FEED

MONITORING-REPORT

Figures & facts on contaminants in feed

2017

POSTER

Quality Assurance. **From farm to shop.**

QS. Ihr Prüfsystem für Lebensmittel.

www.q-s.de

FACTS AND INFORMATION AROUND ASPECTS OF QS FEED MONITORING

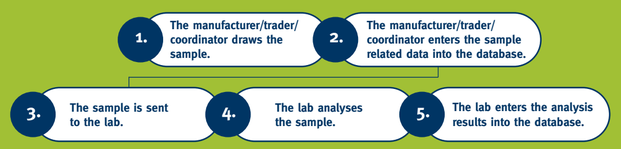
HIGH REQUIREMENTS PROFILE FOR LABORATORIES

Only laboratories with QS recognition may be commissioned with analysis within the scope of QS feed monitoring. For a laboratory to acquire recognition, it must have an accreditation in accordance with the standard EN ISO/IEC 17025 and must also be able to prove that participated in ring trials on the parameters prior to recognition. Furthermore, a laboratory must demonstrate that it masters the test methods prescribed by QS and provide a list with parameters and their detection limits, as well as analysis range for the area of feed. To retain QS recognition, all laboratories are obliged to provide evidence of participation in ring trials for the parameters recognised by QS.

COMPETENCE FOR SAMPLING

Every company that produces or trades feed must participate in the Feed Monitoring. The feed companies can draw the required samples by themselves (except farmers). This may appear critical at first glance, however it provides security through the cross-stage approach of the QS scheme, as every stage draws samples both when raw goods are received and when finished goods are shipped. In this way, the supply chain mutually controls itself. Sampling in agriculture is organised by the coordinators. Samples in agricultural companies must always be drawn by third parties. Usually the auditors draw the feed samples during independent inspections. A fundamental rule is that only qualified persons are allowed to draw samples.

FROM THE SAMPLING TO THE DATABASE



RISK-ORIENTATED CONTROL PLANS

Within QS feed monitoring, there is a large number of different control plans which are specifically customised to each sector. The control plans are checked regularly and can be adapted, as soon as there is a need to react to current developments and occurrences in the market. The analysis results also flow into the preparation of control plans, of course. If products are conspicuous in a negative way, the inspection frequency is increased. If numerous examinations show a low risk, then the inspection frequency is decreased. ■

OBLIGATION TO REPORT INCIDENTS TO QS

- **Maximum level exceeded:** The batch must be rejected as the product is no longer marketable and may not be fed to animals. The scheme participant must also report the circumstances to the QS head office with the assistance of the paper of incident.
- **Action threshold exceeded:** If an action threshold is exceeded, the company must closely examine its processes to establish the causes and introduce measures, but the product may remain on the market. A report on the circumstances to QS is mandatory.
- **Guidance value exceeded:** If the QS guidance value, which is established for selected substances and certain animals (e.g. Aflatoxin B1 with dairy cattle) is exceeded, a restriction is imposed in the QS scheme: whereby although the product remains marketable, it may not be traded freely in all instances. The circumstances must be reported to the QS head office (paper of incident), which coordinates with the scheme participant on how to proceed further.
- **If there are positive findings** of salmonella, antibiotic active substances and animal components, the company must report the circumstances to QS (paper of incident). A differentiation of serovar, antibiotic active substance and animal species is necessary.
- **If the EU guidance value has been exceeded** for DON, ZEA or OTA, it is not mandatory to report to QS, but internal measures must be taken within the company to determine and document how the goods are handled.

Note: In addition to the obligation to report to QS, there are also obligations to report to the local feed monitoring authority.

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FIGURES & FACTS ON CONTAMINANTS IN FEED

3 million individual analyses were evaluated for the Monitoring Report 2017 - over 450,000 analyses more compared to the previous year. We have updated figures and facts about contaminants of feed for you. The comparison with the Monitoring Report 2016 shows that particularly in the case of **Deoxynivalenol** (DON) (+16 %) and **Salmonella** (+17 %), the number of exceedances or rather the amount of positive findings is increased.

In order to interpret the results correctly, the corresponding measured value ranges of each analysis' result are shown. They support you in relating the results to the limit values of every feed.

› Using this poster, you can compare the analysis results with your own feed.

