

A closer look: More than 28,000 analyses on fruit and vegetables

All facts and figures at a glance

■ Deutsche Fruchthandelsverband (DFHV) and QS Qualität und Sicherheit GmbH (QS) evaluated a total of **28,306 samples** for the **monitoring report 2017**.

■ The **sampling volume** therefore **increased by 8.6 percent** compared to 2016.

■ The analysed fruit and vegetable samples originate from **78 countries**.

■ **No plant protection product residues** were detected in **36.6 percent** of the samples.

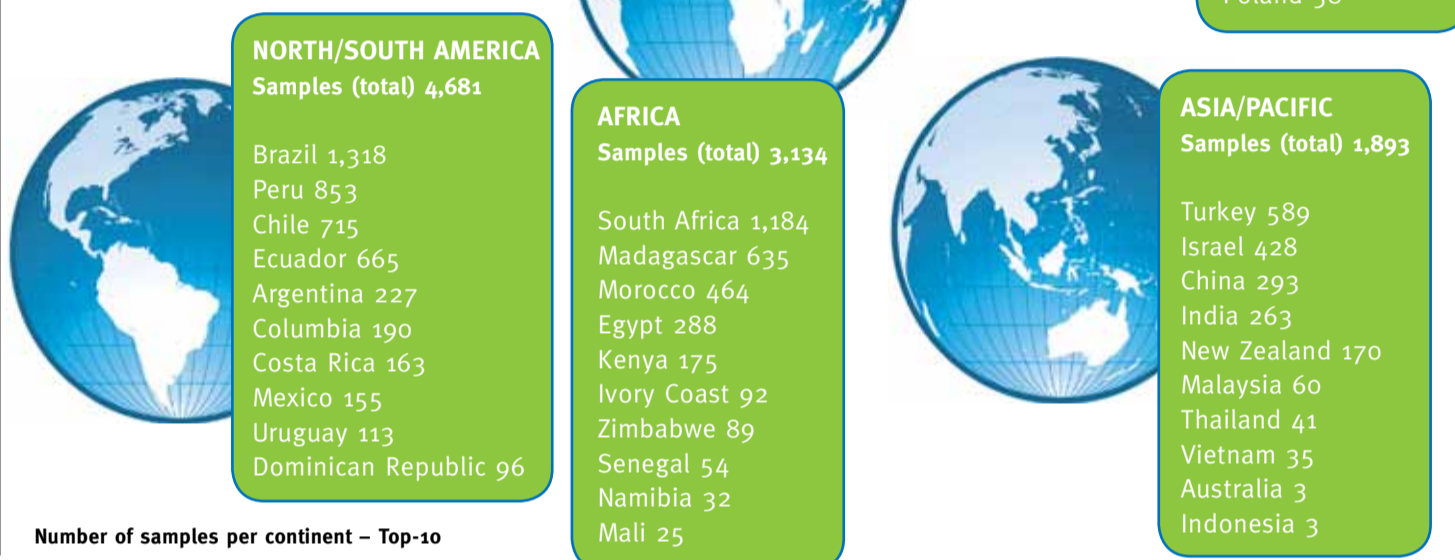
■ **3.1 percent** of the total number of samples had to be rejected due to an **exceedance of the maximum residue level**.

- With **0.6 percent**, the rejection rate for products from Germany lies at a similarly low level as in the previous year.

- With **1.8 percent**, the **rejection rate for products from other European countries** increased slightly compared to the last evaluation (1.2 percent).

- The **rejection rate** for products from **third countries** lies at **6.7 percent** and is therefore higher than it was last year (4.8 percent). In particular the product groups exotic fruits and stone fruits showed above-average rates of ex-

ceedance of maximum legal residue levels. With exotic fruits, which alone account for 50 percent of all third country samples, lychees were conspicuous due to sulphur dioxide, and pomegranates due to phosphonic acid. The latter also applies to sweet cherries, where phosphonic acid as a contaminant can originate from other sources (e.g. fertilisers and plant fortifiers), which means that it cannot be clearly attributed to its use as a plant protection product.



National Action Plan on Sustainable Use of Plant Protection Products (NAP)

JOINTLY REDUCING THE USE OF PLANT PROTECTION PRODUCTS

The federal government passed the **National Action Plan on Sustainable Use of Plant Protection Products (NAP)** in April 2013. One of its aims is to **reduce the risks posed to the natural environment by the use of plant protection products by 30 percent by 2023**. In addition to this, **exceedances of the maximum residue level in foods are to be reduced to below one percent by 2021** irrespective of whether they are produced in Germany or imported. The efforts of trade and industry, national and regional authorities and NGOs are consolidated in the national action plan.

