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EURL Evaluation Report on the Analytical Methods submitted in connection with the Application for the Authorisation of Feed Additives according to Regulation (EC) No 1831/2003

Dossier related to:	**FAD-2010-0251** **CRL/100271**
Product Name:	***Melissa officinalis* dry extract**
Active Substance(s):	***Melissa officinalis* dry extract**
Rapporteur Laboratory:	**European Union Reference Laboratory for Feed Additives (EURL-FA)** **Geel, Belgium**
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Report approved by: Date:	**Christoph von Holst** **06/05/2011**

EXECUTIVE SUMMARY

In the current application authorisation is sought under articles 4(1) and 10(2) for *Melissa officinalis dry extract* under the category/functional group 2(b) "sensory additives"/"flavouring compounds", according to the classification system of Annex I of Regulation (EC) No 1831/2003. *Melissa officinalis dry extract*, also known as lemon balm extract, is an extract from leaves of *Melissa officinalis L*. It contains 3 to 6% rosmarinic acid, used as a phytochemical marker to trace the active substance. Specifically, authorisation is sought for the use of *Melissa officinalis dry extract* for all animal species and categories. It is intended to be incorporated in complete *feedingstuffs* or in drinking *water* at a dose ranging from 2.5 to 100 mg/kg.

For the identification and determination of *Melissa officinalis dry extract* in the *feed additive*, the Applicant proposed the internationally recognised European Pharmacopoeia method, based on High Performance Liquid Chromatography (HPLC) coupled to ultraviolet detection. The method is based on the determination of rosmarinic acid (phytochemical marker of *Melissa officinalis dry extract)*, using reference solution of rosmarinic acid. Even though no performance characteristics are provided, the EURL recommends for official control the European Pharmacopoeia method – Ph. Eur. 6.0, method 01/2010:2524, for the qualitative identification of *Melissa officinalis dry extract* in the *feed additive*.

The Applicant did not provide any experimental method or data for the determination of *Melissa officinalis dry extract* in *premixtures*, *feedingstuffs* and *water*. Furthermore, the unambiguous determination of the content of *Melissa officinalis dry extract* added to *premixtures* and *feedingstuffs* is not achievable by analysis. Therefore the EURL cannot evaluate nor recommend any method for official control to determine *Melissa officinalis dry extract* in *premixtures*, *feedingstuffs* and *water*.

Further testing or validation of the methods to be performed through the consortium of National Reference Laboratories as specified by Article 10 (Commission Regulation (EC) No 378/2005) is not considered necessary.

KEYWORDS
Melissa officinalis dry extract, sensory additive, flavouring compounds, all animal species and categories

1. BACKGROUND

In the current application authorisation is sought under articles 4(1) (new use in water) and 10(2) (re-evaluation of additives already authorised under council directive 70/524/EEC) for *Melissa officinalis dry extract* under the category/functional group 2(b) "sensory additives"/"flavouring compounds" [1], according to the classification system of Annex I of Regulation (EC) No 1831/2003. According to the Applicant, *Melissa officinalis dry extract*, also known as lemon balm extract, is an extract from leaves of *Melissa officinalis L*. [2, 3]. It is a natural product, botanically defined flavouring and in a form of a brown free-flowing powder. It contains 3 to 6% rosmarinic acid, a hydroxycinnamic acid derivative, used as a phytochemical marker to trace the active substance [3]. Specifically, authorisation is sought for the use of the *feed additive* for all animal species and categories [2]. The *feed additive* is intended to be incorporated in complete *feedingstuffs* or in drinking *water* at a dose ranging from 2.5 to 100 mg/kg [2].

2. TERMS OF REFERENCE

In accordance with Article 5 of Regulation (EC) No 378/2005, as last amended by Regulation (EC) No 885/2009, 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 the tasks of the European Union Reference Laboratory concerning applications for authorisations of feed additives, the EURL is requested to submit a full evaluation report to the European Food Safety Authority for each application or group of applications. For this particular dossier, the methods of analysis submitted in connection with *Melissa officinalis dry extract*, and their suitability to be used for official controls in the frame of the authorisation, were evaluated.

3. EVALUATION

Identification /Characterisation of the feed additive

Qualitative and quantitative composition of impurities in the additive

When required by EU legislation, analytical methods for official control of undesirable substances in the additive (e.g. arsenic, cadmium, lead, mercury, mycotoxins, and dioxins) are available from the respective European Union Reference Laboratories [4].

