

## opinion

### PLANT PROTECTION IS A SUSTAINABLE TASK

The term 'pesticide' keeps rising up like a spectre among the general public. Substances that no one wants to eat. The media, as well as environmental and consumer associations, have taken this topic to the consumer, and rightly so in my opinion. Unfortunately, the mistrust of the public remains to this day, as a recent study by the Rheinischer Landwirtschafts-Verband (Rhenish Agricultural Association) showed: three quarters of all consumers are concerned about plant protection product residues in agricultural products. However, producers and traders have responded to this problem by taking a comprehensive approach in recent years. Today, quality assurance systems belong to the delivery prerequisites and the quality departments in the wholesale and retail trade are very concerned with fruit and vegetables. Nowadays, detailed specifications for plant protection products not only serve to protect plants, they also help to protect the environment and the consumer to a much greater extent than they did ten years ago. The results of these efforts are visible too: residue contamination has been massively reduced and there has been a sharp decline in the exploitation of maximum permitted quantities.

The joint commitment of the Deutscher Fruchthandelsverband e.V. (German fruit trade association) and QS Qualität und Sicherheit GmbH to evaluate their data together is to be welcomed. Already in its third year, this shared data pool provides a good cross-sector overview of the residue situation in products traded nationally and internationally.

This overview heightens awareness of problem areas and shows the latest trends. It is encouraging that a positive development can be seen once again this year in the report. This should provide an incentive for the entire sector, since



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there will be no reduction in demands. In doing so, we should perceive consumers' desire for trustworthy products as an opportunity.

## Joint Evaluation:

### 13,721 SAMPLES FROM 74 COUNTRIES



### DFHV AND QS KEEPING AN EYE ON THE RESIDUE SITUATION WITH INTERNATIONAL FLOW OF GOODS

#### 13,721 SAMPLES FROM 74 COUNTRIES A JOINT EVALUATION

**Fruit and vegetables are healthy. And regionalism is the latest trend. In light of the great variety of fresh fruit and vegetables, however, we are more than willing to take a look beyond our own domestic products. Germany is a country of import and will remain so. Only 18 percent of the fresh fruit we consume comes from Germany, however, but regarding fresh vegetables this figure rises to 48 percent. The rest has to be imported.**

One fundamental requirement always remains, however, irrespective of the origin: fruit and vegetables have to be safe. That is why QS and DFHV are also keeping an eye on the residue situation with international flows of goods in the monitoring report 2012.

This report is a forum in which the latest results of the QS and *4fresh* residue monitoring systems flow together. DFHV and QS have evaluated the results of 13,721 samples examined in the period from 1 November 2010 to 31 October 2011. They originate from a total of 74 different countries, with main emphasis on European products which made up roughly 80 percent of the samples. 11 percent came from North and South America, 6 percent from Africa and 3 percent from the Asia-Pacific region. The countries with the most analyzed samples were Germany, Spain, the Netherlands, Italy, South Africa and Chile.

The largest percentage of product samples consisted of pome fruit with almost 14 percent, fruit vegetables with 12 percent, leafy vegetables with 9 percent and exotic varieties with 8 percent. The TOP TEN tested products comprised apples, table grapes, potatoes, tomatoes, strawberries, bell peppers, bananas, carrots, plums and pears. The pear samples, for example, come from nine different countries, mainly South Africa, Italy, Germany, Chile and Belgium. The strawberry samples come from ten countries, first and foremost Germany, followed by Spain.

Focusing on the residue situation and above all on compliance with the maximum legally permitted concentrations, the evaluation confirms the trend that was first shown by the food safety report of the Federal Office for Consumer Protection and Food Safety (BVL) for 2010. As in previous years, the percentage of samples of EU origin with residue levels that exceeded the maximum limits (0.9 percent) was lower than those from third countries (3.2 percent).

In this issue of the monitoring report you can read the detailed results on the residue situation of lemons, tomatoes, shrub berry fruits and cucumbers.