Data basis: Analysis results of QS feed monitoring from January 2008 to July 2017

Aflatoxin B1

Parameter	Number of analysis	Number of exceedances (max. level)	Feed/ raw material
Aflatoxin B1	**34,509** Of the 34,509 analysis, a value was present in 3,216 (9.3 %)	**9 in total**	
		7	Maize
		1	Maize gluten meal
		1	Milk performance feed

Analysis results for Aflatoxin B1 in detail

Feed	Result	Result	Result
Feed Material Of the 2,616 analysis for which a value was detected, the results were as follows ...	**0-10 µg/kg** 2,488 between 0 and 10 µg/kg	**› 10-20 µg/kg** 119 between 10 and 20 µg/kg	**› 20 µg/kg** 9 over 20 µg/kg
Compound Feed Of the 600 analysis for which a value was detected, the results were as follows ...	**0-5 µg/kg** 590 between 0 and 5 µg/kg	**› 5-10 µg/kg** 9 between 5 and 10 µg/kg	**› 10 µg/kg** 1 over 10 µg/kg was detected

Deoxynivalenol (DON)

Parameter	Number of analysis	Number of exceedances (EU guidance value)	Feed/ raw material
DON	43,784 Of the 43,784 analysis, a value was detected in 21,961 (50.2 %)	71 in total	
		20	Self-mixed feed for fattening pigs/sows/piglets
		12	Complete feed for sows
		16	Complete feed for fattening pigs
		5	Piglet rearing feed
		8	Supplementary feed for sows/piglets/ fattening pigs
		6	Maize (plants)
		1	Wheat
		2	Oats
		1	Maize gluten

Analysis results for DON in detail

Feed	Result	Result	Result
Feed Material Of the 13,908 analysis for which a value was detected, the results were as follows ...	**0-5 mg/kg** 13,723 between 0 and 5 mg/kg	**› 5-8 mg/kg** 113 between 5 and 8 mg/kg	**› 8 mg/kg** 72 over 8 mg/kg
Compound Feed Of the 8,053 analysis for which a value was detected, the results were as follows ...	**0-0.9 mg/kg** 7,825 between 0 and 0.9 mg/kg	**› 0.9 mg/kg** 228 over 0.9 mg/kg	

Zearalenone (ZEA)

Parameter	Number of analysis	Number of exceedances (EU guidance value)	Feed/ raw material
ZEA	40,650 Of the 40,650 analysis, a value was detected in 14,920 (36.7 %)	27 in total	
		7	Piglet rearing feed
		6	Maize (plants)
		1	Triticale
		3	Self-mixed pig fattening feed
		2	Self-mixed cattle-fattening feed
		4	Supplementary feed for fattening pigs
		3	Complete feed for sows/fattening pigs
		1	Distillery spent wash

Analysis results of ZEA in detail

Feed	Result	Result	Result
Feed Material Of the 8,011 analysis for which a value was detected, the results were as follows ...	**0-1 mg/kg** 7,861 between 0 and 1 mg/kg	**› 1-2 mg/kg** 82 between 1 and 2 mg/kg	**› 2 mg/kg** 68 over 2 mg/kg
Compound Feed Of the 6,909 analysis for which a value was detected, the results were as follows ...	**0-0,1 mg/kg** 6,583 between 0 and 0.1 mg/kg	**› 0,1 mg/kg** 326 over 0.1 mg/kg	

Dioxins, dioxin-like PCBs (dl PCB) and non-dioxin-like PCBs (ndl PCB)

Parameter	Number of analysis	No. of exceedances (max. level)	No. of exceedances (guidance value/ action threshold)	Feed/ raw material
Dioxins and dl PCB	**66,279**	**12 in total**	**8 in total**	
Dioxins	Of the 28,197 analysis, a value was detected in 24,533 (87.0 %)	1	1	(Sugar) beet molasses chips, (sugar) beet small pieces
		2	1	Fatty acids from the chemical refining (refinery fatty acids)
		2	–	Fruit marc
		–	1	Fatty acid salts
		–	1	By-products of the milk-processing industry
		2	–	Fish oil
		1	–	Supplementary feed for all species
		–	1	Mineral supplementary feed for cattle
		–	1	Calcareous marine algae
dl PCB	Of the 25,666 analysis, a value was detected in 21,508 (83.8 %)	–	1	(Sugar) beet molasses chips
			1	Walnut expeller
Total dioxins and dl PCB	Of the 12,416 analysis, a value was was detected in 10,607 (85.4 %)	1	–	Fatty acids from the chemical refining (refinery fatty acids)
		1	–	Shrimps
		1	–	Fish oil
		1	–	Fruit marc
ndl PCB	**20,913** Of the 20,913 analysis, a value was detected in 12,275 (58.7 %)	**1 in total**		
		1	–	Compound fatty acids