To comply with the implementation of the **EU plant protection framework directive (Directive 2009/128/EC establishing a framework for Community action to achieve the sustainable use of pesticides)**, Germany and all other EU states had to present and implement national action plans. All EU member states have now introduced specific measures, but what is the current status of the implementation of the action plan in Germany? What success is already visible with regard to the reduction of the risks that can arise through the use of plant protection products?

Dr. Wolfgang Zornbach of the Federal Ministry of Food and Agriculture (BMEL) and **Dr. Hans-Dieter Stallknecht** of the Federal Committee for Fruit and Vegetables (BOG) report on the status quo and outlook for the future of NAP.

The National Action Plan on Sustainable Use of Plant Protection Products is an agreement of the national German government reached in collaboration with the federal states and with the involvement of affected groups. It is therefore not a law, with bans and restrictions, but rather a plan that attempts to extend beyond the strict legal framework and reduce the risks for humans and the environment which can arise through the use of plant protection products.

Some success can be seen after only three years. There has been a significant decline in exceedances of maximum residue levels of plant protection products in food in recent years. The Federal Office of Consumer Protection and Food Safety reports on this regularly on the basis of data collected by the federal states. There has also been a decline in the risks for the natural environment, although not in all areas. All results are presented on the NAP website www.nap-pflanzenschutz.de/en/

The first results and options for further developing the NAP were discussed with representatives of the affected groups, as well as national and regional authorities, in a mid-term workshop organised by the Federal Ministry of Food and Agriculture in June 2016. It was established here that although the concept of the NAP is funda-

mentally suitable to achieve the objectives, further development potential exists in such areas as communication, as well as the indicators and measures required for the protection of biodiversity. The workshop participants drew up a key issues paper which is currently being intensively scrutinised by the federal government

Fruit and vegetable growers have always been closely involved in the work of the National Action Plan and have worked consistently to achieve the set goals. These include the further development of integrated plant protection as well as the preparation of culture-specific guidelines for the integrated plant protection of fruits and vegetables. The Federal Committee for Fruit and Vegetables is currently at the final voting stage with the Federal Ministry of Food and Agriculture so that this guideline can be recognised by the federal government. The goal is to achieve an even more effective use of plant protection products.

Another important goal, a reduction in the number of exceedances of maximum residue levels to less than one percent, has already been achieved for German produce. Proof of this is also given in this issue of the monitoring report and the aim now is to maintain this high level. With the help of statistical programmes, such as the Neptun and PAPA surveys, intensive work is being done to determine the measure required to ensure the economic cultivation of crop plants in the future too. To supplement the action plan, there is a specific NAP for fruit and vegetables which pursues the objective of closing plant protection gaps and having the range of active substances required for effective resistance management on hand. In addition to all of this, the goal is to inform the general public about the benefits and risks of plant protection products, thus improving acceptance of their use in fruit and vegetable cultivation.



Dr. Wolfgang Zornbach
Federal Ministry of
Food and Agriculture (BMEL)



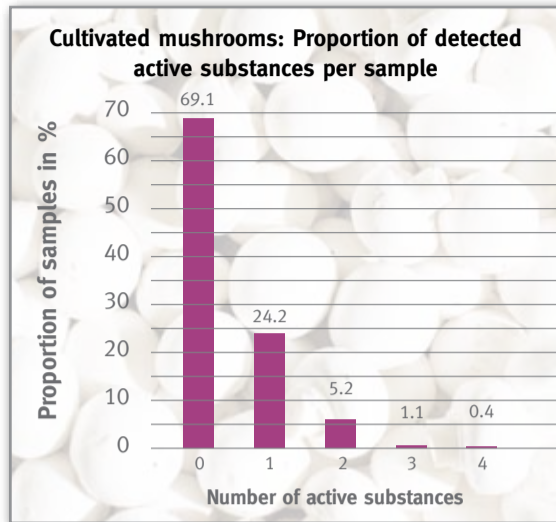
Dr. Hans-Dieter Stallknecht
Federal Committee for Fruit and
Vegetables (BOG)

