminar, Bonn
12. September	Sensor System Training, Fruit and Vegetables, Specialist Seminar (Basic), Bonn
23.–27. September 7.–11. October	Fruit Trader Seminar, Week 1, Bonn Fruit Trader Seminar, Week 2, Bonn
23. October	Media Training – Confidence in Front of the Camera and Microphone, Specialist Seminar (Advanced), Bonn
November	Background Information on Residues, Specialist Seminar (Advanced), Bonn
13. November	Quality and Incoming Goods Inspections, Specialist Seminar (Basic), Bonn

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Responsible for Contents:

DFHV Deutscher
Fruchthandelsverband e.V.
Bergweg 6
53225 Bonn · Germany
Dr. Andreas Brügger
Phone +49 228 91145-0
Internet www.dfhv.de

QS Qualität und
Sicherheit GmbH
Schedestraße 1-3
53113 Bonn · Germany
Dr. Hermann-Josef Nienhoff
Phone +49 228 35068-0
Internet www.q-s.de