#### Number of samples per country

EUROPE	11,027
Belarus	4
Belgium	224
Bosnia/Herzegovina	1
Cyprus	1
Czech Republic	4
Denmark	3
France	143
Germany	7,021
Greece	121
Hungary	16
Italy	902
Latvia	1
Lithuania	1
Republic of Macedonia	2
Netherlands	929
New Zealand	84
Poland	30
Portugal	36
Serbia/Montenegro	2
Spain	1,376
Sri Lanka	1
Switzerland	3
Turkey	117
United Kingdom	5

#### THIRD COUNTRIES 2,694

Argentina	108
Aruba	1
Australia	9
Austria	107
Bahamas	1
Bolivia	2
Brazil	189
Burkina Faso	1
Cameroon	1
Canada	1
Central African Republic	1
Chile	418
China	38
Columbia	182
Costa Rica	182
Dominican Republic	37
Ecuador	246
Egypt	133
Ethiopia	5
Gambia	1
Ghana	5
Guatemala	1
Republic of Guinea	1
Honduras	2
India	32
Iran	7
Israel	153
Ivory Coast	27
Kenya	5
Madagascar	42
Malaysia	8
Mali	7
Mexico	25
Morocco	97
Mozambique	1
Namibia	13
Nicaragua	4
Panama	2
Peru	72
Puerto Rico	10
Russian Federation	5
Senegal	13
Republic of South Africa	458
Swaziland	2
Thailand	4
Tunisia	2
Uruguay	15
USA	4
U.S. Minor Outlying Islands	1
Zimbabwe	13

**Total 13,721**

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## Breaking News

### RUSSIA DOES AWAY WITH SAFETY CERTIFICATES

Since October 2011, safety certificates have no longer been required for the export of all plant-based products to Russia. The reason for this is that, because of the negotiations on Russia's planned entry to the WTO, the Russian Federation (RF) has amended the laws accordingly.

The EU is involved in intensive negotiations with Russia in order to speed up the harmonization of the restrictive

Russian maximum residue levels with EU standards. To this end, the EU has prepared so-called priority lists in which the active substance/product combinations to be given priority treatment are listed, including apples, citrus fruits, pears, strawberries, tomatoes and aubergines. This "3rd priority list" must now be commented upon by the EU member states prior to the next round of negotiations with the RF.





## Lemons:

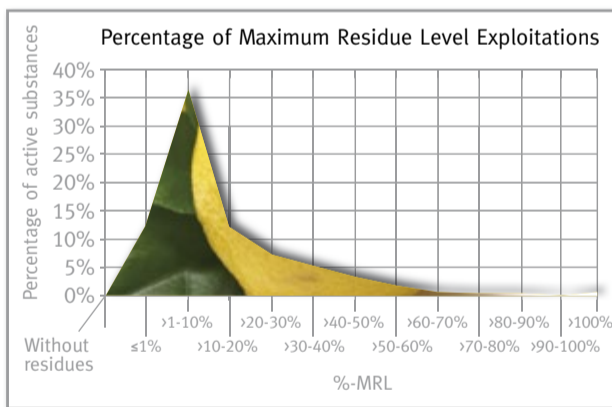
These results are not a bitter pill to swallow

Between 1 November 2010 and 31 October 2011, a total of 222 lemon samples were tested for plant protection product residues in the DFHV's 4fresh monitoring programme, a good third of which were organic products.

A pleasing overall result can be seen with conventional produce: no plant protection product residue of any kind could be detected in half of the EU produce and a total of 42 percent of all samples examined. An additional 25 percent contained only one to two active substances.

The sampled products came from ten different countries of origin, including 75 percent from the EU, mainly Spain (92 samples) and Italy (74 samples). The third country produce consisted of lemons from Argentina, Bolivia, Chile, South Africa, Turkey and Uruguay.

