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# Feed additives

Annual Report 2012 of the National Reference Laboratory

J.J.M. Driessen, W.M.J. Beek, T. Zuidema and J. de Jong



RIKILT

WAGENINGEN UR

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RIKILT Wageningen UR  
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# Summary

This report of the Dutch National Reference Laboratory (NRL) for feed additives (RIKILT Wageningen UR) describes the activities employed in 2012. The main tasks of the NRL are: providing assistance to the European Union Reference Laboratory (EURL) on their request, as well as providing advice and support to the competent authority, which is the Dutch Ministry of Economic Affairs - Department 'Plantaardige Agroketens en Voedselkwaliteit'.

## **NRL activities on request of the EURL**

In 2012 the NRL commented on 12 initial evaluation reports prepared by the rapporteur laboratory. The dossiers concerned antioxydants, preservatives, trace elements, other zootechnical additives, a silage additive, a mixture of a zootechnical additive / digestibility enhancer & other zootechnical additive, a coccidiostat and a technological additive / binder & substance for the reduction of contamination of feed with mycotoxins.

In October 2012 an employee of RIKILT attended the Annual Workshop. Among others the following topics were presented: technical tolerances for feed additives in additives, premixtures, compound feed and feed materials, including discussions about the interpretation of Annex IV of Regulation (EC) 767/2009; safety assessment and methods of analysis available for silage additives. The RIKILT representative contributed with an oral presentation about "NRL-activities of RIKILT – Institute of Food Safety with focus on coccidiostats". It was announced that in 2013 again many dossiers have to be assessed for re-evaluation purposes. During the workshop ideas have been exchanged about how to improve the efficacy of the EURL – NRL network.

RIKILT participated in a proficiency test for the determination of authorised coccidiostats at cross-contamination level in poultry compound feed. In November 2012 an employee of RIKILT attended the workshop during which the results of the proficiency test were evaluated and discussed.

## **Advice and support**

With respect to 28 requests for experiments for scientific purposes, the NRL advised the competent authority regarding temporary use exemptions of feed additives in the Netherlands. The requests concerned among others enzymes, probiotics and amino acids.

In the framework of a Community procedure for authorisation of the feed additive bentonite in the functional group of mycotoxin binders (group m), the Ministry of Economic Affairs has requested advice if the in vivo efficacy of this additive has been proven sufficiently and if for a generic authorisation the identity in relationship to the mycotoxin- binding capacity has been covered sufficiently.





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# 1 Introduction

Within the EU livestock production occupies a very important place in the agriculture. Satisfactory results depend to a large extent on the use of safe and good-quality feedingstuffs. In order to protect human health, animal health and the environment, feed additives should undergo a safety assessment through a Community procedure before being placed on the market, used or processed within the Community. The applicant (producer or importer of the additive or the person that places the additive on the market) has to submit a dossier containing all relevant information regarding safety of the product. The details of the application procedure are described in Regulation (EC) 1831/2003. The European Food Safety Authority, established by Regulation (EC) no. 178/2002 carries out scientific assessment of feed additives (including premixtures). The final decision about authorisation of a feed additive is taken by the Standing Committee on the Food Chain and Animal Health, Section Animal Nutrition.

Within the EU, the European Union Reference Laboratory (EURL) and a consortium of National Reference Laboratories (NRLs) play an important role in the evaluation and authorisation process to place a feed additive on the market. The Joint Research Centre of the European Commission, Institute for Reference Materials and Reference Measurements (JRC-IRMM in Geel, Belgium) is the EURL. Within the Netherlands RIKILT Wageningen UR is the NRL for feed additives (Commission Regulation (EC) No 378/2005).

In EU regulation 1831/2003 the tasks and duties of the EURL are defined. It is also described in this regulation that for all tasks and duties of the EURL the NRLs may be asked by the EURL for assistance. The EURL is responsible for:

- The reception, preparation, storage and maintenance of the reference samples;
- The testing and evaluation or validation of the method for detection;
- Evaluating the data provided by the applicant for authorisation to place the feed additive on the market, for the purpose of testing and evaluation or validation of the method for detection;
- Submitting full evaluation reports to the Authority.

Next to these tasks the EURL shall play a role in dispute settlements between Member States concerning the analytical results of testing additives for use in animal nutrition.

Commission regulation (EC) 378/2005 describes in more detail the activities and organisation of EURL and NRLs. During an application evaluation process it is possible that an NRL is requested to act as the rapporteur of the application (the rapporteur laboratory) or to participate in the consortium. The rapporteur laboratory has to :

- Draft an initial evaluation report concerning the data submitted in each application and submitting it for comments to the other laboratories;
- Compile the comments received from the other laboratories and prepare a revised evaluation report;
- Submit the revised evaluation report to the EURL. The EURL submits the full evaluation report to the Authority.