Cultivated Fungi

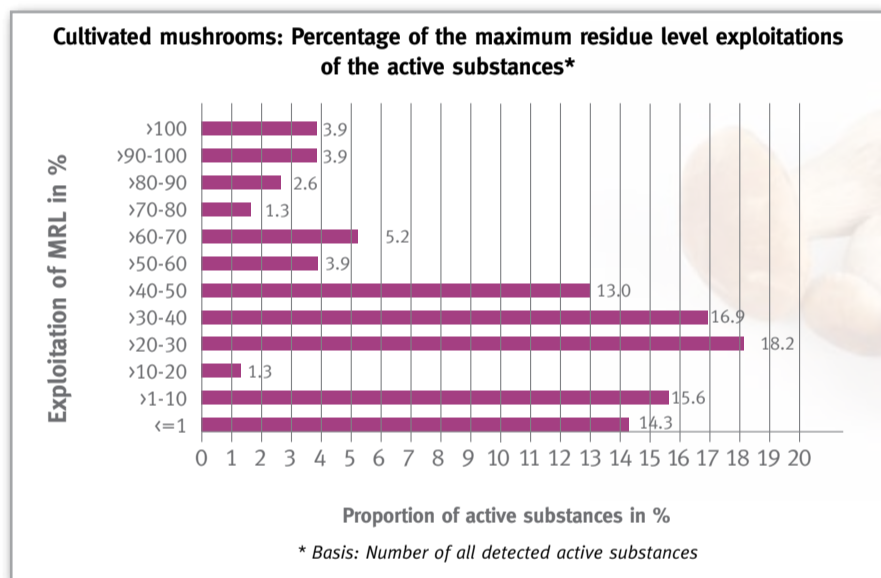
Champignon & Co. are convincing

No matter whether they are grilled, fried or ingredient in a risotto, mushrooms are a culinary enrichment which contribute to a healthy diet. Edible fungi, such as champignons, shiitake and king oyster mushrooms, are low in cholesterol, calories and fat and contain considerable quantities of minerals and protein, which means that they are also well suited as a meat substitute for vegetarians.

A total of 269 samples of cultivated mushrooms from six countries of origin were analysed, the majority (234 samples) from Germany. No plant protection product residues were detected in more than two thirds of the samples drawn by QS scheme participants and DFHV member companies. Only one active substance was detected in 24.2 percent of the samples. This positive overall impression is also confirmed by



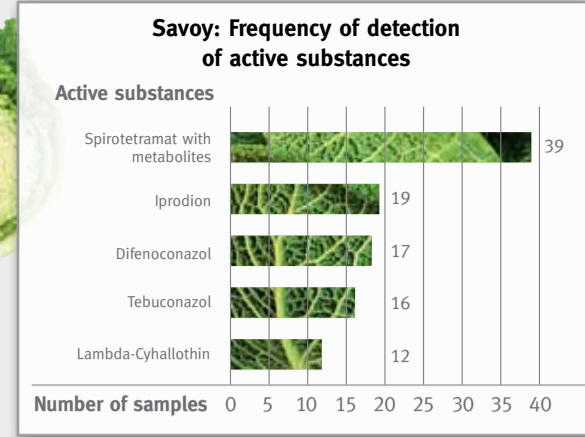
the evaluation of the maximum residue levels. For nearly 30 percent of the active substances the maximum residue level was exhausted up to a maximum of 10 percent. The legal limit values were only exceeded in three samples: one German sample exceeded the maximum level for dithiocarbamates, one Dutch sample the maximum level for mepiquat and one Polish sample the maximum level for carbendazim/benomyl.



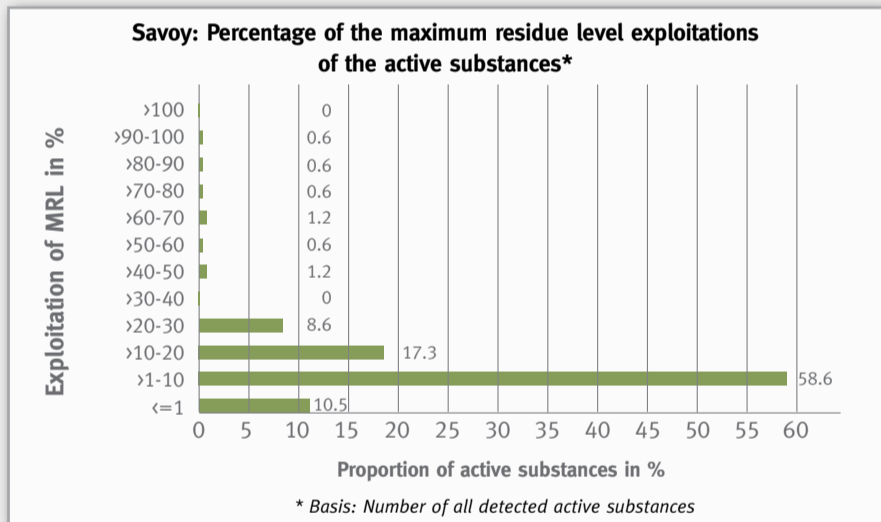
Savoy cabbage

A green vegetable in the green zone

It used to be regarded as a typical poor people's food, but today the green cabbage with the crinkly leaves has become socially accepted by top chefs. And no wonder either, because savoy cabbage not only convinces through its delicate taste and tender structure, it also collects lots of points where health aspects are concerned. With roughly 50 mg per 100 grams, savoy is one of the best vitamin C suppliers on the vegetable counter!