The lowest rate of excess of 0.6 percent was achieved by products from Europe. On average, the samples contained 1.6 active substances. On top of this, in over 64 percent of all test results, the maximum residue levels

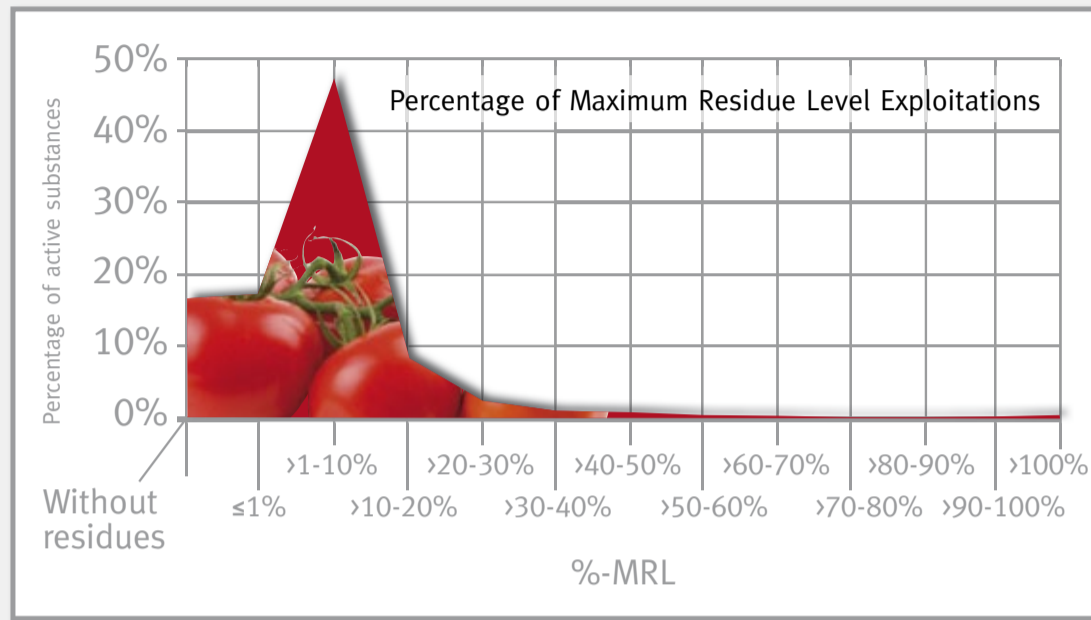


were only exploited to less than 20 percent. Only three samples gave reason for complaint, one of them from Spain where the maximum residue level for imazalil was exceeded, one from Argentina (2,4-D) and one from Turkey (bromopropylate). The fungicide imazalil is used as a surface treatment agent to prevent the formation of mould. When testing for this active substance, the concentration in the entire fruit, including the skin, must always be determined, even though only the edible flesh of the fruit is consumed. Overall, the rate of excess was a modest 1.4 percent, which represents a considerable improvement over the previous year where the residue situation in lemons is concerned. As the acute reference dose (ARfD) was not exceeded in any of the residue concentrations, a health risk for the consumer was excluded in all instances.

Of the 76 organic samples (34 percent), only two (Spain, South Africa) did not comply with the BNN orientation value of 0.01 mg/kg.



## Tomatoes: No reason to turn red



During the test period, a total of 611 tomato samples from twelve different countries of origin were tested for plant protection product residues in the DFHV and QS monitoring programmes with results that are more than just respectable.

Most of the samples came from the EU – 39 percent from the Netherlands, followed by Germany with 27 percent and Spain with 15 percent. A good 9 percent of the samples came from third countries (Morocco 6.9 percent, Turkey 0.8 percent, Israel 0.5 percent, Tunisia and Senegal 0.2 percent each).

37 percent of the samples contained no detectable residues. In roughly 65 percent of the samples with active substances, the exploitation of the legally permissible maximum residue level was ≤10 percent (average 10.9 percent for all samples). It was only exploited to over 50 percent in 2.8 percent of the samples. However, it was exceeded in eight cases (1.3 percent) with acetamiprid (Netherlands), ethephon, procymidone (Spain), acetamiprid, pyraclostrobin, boscalid, oxamyl (Italy), dithiocarbamates (Morocco).\*

The acute reference dose (ARfD) was exceeded in three cases (1x oxamyl and 1 x thiachloprid in Italy, 1x ethephon in Spain). Apart from this,

the ARfD was only exploited to a limited extent averaging 8.5 percent.