Analysis results for dioxins, dioxin-like PCBs and non-dioxin-like PCBs in detail

Parameter	Result	Result	Result
Dioxins Of the 24,533 analysis for which a value was detected, the results were as follows ...	**0-0.25 ng/kg** 22,823 between 0 and 0.25 ng/kg	**› 0.25-0.5 ng/kg** 1,340 between 0.25 and 0.5 ng/kg	**› 0.5 ng/kg** 370 over 0.5 ng/kg
dl PCB Of the 21,508 analysis for which a value was detected, the results were as follows ...	**0-0.25 ng/kg** 20,529 between 0 and 0.2 ng/kg	**› 0.2-0.35 ng/kg** 463 between 0.2 and 0.35 ng/kg	**› 0.35 ng/kg** 516 over 0.35 ng/kg
Total Dioxins + dl PCB Of the 10,607 analysis for which a value was detected, the results were as follows ...	**0-0.5 ng/kg** 9,879 between 0 and 0.5 ng/kg	**› 0.5-1.0 ng/kg** 358 between 0.5 and 1.0 ng/kg	**› 1.0 ng/kg** 370 over 1.0 ng/kg
ndl PCB Of the 12,275 analysis for which a value was detected, the results were as follows ...	**0-5 µg/kg** 11,450 between 0 and 5 µg/kg	**› 5-10 µg/kg** 438 between 5 and 10 µg/kg	**› 10 µg/kg** 387 over 10 µg/kg

Salmonella

Parameter	Total number of analysis	No. of positive findings	Feed/ raw material
Salmonella	**76,123** 81 of the 76,123 samples tested positive (0.1 %)	**81 in total**	
		12	Pig feed
		13	Rapeseed meal, cake
		15	Soya (bean) cake, peel, meal
		9	Dairy cattle, cattle feed
		5	Sunflower seed, cake, meal
		9	Poultry feed
		5	Cocoa shells
		13	Various feed materials

Heavy metals

Parameter	Number of analysis	Number of exceedances (max. level) ...	Feed/ raw material
Heavy metals	**169,883**	**20 in total**	
Arsenic	Of 41,744 analysis, a value was detected in 13,661 (32.7 %)	1	Supplementary feed for pigs
		1	Supplementary feed for fattening pigs
		1	Shrimps
		1	Yeast
Lead	Of 43,227 analysis, a value was detected in 19,573 (45.3 %)	1	Complete feed for fattening pigs (up to 50 kg)
		2	Calcium carbonate
		1	Yeast
		1	Compunds of trace elements
Cadmium	Of 43,064 analysis, a value was detected in 27,604 (64.1 %)	1	Cocoa shells
		1	Growing crops on permanent grassland (fresh, silaged or dried)
		1	Shrimps
		1	Supplementary feed for pigs
		1	Supplementary feed for all species
		1	Supplementary feed for dairy cattle
Mercury	Of 41,848 analysis, a value was detected in 3,653 (8.7 %)	3	Yeast
		1	Supplementary feed for pig
		1	Emulsifiers

Analysis results for heavy metals in detail

Parameter	Result	Result
Arsenic Of the 13,661 analysis for which a value was detected, the results were as follows ...	**0-1 mg/kg** 10,820 between 0 and 1 mg/kg	**› 1 mg/kg** 2,841 over 1 mg/kg
Lead Of the 19,573 analysis for which a value was detected, the results were as follows ...	**0-5 mg/kg** 18,780 between 0 and 5 mg/kg	**› 5 mg/kg** 793 over 5 mg/kg
Cadmium Of the 27,604 analysis for which a value was detected, the results were as follows ...	**0-1 mg/kg** 27,080 between 0 and 1 mg/kg	**› 1 mg/kg** 524 over 1 mg/kg
Mercury Of the 3,653 analysis for which a value was detected, the results were as follows ...	**0-0.05 mg/kg** 3,327 between 0 and 0.05 mg/kg	**› 0.05 mg/kg** 326 over 0.05 mg/kg

Imprint
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