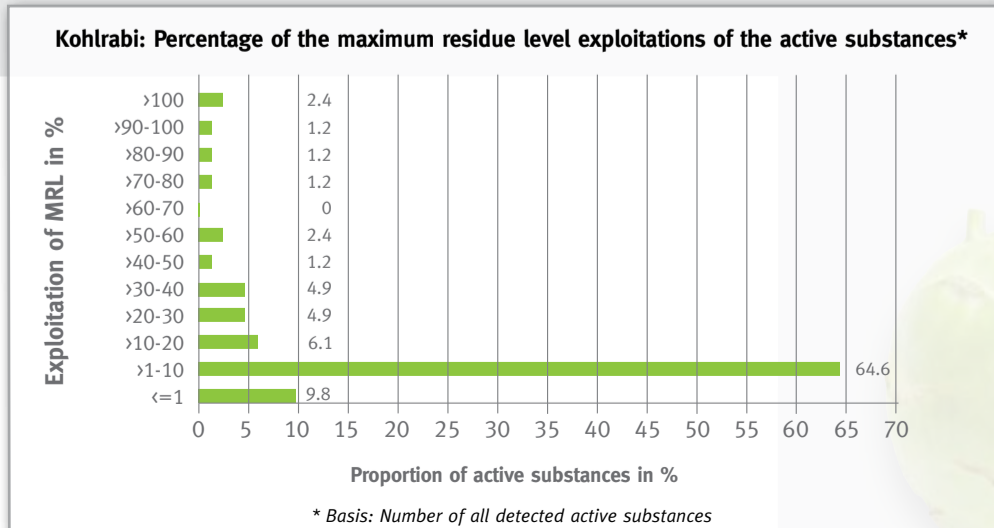
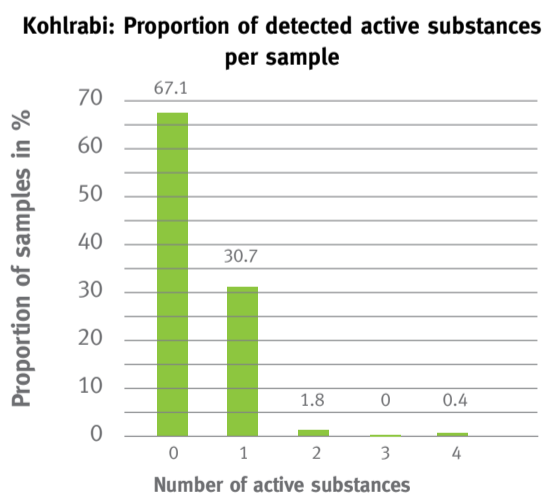
QS and DFHV evaluated data of a total of 126 savoy cabbage samples from six countries of origin. 80 percent of the samples came from Germany, followed by Italy and Belgium in places two and three with 7 percent each. The good news: The maximum residue level was not exceeded in any savoy cabbage sample. In addition, not a single active substance was detected in 36.5 percent of all samples. When active substances were detected in samples, the maximum residue level was only exploited up to 10 percent in nearly 70 percent of the cases. With a view to the detected active substances it is shown that the insecticide spirotetramat is frequently used during cultivation. As shown in the diagram spirotetramat was detected by the laboratories in almost every third sample (39 samples). The active substance applicable against a wide range of sucking insects was therefore detected the most in this crop, followed by the fungicides iprodion and difenoconazol with 19 and 17 detections, respectively.



Kohlrabi Germany's most popular cabbage variety scores points

It's German name indicates that at least from a botanical point of view, kohlrabi belongs to the cabbage family. Unlike other cabbage varieties, however, it is not the leaves or blossoms of the plant that are eaten but rather the thickened part of the plant stalk that grows above ground. Its mild taste and easy digestibility have helped kohlrabi to great popularity in Germany. With 40,000 tonnes a year, Germany is the world's biggest producer and also has the highest consumption per capita and annum in Europe.