Most of the samples with residues (39 percent) contained one or more active substances. A good 21 percent of the samples were found to have more than two active substances, 3.1 on average but never more than 8. The active substances involved were mainly fungicides (boscalid, cyprodinil, dithiocarbamates and fludioxonil) and in 9 percent bromide, above all in samples from Italy and Spain.

Ethephon, which is used as a ripening agent for tomatoes, was detected in approximately 7 percent of the samples. There were complaints at the beginning of 2011 when ethephon was found in Spanish and Italian bell peppers although plant protection products containing ethephon were not authorized for this culture. At the same time, the maximum residue level and ARfD were exceeded in tomatoes in several instances, which led to the suspension of the authorization of Floridex 420 (active substance ethephon) for tomatoes in Germany. Its use for this culture is possible again in Germany since September 2011, but under certain conditions with Art. 18b approval.

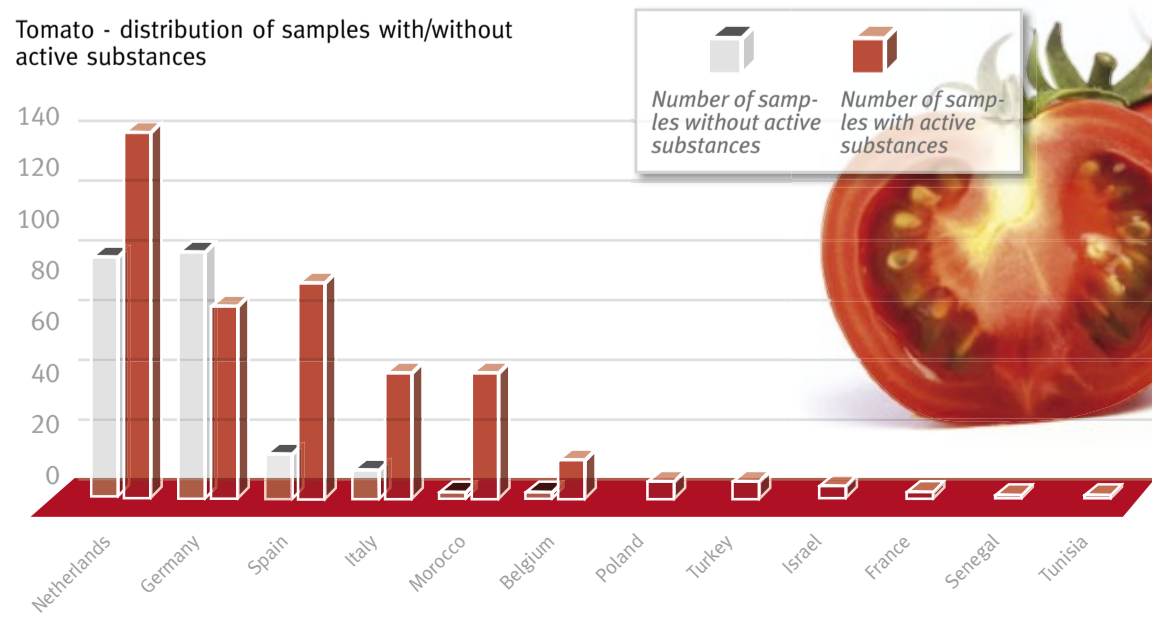
\* The measured value was evaluated without including the analytical measurement uncertainty of +/- 50 percent



## BROMIDE

The use of fumigants containing bromide is not regulated uniformly throughout Europe. Accordingly, there are exemptions for Italy, Spain and Greece which permit its use. Cultivation in bromide-rich soils can also result in bromide enrichment, however. This natural concentration in plants can be as much as 15 mg/kg.