Description of the analytical methods for the determination of the active substance in feed additive, premixtures and feedingstuffs

For the identification and determination of *Melissa officinalis dry extract* in the *feed additive*, the Applicant proposed the internationally recognised European Pharmacopoeia method – Ph. Eur. 6.0, method 01/2010:2524 [5], based on High Performance Liquid Chromatography (HPLC) coupled to ultraviolet detection. The method is based on the determination of rosmarinic acid (phytochemical marker of *Melissa officinalis dry extract),* using reference solution of rosmarinic acid.

Even though no performance characteristics are provided, the EURL recommends for official control the European Pharmacopoeia European Pharmacopoeia method – Ph. Eur. 6.0, method 01/2010:2524, for the identification and determination of *Melissa officinalis dry extract* in the *feed additive*.

The Applicant did not provide any experimental method or data for the determination of *Melissa officinalis dry extract* in *premixtures*, *feedingstuffs* and *water*. Furthermore, the unambiguous determination of the content of *Melissa officinalis dry extract* added to *premixtures* and *feedingstuffs* is not achievable by analysis. Therefore the EURL cannot evaluate nor recommend any method for official control to determine *Melissa officinalis dry extract* in *premixtures*, *feedingstuffs* and *water*.

Further testing or validation of the methods to be performed through the consortium of National Reference Laboratories as specified by Article 10 (Commission Regulation (EC) No 378/2005) is not considered necessary.

4. CONCLUSIONS AND RECOMMENDATIONS

In the frame of this authorisation the EURL recommends for official control the European Pharmacopoeia method – Ph. Eur. 6.0, method 01/2010:2524, based on High Performance Liquid Chromatography (HPLC) coupled to ultraviolet detection for the determination of *Melissa officinalis dry extract* in *feed additive*.

The Applicant did not provide any experimental method or data for the determination of *Melissa officinalis dry extract* in *premixtures*, *feedingstuffs* and *water*. Furthermore, the unambiguous determination of the content of *Melissa officinalis dry extract* added to *premixtures* and *feedingstuffs* is not achievable by analysis. Therefore the EURL cannot evaluate nor recommend any method for official control to determine *Melissa officinalis dry extract* in *premixtures*, *feedingstuffs* and *water*.

Recommended text for the register entry (analytical method)

For the determination of the *Melissa officinalis dry extract* in the *feed additive*:

- High Performance Liquid Chromatography (HPLC) coupled to ultraviolet detection (European Pharmacopoeia 6.0, method 01/2010:2524)

5. DOCUMENTATION AND SAMPLES PROVIDED TO EURL

In accordance with the requirements of Regulation (EC) No 1831/2003, reference samples of *Melissa officinalis dry extract* have been sent to the European Union Reference Laboratory for Feed Additives. The dossier has been made available to the EURL by EFSA.

6. REFERENCES

[1] *Application, Reference SANCO/D/2 Forw. Appl. 1831/00136/(10209)/2010

[2] *Application, Proposal for Register Entry – Annex A

[3] *Technical dossier, Section II: Identity, characterisation and conditions of use of the additive; Methods of analysis

[4] Commission Regulation (EC) No 776/2006 amending Annex VII to Regulation (EC) No 882/2004 of the European Parliament and of the Council as regards to Community Reference Laboratories

[5] *Technical dossier, Section II – Annex_II_Eur. Pharmacopoeia Melisse

* Refers to Dossier No. FAD-2010-0251

7. RAPPORTEUR LABORATORY & NATIONAL REFERENCE LABORATORIES

The Rapporteur Laboratory for this evaluation was European Union Reference Laboratory for Feed Additives, IRMM, Geel, Belgium. This report is in accordance with the opinion of the consortium of National Reference Laboratories as referred to in Article 6(2) of Commission Regulation (EC) No 378/2005, as last amended by Regulation (EC) No 885/2009.

8. ACKNOWLEDGEMENTS

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- Landwirtschaftliche Untersuchungs- und Forschungsanstalt (LUFA) Speyer, Speyer (DE)
- Plantedirektoratet, Laboratorium for Foder og Gødning, Lyngby (DK)
- Österreichische Agentur für Gesundheit und Ernährungssicherheit (AGES), Wien (AT)
- Centro di referenza nazionale per la sorveglianza ed il controllo degli alimenti per gli animali (CReAA), Torino (IT)
- Instytut Zootechniki w Krakowie, Krajowe Laboratorium Pasz, Lublin (PL)
- Laboratoire de Rennes, SCL L35, Service Commun des Laboratoires, Rennes (FR)
- Ústřední kontrolní a zkušební ústav zemědělský (ÚKZÚZ), Praha (CZ)
- Thüringer Landesanstalt für Landwirtschaft (TLL), Abteilung Untersuchungswesen. Jena (DE)