For experiments for scientific purposes, Member States may authorise the use, as additives, of substances which are not authorised at Community level for a specific application. In The Netherlands, an applicant needs a 'temporary use exemption' for the particular feed additive. These permissions are obtained from the Dutch 'Bureau Diergeneesmiddelen' under supervision of the Ministry of Economic Affairs - Department 'Plantaardige Agroketens en Voedselkwaliteit' (EZ-PAV). EZ-PAV is the competent authority in the Netherlands for authorisation of feed additives. RIKILT advises the Dutch government regarding the temporary use exemption of specific feed additives, more specific about issues related to the application of feed additives in feed, e.g. cross-contamination, stability and homogeneity. Furthermore, on request RIKILT as an NRL advises EZ regarding other issues concerning feed additives.

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This report describes the activities carried out in 2012 by RIKILT Wageningen UR regarding the functions as described above namely:

- As the NRL for feed additives;
- Advice regarding temporary use exemptions, other advice and support of EZ.

This report also presents the activities performed by the NRL to keep up expertise on the analysis of feed additives like participation in proficiency tests and presenting the results of analytical research (posters, abstracts, publications).

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## 2 NRL activities

### 2.1 Dossier evaluation

In 2012 RIKILT as an NRL commented on 12 initial evaluation reports prepared by the rapporteur laboratory. The dossiers concerned antioxidants, preservatives, trace elements, other zootechnical additives, a silage additive, a mixture of a zootechnical additive / digestibility enhancer & other zootechnical additive, a coccidiostat and a technological additive / binder & substance for the reduction of contamination of feed with mycotoxins. For the last mentioned dossier RIKILT has recommended to pay attention to the possible contamination with dioxins.

### 2.2 EURL workshop

In October 2012 an employee of RIKILT (dr. Jacob de Jong) participated in the Annual Workshop, organised by the European Union Reference Laboratory (EURL), JRC-IRMM, Geel, Belgium. For the first time, this workshop was hosted by one of the NRLs, viz. the University of Ljubljana, Veterinary Faculty, Slovenia. The workshop included a visit to the laboratories.

A number of oral presentations and posters were presented by NRLs. Two oral presentations dealt with tolerances for additives: a contribution of one of the Polish NRLs about maximum technical tolerances for additives in premixtures and a contribution of one of the German NRLs about analytical tolerances for additives in feed that are in force in Germany. During the discussions it proved out that there is much confusion among NRLs about the interpretation of Annex IV of Regulation (EC) 767/2009 where the technical tolerances for additives in compound feed and feed materials are regulated. There is a need for an explanatory note or an improved version of this Annex.

A representative of EFSA contributed with an oral presentation about the safety assessment and methods of analysis available for silage additives.

The RIKILT representative contributed with an oral presentation about "NRL-activities of RIKILT – Institute of Food Safety with focus on coccidiostats". Among others, results of projects about cross-contamination of coccidiostats were presented regarding (i) factors that influence cross-contamination in different parts of factory installations (mixer, transport systems, press) and (ii) an enquiry in 7 Member States regarding the way in which their official inspection services deal with the maximum limits for cross-contamination (what is allowed and what is not allowed in factories, e.g. mixing of different lots).

It was announced that in 2013 again many dossiers have to be assessed for re-evaluation purposes. During the workshop ideas have been exchanged about how to improve the efficacy of the EURL – NRL network in order to assess the large number of dossiers in due time.

In 2013 RIKILT will host the Annual EURL – NRL Workshop.

### 2.3 Participation in collaborative studies

Due to the scope of the NRL task assigned, in 2012 RIKILT participated in a proficiency test for the determination of authorised coccidiostats at cross-contamination level in poultry compound feed. This proficiency test was organised by the EURL Feed Additives Control on request of DG SANCO.

The results were evaluated and discussed during the 1<sup>st</sup> workshop of the EURL-FA Control and the consortium of NRLs on November 13 and 14 in Geel, Belgium. The results and z-scores of RIKILT are given in table 1.

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**Table 1***Results RIKILT for the PT coccidiostats at cross-contamination level in poultry feed.*

Sample	Compound	Concentration (mg/kg)	z-score
MAT 1	Narasin	0.89	1.82
	Diclazuril	0.012	0.53
MAT 2	Monensin	<0.625	-
	Lasalocid	1.809	3.35
	Salinomycin	0.57	-0.83
MAT 3	Blank	-	-

During the workshop it was concluded that between 62% and 73% of the laboratories reported satisfactory results for four spiked coccidiostats (monensin, lasalocid, diclazuril and salinomycin) and 57% of the laboratories submitted satisfactory results for narasin.

The z-scores for narasin, diclazuril and salinomycine were satisfactory for RIKILT. For lasalocid and monensin the results were unsatisfactory. For monensin RIKILT reported <0.625, due to the fact that monensin was identified in the sample below the reporting limit of 0.5% cross-contamination level. The unsatisfactory results of lasalocid and monensin comply with the results of the validation of the applied method (described in SOP A1098), namely that the method is not fit for the quantification of lasalocid and monensin. Discussions during the workshop made clear that for the analysis of the ionophoric coccidiostats, in particular, it is difficult to obtain repeatable and reproducible results. To monitor the performance in time, in 2013 a proficiency test for the determination of authorised coccidiostats will be organised again. In order to improve the RIKILT method for the determination of ionophoric coccidiostats in 2013 method optimization will be performed.