Tomato - distribution of samples with/without active substances



# A Focus on Shrub Fruits



No matter whether it is raspberries, blackberries, black currants, red currants or gooseberries, berry fruits are very popular with the consumer. The healthy and refreshing snack is enjoyed in large quantities, particularly during the summer months. Berry fruits are also especially susceptible to various pests and plant diseases, however, and for this reason QS and DFHV have taken a look at the residue situation and evaluated 411 shrub fruit samples.

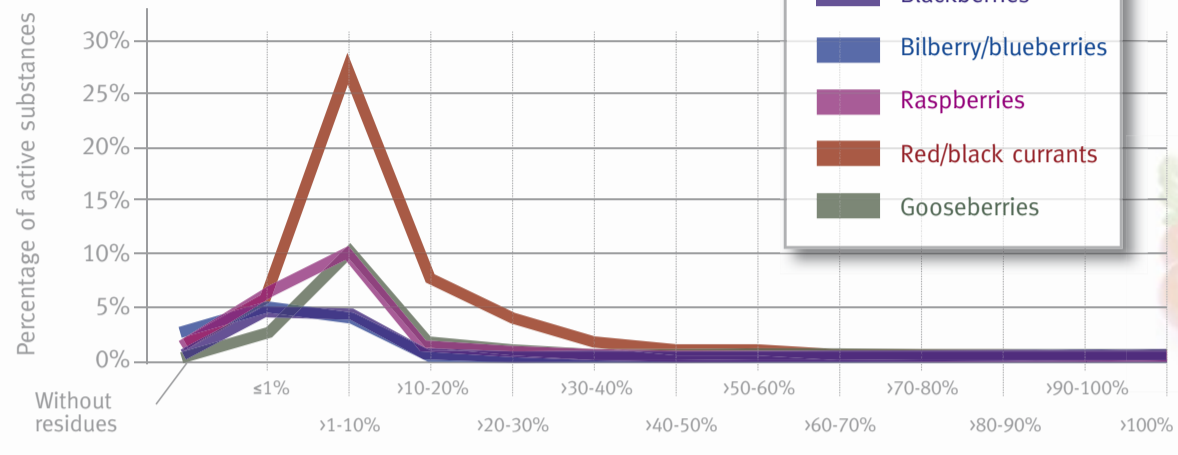
Approximately 98 percent of the samples came from the EU, 88.6 percent of them from Germany, 4.4 percent from Spain and 2.4 percent from the Netherlands. A good 2 percent of the samples came from the third countries Chile (1.2 percent), Uruguay (0.7 percent), Argentina and Morocco (0.2 percent each).

No active substance residues were detected in 18 percent of the samples. Lying at 0.2 percent, the proportion of samples with concentrations above the legally determined maximum limit is very low. Only one Spanish raspberry sample exceeded the maximum concentration of chlothalonil.\* The exploitation of the maximum residue level was  $\leq 10$  percent – on average 7.5 percent – in 80 percent of the samples with residues, and over 50 percent in not quite 2 percent of them. Exploitation of the ARfD was also very low with an average of 1.6 percent.

75 percent of the samples analyzed contained several active substances. Most samples contained between 2 and 4 active substances, on average 3.7 per sample, whereby this figure varied greatly among the various berry fruit varieties. However, one sample from Germany contained 10 active substances.

The chart on the right shows a comparison of the frequency distribution of multiple residues. A total of 56 different active substances were detected, 31 of which only once or twice. The 10 active

Percentage of Maximum Residue Level Exploitations per Active Substance and Berry Variety

