

Identification of coccidiostats in feed additives by means of FT-NIR hyperspectral image analysis

Introduction

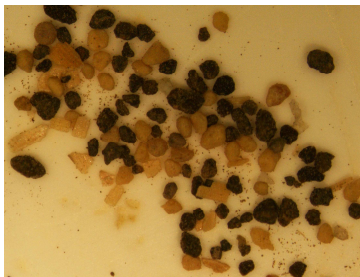
Feed additives play an important role in animal nutrition and are authorised within the European Union (EU) according to Regulation (EC) No 1831/2003. An overview of all feed additives currently authorised within the EU is given by the feed additive register regularly updated by the European Commission. In this study, we focus on the application of spectroscopic methods on the analysis of feed additives containing coccidiostats as active substance. Among the authorised methods for the determination of coccidiostat, HPLC-UV and LC/MS-MS are the most common. By means of this feasibility study, the advantages of spectroscopy are shown for the rapid identification of active substances and feed additives at different manufacture process stages. Moreover, through hyperspectral imaging a fast detection of feed fraud and formulation changes in big batches could be easily achieved.

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COCCIDIOSTATS, commonly used products in order to inhibit coccidiosis (intestinal disease) in farm animals authorised by **Regulation EC 1831/2003**.

Eleven authorised coccidiostats:

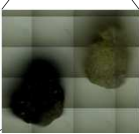
- Lasalocid
- Decoquinate
- Narasin
- Diclazuril
- Nicarbazin
- Monensin
- Robenidine
- Semduramicin
- Halofuginone
- Salinomycin
- Maduramicin



Composition

- Narasin
- Nicarbazin
- Anti-dusting oil
- Microtracer
- Anticaking agent
- Diluent

Select 2 individual particles



Perform MCR

Image of Scores on Comp 1 (24.20%) & Scores on Comp 2 (8.60%) & Scores on Comp 3 (67.19%)

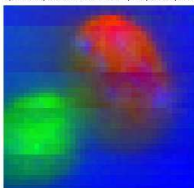
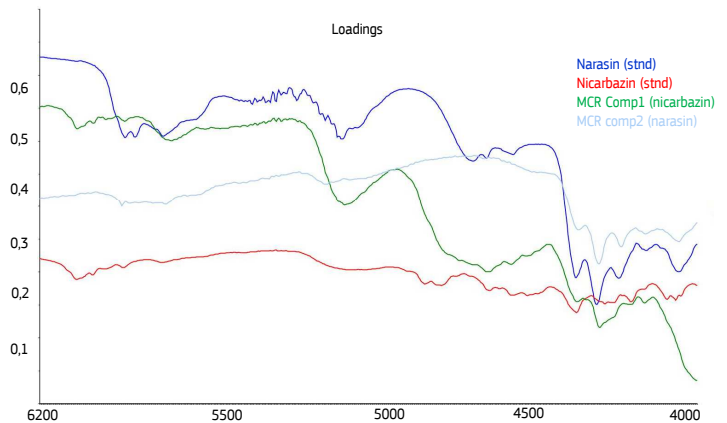
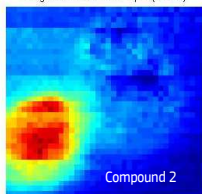
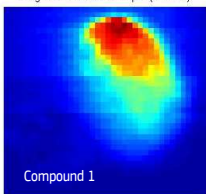


Image of Scores on Comp 1 (24.20%)

Image of Scores on Comp 2 (8.60%)



Black particle - narasin
 White particle - nicarbazin

In order to follow with this feasibility study, next steps will be...

- ✓ Identifying all the authorised coccidiostat by hyperspectral imaging
- ✓ Potential quantitative analysis
- ✓ Determining the formulations of each of the authorised products

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