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## 3 Advice on temporary use exemptions

In 2012 28 national requests for permission to use substances - which are not authorised at Community level - as additives for experiments for scientific purposes (according to Regulation (EC) No 1831/2003, article 3.2, handled by EZ-PAV / Bureau Diergeneesmiddelen) have been assessed with regards to aspects related to feed processing. The number of requests was at the same level as in previous years. About half of the requests concerned enzymes. Other requests concerned among others probiotics and amino acids.

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## 4 Communications and advice

One of the tasks of the NRL is to communicate with the Competent Authority on issues regarding the labelling and control of feed additives. In 2012 the Competent Authority was advised about the following issues:

In the framework of a Community procedure for authorisation of the feed additive bentonite in the functional group (m) of substances for reduction of the contamination of feed by mycotoxins: substances that can suppress or reduce the absorption, promote the excretion of mycotoxins or modify their mode of action (often in brief referred to as mycotoxin binders) the Ministry of Economic Affairs has requested advice if the in vivo efficacy of this additive has been proven sufficiently and if for a generic authorisation the identity in relationship to the mycotoxin- binding capacity has been covered sufficiently.

The Ministry of Economic Affairs has also requested advice about a proposal discussed in the Standing Committee on the Food Chain and Animal Health, Section Animal Nutrition regarding authorisation of the use of among others preservatives and acidity regulators through drinking water applications.

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## 5 Publications, presentations and posters

### Publications

- J.J.M. Driessen, W.M.J. Beek and J. de Jong. Feed Additives; Annual Report 2011 of the Dutch National Reference Laboratory, RIKILT-report 2012.006

### Presentations

- Jacob de Jong; NRL-activities of RIKILT – Institute of Food Safety with focus on coccidiostats; 12<sup>th</sup> Workshop of the European Union Reference Laboratory for Feed Additives (EURL-FA) and the Consortium of National Reference Laboratories; Ljubljana, Slovenia, 4-5 October 2012
- Jacob de Jong, Christoph von Holst, Rainer Malisch; The role of EU Reference Laboratories, National Reference Laboratories and Official Control Laboratories; International Workshop on Risk Assessment of Feed Additives and Feed Materials (invited lecture); Beijing, China, 4-5 November 2012

### Posters

The following posters are related to but have not been produced within this NRL project:

- Validation of a multiplex flow cytometric immunoassay for the simultaneous detection of 6 coccidiostats in feed and egg; Monique Bienenmann-Ploum, Ursula Vincent, Anne-Catherine Huet, Katrina Campbell, Terence Fodey, Willem Haasnoot, Philippe Delahaut, Chris Elliott, Linda Stolker, Jacob de Jong and Michel Nielen; Euroresidue VII, 14-16 May 2012, Egmond aan Zee (NL)

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## 6 Plan for NRL activities 2013

The participation of the NRL in the dossier evaluation procedure will be continued for the coming year. The NRL will also advise the competent authority regarding all kind of upcoming questions and temporary use exemptions.

Furthermore the annual EURL meeting will be hosted and attended.

RIKILT Wageningen UR will participate in the second proficiency test for coccidiostats on a cross-contamination level in order to get information about the quality of the official control by the NRLs.



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# References

Regulation (EC) No 1831/2003 of the European Parliament and of the Council of 22 September 2003. On additives for use in animal nutrition, L 268 page 29-43.

Commission Regulation (EC) No 378/2005 of 4 March 2005 on detailed rules for the implementation of Regulation (EC) No 1831/2003 of the European Parliament and of the Council as regards the duties and tasks of the Community Reference Laboratory concerning applications for authorisations of feed additives.

Commission Directive 2009/8/EC of 10 February 2009 amending Annex I to Directive 2002/32/EC of the European Parliament and of the Council as regards maximum levels of unavoidable carry-over of coccidiostats or histomonostats in nontarget feed, L 40 page 19-25.

Commission Regulation (EC) No 386/2009 of 12 May 2009 amending Regulation (EC) No 1831/2003 of the European Parliament and of the Council as regards the establishment of a new functional group of feed additives.

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RIKILT Wageningen UR is part of the international knowledge organisation Wageningen University & Research centre. RIKILT conducts independent research into the safety and quality of food. The institute is specialised in detecting and identifying substances in food and animal feed and determining the functionality and effect of those substances.

The mission of Wageningen UR (University & Research centre) is 'To explore the potential of nature to improve the quality of life'. Within Wageningen UR, nine specialised research institutes of the DLO Foundation have joined forces with Wageningen University to help answer the most important questions in the domain of healthy food and living environment. With approximately 30 locations, 6,000 members of staff and 9,000 students, Wageningen UR is one of the leading organisations in its domain worldwide. The integral approach to problems and the cooperation between the various disciplines are at the heart of the unique Wageningen Approach.





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