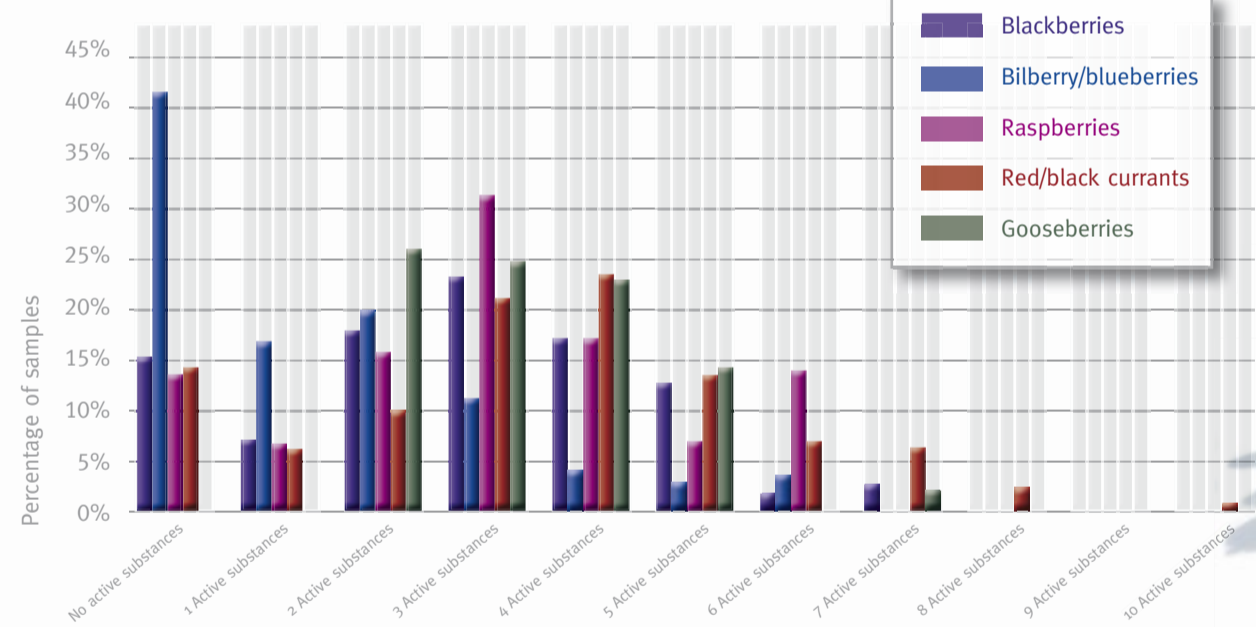


substances most frequently detected account for 85 percent of the total amount of active substances found. Among these, only fungicides, such as cyprodinil, fludioxonil and boscalid were detected in addition to the insecticides pirimicarb and thiacloprid. 5 German samples had to be rejected

because they contained active substances which were not authorized for the respective culture. Of these, 3 samples did not have the Art. 18b authorization for captan which is required for use.

\* The measured value was evaluated without including the analytical measurement uncertainty of  $\pm 50$  percent

Number of Active substances detected per Berry Variety



# Cucumbers: Much better than their reputation

Wrongly suspected during the EHEC occurrences in May 2011, the remainder of the year was not a good one for cucumber producers, even though scheme participants from Germany, the Netherlands, Belgium and Spain submitted around 500 EHEC cucumber samples to QS, all of them negative.

QS closely examined the cucumbers for plant protection product residues and here too, only good marks could be awarded: 191 cucumber samples from seven European countries – mainly the Netherlands (45 percent), Germany (38 percent), Belgium (11 percent) and Spain (4 percent) – were examined in the QS scheme in the period from 1 November 2010 to 31 October 2011.

No residues whatsoever were detected in 42 percent of the samples. In one German sample, however, the legally determined maximum concentration of residual thiacloprid was exceeded\*.