A total of 228 kohlrabi samples were analysed for plant protection product residues. The majority of the samples (61 percent) came from Germany, followed by Spain (25 percent) and Italy (13 percent). More than two thirds (67.1 percent) of all analysed samples showed no signs whatsoever of any plant protection product residues. 30.7 percent of the samples contained only one active substance, with the insecticide spirotetramat being detected most frequently. Only 2.4 percent of the active substances detected exceeded the legal residue level by more than 100 percent. This was the case in two kohlrabi samples. These consisted of a sample from Germany with which the maximum legal residue level for the insecticide indoxacarb was exploited to 135 percent, and a Spanish sample with which the maximum level of propyzamide (herbicide) was exploited to 800 percent.



Apricot

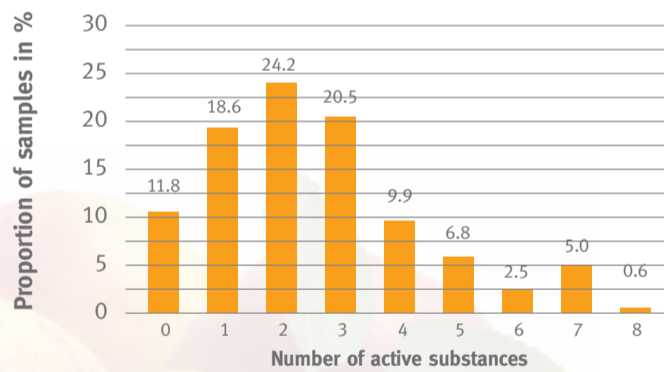
High marks for this stone fruit

The apricot is regarded as one of the oldest of all cultivated fruit varieties. The stone fruit is said to have been cultivated for the first time in China around 4,000 years ago. It takes its present-day name from the ancient Romans: as apricot trees blossom and start to produce fruit earlier in the year than other trees of the rose family, they gave the golden-yellow fruit the Latin name "praecoces" ("precocious fruit" in English).

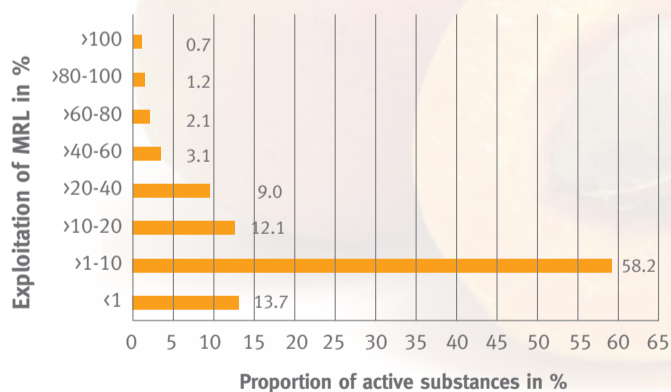
A total of 161 apricot samples from eight different countries were analysed. Of these, 75 percent alone came from the EU, mainly France and Spain, followed by Turkey in third place. The extent to which maximum residue levels were exploited paints a positive picture: over 80 percent of all analysis results reached a maximum of 20 percent of the established limit values. Active substances were detected at levels above the valid maximum residue levels in three apricot samples. These comprised one sample from Greece for the acaricide propargite, which is not authorised in the EU, and two samples from Turkey for the fungicide dodine. Nearly 12 percent of the samples were free of any residues and in 64 percent of the samples one to three active substances were contained.

Among the most frequently detected active substances were the fungicide fosetyl-aluminium, the group of dithiocarbamates, boscalid and fenbuconazole, followed by the insecticide thiacloprid. Fosetyl-aluminium is not clearly attributable to its active use in plant protection, however, as it can also originate from other introduction sources (fertilisers, plant fortifiers etc).

Apricot: Proportion of detected active substances per sample

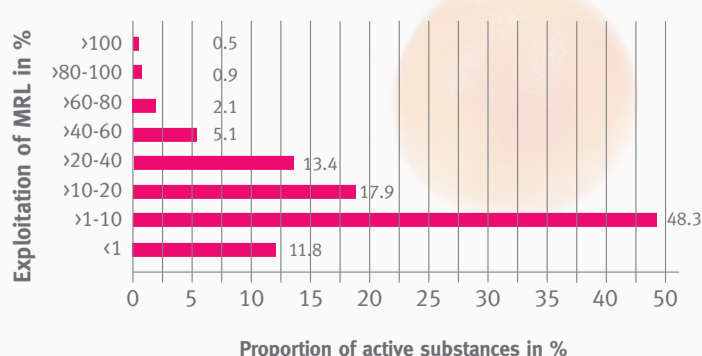


Apricot: Percentage of the maximum residue level exploitations of the active substances*