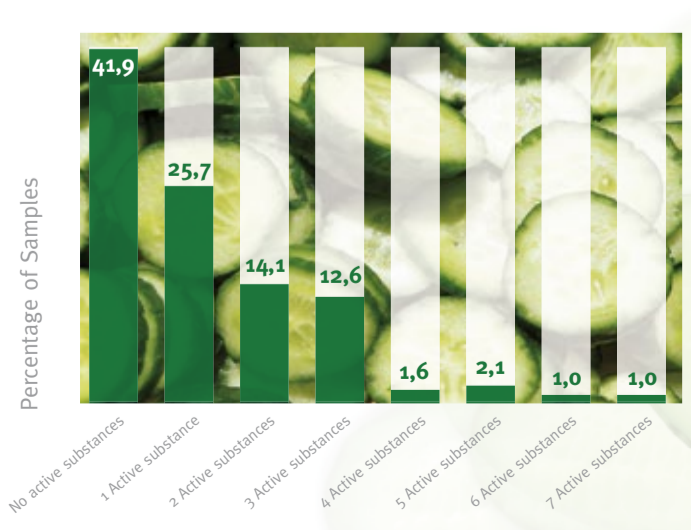
Over 52 percent of the samples contained one to three active substances, whereas 4 to seven active substances were only detected in less than 6 percent of the samples, and more than 7 active substances were not found in any sample. It is encouraging that the average number of active substances per sample was 1.2 and the proportion of full exploitation of the maximum residue content averaged only 8 percent. Overall, the laboratories detected 34 different active substances. The ten most frequently detected active substances – propamocarb, azoxystrobin, triflumizole, boscalid, cyprodinil, pymetrozine, iprodione, thiacloprid, bupirimate and famoxadone – accounted for 70 percent of the total, of which 80 percent were fungicides.

The ARfD was not exceeded with any active substance detected. With 97 percent of the samples for which an ARfD has been estab-

hed, the rate of full exploitation was  $\leq 10$  percent. In only 2 samples the rate of exploitation was more than 50 percent.

\* The measured value was evaluated without including the analytical measurement uncertainty of  $\pm 50$  percent

Frequency of Distribution of Residues



# QS

## RESIDUE ANALYSIS – KEEPING IN TOUCH WITH THE LATEST TRENDS – SOMETIMES A CHALLENGE

**Knowing the contents. That is what the QS scheme participants demand when they submit their products to one of the 62 currently QS-approved laboratories in Germany and abroad to have them tested for plant protection product residues. To ensure that the results are reliable, QS examines the laboratories' suitability by such means as the semi-annual laboratory performance assessment.**

The results of the autumn test in 2011 showed that the test matrix for spring onions posed a real challenge, particularly for the 28 laboratories currently involved in the approval process, as only 15 of them passed the test. None of the 49 labs already approved lost their approval. This high standard appears to be asserting itself internationally too. Whereas nine foreign laboratories lost their approval last year, the performance of the approved foreign labs was even slightly better overall than that of the approved German labs in the last two performance assessments. This high standard of laboratory work is to be ensured through the performance assessments for QS approval in particular. To this end, QS tightened the outline conditions for practical testing in 2011 by placing more focus on the daily lab routine. Specific preparation for a particular test matrix



Scientific advisory body of the QS residue monitoring

is no longer possible, because the labs are no longer informed about the matrix in advance. The timing of sample shipment is unknown as well. They can arrive at a laboratory within a period of three months, thus ensuring that the labs cannot prepare themselves for the forthcoming test by imposing a ban on annual leave or performing maintenance on their equipment, for example. The analysis results must then be submitted to QS within three days.

“Thanks to a new points evaluation system, we can also assess the performance of the laboratories more precisely. Good performance is rewarded in the longer term while errors have the direct effect of the labs either losing their approval or having to take the test more frequently,” according to Wilfried Kamphausen, QS expert for fruit, vegetables and potatoes.

### NEW EVALUATION MODULE

The competence of a laboratory consists of further aspects. Maintaining an overview of the applicable legal regulations for maximum residue levels, newly available active substances, the permissibility of active substance/matrix combinations and specific analysis recommendations is just as much a part of daily business routine

as analysis itself. Accordingly, QS will be offering the approved labs an instrument to expand their own competence in future.

“With the evaluation module for laboratories, which will be made available in the QS database in the first quarter of 2012, QS is offering the labs an internet-based platform with information from the field of plant protection product residues,” says Claudia Rotter, who manages the residue monitoring at QS. The QS-approved laboratories will then have roughly 30,000 pieces of residue data at their disposal in anonymized form, all of which have been collected since the database was introduced in 2008. With the help of search masks, data can be called up specifically using various parameters, such as time frame, product, origin or active substance. “The labs can use this data pool to selectively expand their own analysis spectrum, identify risk areas and recommend matrix and origin-related analyses to their customers in an even more specific manner,” explains Claudia Rotter.



# DFHV

## DEUTSCHE LABORGEMEINSCHAFT OBST UND GEMÜSE



**The Deutsche Laborgemeinschaft Obst und Gemüse (Associated German Laboratories for Fruit and Vegetables) was established in May 2011 at the initiative of the Deutscher Fruchthandelsverband e.V. (DFHV).**

With this platform, participants are given the opportunity for an intensive exchange of information on sector-specific matters relating to quality assurance with fruit and vegetables, in particular the analysis and evaluation of plant protection product residues. Other topical subjects are also discussed with the goal of communicating jointly coordinated recommendations to DFHV members, authorities and other bodies.

The contracted laboratories of the DFHV *4fresh* test group can participate. During the first term of office, the association is being chaired jointly by Dr. Jürgen Kuballa (Galab Laboratories GmbH), the DFHV vice-president with responsibility for Quality Management, Matthias Bratzler and DFHV staff member Mark Guse. At the November meeting in Bonn, the agenda included the topics “Updating of the active substances list (DFHV Combi)”, “The obligation of laboratories to report”, “*4fresh* database” etc. The next meeting is scheduled for May 2012 within the scope of the DFHV general meeting.

# DFHV Seminars

## DATES 2012

25 Feb.	Quality and Incoming Goods Control, Specialists' Seminar (basic), Grossmarkt Hamburg
6. Mar.	Strengthening Management Competence, Specialists' Seminar (advanced), Bonn
March	Food Safety, Specialists' Seminar (basic), Hamburg
15 Mar.	Quality Assurance, Organic Fruit and Vegetables, Specialists' Seminar (basic), Bonn
23/24 Mar.	Merchandise Knowledge, Fruit and Vegetables, Trainees' Seminar, Bonn
24 Apr.	Quality and Incoming Goods Control, Specialists' Seminar (basic), Bonn
28 Apr.	Merchandise Knowledge, Seasonal Veg./Fruit, Spring, Specialists' Seminar (basic), Hamburg
May	Sampling, Specialists' Seminar (basic), Bonn
23 May	Merchandise Knowledge, Stone Fruit, Specialists' Seminar (basic), Bonn
13 Jun.	Public Relations and Crisis PR, Specialists' Seminar (basic), Bonn
14 Jun.	Merchandise Knowledge, Fruit Vegetables, Specialists' Seminar (basic), Bonn
19 Jun.	Organic Imports from Third Countries, Specialists' Seminar (advanced), Bonn
5 Sep.	Basics of Quality Management, Specialists' Seminar (basic), Bonn
September	Location Planning of Intralogistical Processes, Specialists' Seminar (advanced), Venue to be announced
7/8 Sep.	Merchandise Knowledge, Fruit and Vegetables, Trainees' Seminar, Bonn
15 Sep.	Merchandise Knowledge, Seasonal Veg./Fruit, Autumn, Specialists' Seminar (basic), Hamburg
October	Plant protection products in Fruit and Vegetables, Specialists' Seminar (basic), Bonn
8-12 Oct.	Fruit Merchants' Seminar, 1st Week
22-26 Oct.	Fruit Merchants' Seminar, 2nd Week
6 Nov.	Quality and Incoming Goods Control, Specialists' Seminar (basic), Bonn
20 Nov.	Merchandise Knowledge, Exotic Fruits, Specialists' Seminar (basic), Bonn
24 Nov.	Merchandise Knowledge, Seasonal Vegetables/Fruit, Winter (basic), Specialists' Seminar (basic), Hamburg



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### Frische Seminar

Die Bildungsplattform des Deutschen Fruchthandelsverbandes e.V.