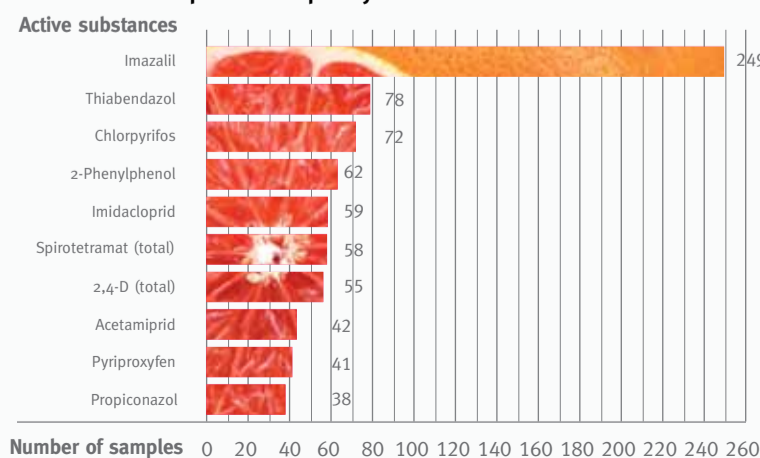
* Basis: Number of all detected active substances

Grapefruit: Percentage of the maximum residue level exploitations of the active substances*



* Basis: Number of all detected active substances

Grapefruit: Frequency of detection of active substances



Pineapple

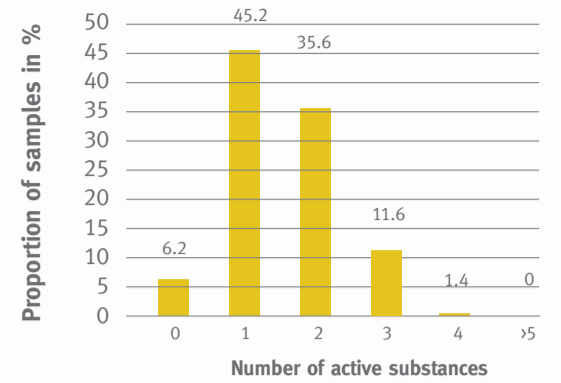
The queen of tropical fruits convinces just about everywhere

With its characteristic crown of leaves, the pineapple is regarded as the queen of tropical fruits. It was first discovered by Christopher Columbus, who was presented with it by the natives of Guadeloupe in November 1493 and took it back to Europe with him. The first cultivation attempts in European greenhouses only succeeded from the mid-19th century, however.

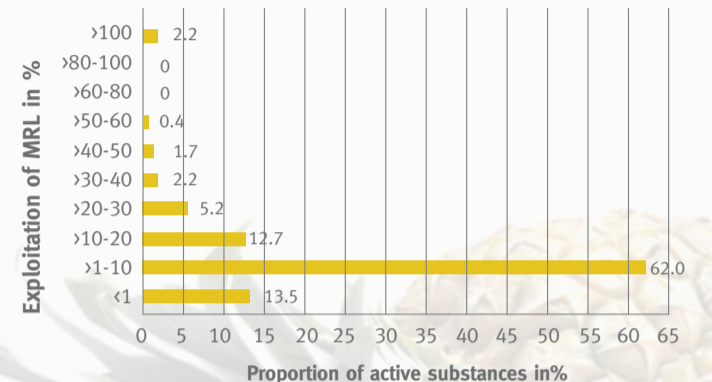
All 146 pineapple samples came from third countries, almost three quarters from Costa Rica (73 percent), followed by Mauritius, South Africa, Panama, Ghana and Columbia. Residues of plant protection products were detected in almost all samples. This included over 80 percent with only one or two active substances. In more than 75 percent of the active substances detected, the maximum residue level was exhausted up to 10 percent.

Frequently detected substances included the growth regulator ethephon, the fungicides triadimenol, triadimefon and prochloraz and the insecticide diazinon, which is not authorised in the EU. Of a total of 15 samples from Mauritius, four had to be rejected because the maximum residue level had been exceeded, three due to ethephon and one because of diuron (herbicide). This means that Mauritius, as a new country of origin, is responsible for the overall increase in the rejection rate. Of all of the samples from the other countries of origin, only one sample from Costa Rica exceeded the limit value for the fungicide propiconazole.

Pineapple: Proportion of detected active substances per sample



Pineapple: Percentage of the maximum residue level exploitations of the active substances*



* Basis: Number of all detected active substances

Grapefruit

Almost everything running smoothly with this citrus fruit

A bitter-sweet taste and nothing but healthy. A cross between an orange and a pomelo, this citrus fruit is a natural appetite inhibitor which also promotes digestion and helps to lower the cholesterol level. Its high vitamin C content (45 mg per 100 g) also provides additional protection for the immune system.

Of the total of 283 samples from ten countries, 30 percent came from the EU, especially Spain, with the other 70 percent coming from third countries, mainly South Africa and Turkey, followed by Mexico and Israel. Around a quarter of the samples contained only two active substances and an additional 38 percent between three and four active substances. Samples with more than five active substances originated exclusively in third countries, including one from Turkey with eleven active substances. Almost all samples contained residues of plant protection products. Nevertheless, 60 percent of the active substances exhausted the authorised residue level up to a maximum of 10 percent. The diagram for the detection of the most common active substances shows that imazalil, a typical surface treatment agent for citrus fruits, was detected most frequently, i.e. 249 of 283 samples analysed. The post-harvest active substance is followed at a great distance by the fungicides thiabendazol and 2-phenylphenol as well as the insecticides chlorpyrifos, spirotetramat and imidacloprid. A total of five grapefruit samples exceeded the maximum legal levels. In addition to one sample from Cyprus with imazalil, this applied to three samples from South Africa with dichlorprop (herbicide) and fenhexamid (fungicide) and one sample from Turkey with the non-EU approved fungicide biphenyl.

QS Residue Monitoring

EVALUATION THE EASY WAY!

QS scheme participants can gain a comprehensive overview of their analysis results within the residue monitoring programme at any time in the QS database. As of now, an integrated evaluation module enables the convenient evaluation of the analysis data recorded in the database.

The data can be filtered and evaluated precisely to suit your purposes with only a few mouse clicks, e.g. by time period, country of origin, product, active substance, multiple residues, maximum residue level exploitation and combinations of this information. In addition to this, all evaluations in the QS database can be easily exported to Excel and used for the user's own evaluations and presentations.



More and more QS scheme participants are entering voluntarily drawn sample data into the QS database in addition to the mandatory QS samples. By doing so, not only can a broader database be used for their own evaluations in the database, the companies also benefit from the service that every analysis report is checked by QS for compliance with maximum legal residue levels and admissibility of the detected active substances per product and country of origin. For Ralf Marggraf too, head of the group quality management department at EDEKA Minden-Hannover, the advantages of the evaluation module in the QS database are plain to see: "Samples where the maximum legal levels have been exceeded and others containing unauthorised active substances are displayed at the first glance into the QS database. But even after ensuring compliance with our company-internal specifications, we can still filter quickly and easily. This makes our daily quality assurance work easier and also enables us to gain a quick and reliable overview of the residue situation of our samples".

The new QS video tutorials, which can be accessed with immediate effect at <https://www.q-s.de/video-tutorials-en> offer valuable support when working with the evaluation module and provide fast access to the many and varied evaluation options of the QS database.



FOLPET: NEW RESIDUE DEFINITION

Since 26 August 2016, a new residue definition has existed for the fungicide folpet which includes the metabolite phthalimid in addition to folpet itself (Regulation (EU) 2016/156, of 18.01.2016: "Sum of folpet and phthalimid, expressed as folpet"). As not every detection of phthalimid can be attributed to the use of folpet as a plant protection product, however, difficulties in assessing the results can arise here.



Folpet belongs to the group of phthalimid fungicides and is used mainly in viticulture and vegetable cultivation. Folpet is converted into phthalimid inside the plant. In addition to this, phthalimid can be synthesised in the plant from substances which are widespread in the environment.

This means that measured phthalimid levels do not necessarily have to originate from the use of folpet as a plant protection product, they can also be attributable to other sources of entry. By including phthalimid in the residue definition of folpet, a positive finding can therefore be made on the one hand, even though no folpet was used. On the other hand, the new residue definition conceals the risk of maximum levels being exceeded. Add to this the fact that, for production reasons, plant protection products containing captan may be contaminated with up to 1% folpet. It is therefore possible that this could also lead to folpet and/or phthalimid being detected in the product.

If folpet was used legally in the manufacture of a product prior to 26.08.2016, the previously valid maximum levels apply in accordance with EU Reg. 396/2005 on the maximum levels of pesticide residues in or on foods and feeds of plant and animal origin and amending Article 49 of Council Directive 91/414/EEC. The new residue definition and adjusted maximum levels for folpet apply to products manufactured in accordance with regulations after 26.08.2016.

DFHV

FOCUS ON QUALITY MANAGEMENT

Due to increasing demands, above all in quality management and quality assurance, the FrischeSeminar expanded its range of events in this area in 2016. Accordingly, many topics were addressed for the first time which the quality managers had to deal with in the course of their daily work. Some add a new perspective or have to be approached in a special way.

For the first time, the new version of the IFS Wholesale / Cash & Carry Standard was the focus of two training courses in September 2016. This standard defines all of the requirements for wholesalers, cash & carry markets and packing businesses regarding how bulk and packaged goods are to be handled. This means that it is binding for fruit and vegetables and therefore for fruit wholesale too. As the new Version 2 is valid from 1 January 2017, the quality managers showed great interest in acquiring information on the requirements in fruit wholesale well in advance.

There was also a premiere for the FrischeSeminar "Communication and dealing with auditors", because a pending audit often causes stress, pressure and uncertainty within a company. The seminar provided tips and information on how to master company-internal audits with ease. The following questions were answered among others: How can I prepare for my audit – whether announced or unannounced – in the ideal manner? What should my co-workers know? How can I control communication with the auditor, especially in conflict situations? There was also lively interest in the further training event "Packaging: Labelling / Conformity Declaration / Migration". Main focus was placed here on legal requirements, the currently valid IFS packaging guideline, optimisation of the conformity declaration and the current status regarding residues of mineral oils.



Keeping a close eye on the quality of fruit and vegetables fruit and vegetables



Frische Seminar

Die Bildungsplattform des Deutschen Fruchthandelsverbandes e.V.

unterstützt von



FRISCHESEMINAR – DATES 2017

16 February	Quality and incoming goods control of fruit and vegetables, specialists' seminar (basic), Bonn
2 March	An overview of the fruit and vegetable market – structures and trends, specialists' seminar (basic) in cooperation with Agrarmarkt Informations-Gesellschaft mbH, Bonn
7 March	Holding successful discussions with customers – fundamentals, specialists' seminar (basic) in cooperation with Andreas Hermes Akademie, Bonn
14 March	IFS Cash & Carry / Wholesale: Exchange of experiences, specialists' seminar (basic), Bonn
16/17 March	Merchandise knowledge fruit and vegetables, seminar for trainees, Bonn
25 March	Quality/incoming goods control of fruit and vegetables, regional seminar (basic) in cooperation with Fruchthof Berlin Verwaltungsgenossenschaft eG, wholesale market, Berlin
28/29 March	Banana ripening: Ripening techniques and ripening management, specialists' seminar (basic) in cooperation with Internationale Fruchthandelsimport Gesellschaft Weichert GmbH & Co. KG and Hamburg Süd, Hamburg
4 April	Digitalisation of the fruit and vegetables sectors: Satisfying customers' demands on product labelling, traceability and process transparency with GS1 standards, specialists' seminar (basic), Cologne
6 April	Latest developments in quality management – a focus on residue analysis, specialists' seminar (basic), Bonn
4 May	HACCP principles for fruit and vegetables, specialists' seminar (basic), Bonn
9 May	Quality and incoming goods control – focus on fruit, specialists' seminar (basic), Bonn
8 June	HACCP structure with fruit and vegetables, specialists' seminar (advanced), Bonn
12 Sept.	Latest developments in quality – focus on customer requirements, specialists' seminar, Bonn
4 to 8 and 18 to 22 Sept.	Fruit merchant seminar, CIC certificate training course, Hürth
26 Sept.	An overview of the fruit and vegetable market – structures and trends, specialists' seminar (basic) in cooperation with Agrarmarkt Informations-Gesellschaft mbH, Bonn
28/29 Sept.	Merchandise knowledge fruit and vegetables, seminar for trainees, Bonn
5 October	Quality and incoming goods control of fruit and vegetables, specialists' seminar (basic), Bonn
19 October	IFS Pest Control Guideline, specialists' seminar (basic), Bonn
26 October	Quality/incoming goods control of fruit and vegetables, regional seminar (basic) in cooperation with GHVG – Großmarkt Hamburg Verwaltungsgenossenschaft e.G., wholesale market, Hamburg
13 to 17 Nov and 27 Nov. to 1 Dez.	Fruit merchant seminar, CIC certificate training course, Hürth

ADDITIONAL DATE



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