

# The AOAC INTERNATIONAL Agricultural Community Feed Additives and Contaminants Group Progress Report

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## ABSTRACT

The AOAC Agricultural Materials Community Feed Additives and Contaminants Subgroup focus is the prioritization, development and validation of analytical methods for feed additives and contaminants. The subgroup projects proceed through an established program of work which includes: getting stakeholders identified and involved, establishing method performance criteria, developing a list of potential methods and experts, assigning project leader/study director, obtaining plan approval, carrying out a collaborative study, evaluating data and obtaining final approval, publishing and disseminating approved methods, following up, and identifying financial support. The activities of the group will be presented and progress in the various methods reported. Method needs were reprioritized in 2006. Based on the prioritization process, method projects now underway include feed methods for lasalocid, oxytetracycline, multi-analyte mycotoxin screen, multi-analyte mineral, decoquinat, chlortetracycline, neomycin, and vitamin A. In addition, volunteers to draft method needs statements have been recruited for vitamins D & E, bacitracin, virginiamycin, tylosin, amprolium carbadox and melengestrol acetate. A call for methods is currently out for a multi-analyte mineral method, and the community performance criteria for this method will be presented.

## INTRODUCTION

The Mission of the Feed Additive and Contaminants Group of the Agricultural Materials Community is consistent with the mission of the larger Community, but specific for feed additives and contaminants. The Group's common interest and focus is the prioritization, development and validation of analytical methods that can be used by all stakeholders for the purposes of protecting the public health and safety, regulation, trade, monitoring programs, and quality control of processes and products.

Currently membership of the Feed Additive and Contaminants Group includes representatives from state, federal and local governments, industry, trades, and academia. The volunteers work through consensus to identify and develop needed analytical standards. Membership is open to anyone with an interest and willingness to participate in the activities of the Group.

The Feed Additives and Contaminants Group will tentatively have face-to-face meetings three times a year. Other communication will take place by email or other electronic means, and conference calls. The Group meet during the following: AAFCO Spring Meeting (January), Annual AACO Meeting (typically first week of August), Annual AOAC Meeting (September), (Midwest AOAC meeting)

## METHODS PRIORITIZATION AREAS

### Health and Safety/Adulteration

Human and animal health and safety was established as the number one priority for establishing a method need. Methods for human and animal health concerns might include: methods for natural toxins or contaminants; methods for feed additives intended for one species that are toxic to humans or other species; methods for drugs for which there is concern of potential microbial resistance; methods for natural or synthetic contaminants that might be used with the intention of harm or death (terrorism concerns).

### Economic/Fraud

Economics (meeting label guarantees, a level playing field) and fraud (adulteration of commercial products) was rated the second highest priority for establishing method needs. Product regulations vary from nation to nation and/or from state to state. Companies must register or license feed products and adjust product ingredients and guarantees according to each nation's and/or states' laws or regulations. Uniform acceptance of mutually acceptable methodologies is needed for labeling and other regulatory purposes.

### Availability of Potential Methods

The list of needed methods is quite long. Priority Methods that are already in use, and those that show promise but need further study are a priority because of the rapidness with which they can be made available to stakeholders.

### Political/Public Perception

Public perception was rated the third area of establishing methods needs. The public often perceives that certain issues are a high threat to human health and safety. Sometimes they are a serious threat. In other cases, the perception may not be valid. In either case, when these issues arise, they become a very high priority for all stakeholders involved. Laboratories must often react by using in-house or unproven methods in response to the emergencies. As much as possible, a proactive approach and standardization of analytical methods is necessary.

### New Technology/Updating Methods

Methods that reflect new analytical technology and provide increased applicability to the products in the current marketplace are needed. For example, in the area of animal drugs in feeds, the new animal drug application (NADA) process has been operational for many years, and while the number of ingredients used in animal feed today has expanded greatly from the time of many NADA submissions, most methods have not been updated by the drug sponsors or by FDA. Many of the original methods are microbiological assays, while today instrumental methods are of great interest. Since the list of needed methods in this area is quite long, the Group has prioritized methods that are already in use, and those that show promise and need further consideration for some initial study.

### Trade

Companies that do business internationally need analytical methods that are accepted worldwide to facilitate trade.

### PRIORITIZATION AREA

### WEIGHTING FACTOR

	2004	2006
Health and Safety/Adulteration	4.22	5.25
Economic/Fraud	3.33	4.63
Political/Public Perception	2.89	2.44
New Technology/Updating Methods	2.44	3.50
Trade	2.11	2.13
Availability of Potential Methods	-	3.06

## PROGRAM OF WORK

To ensure that the Feed Additive and Contaminants Group's mission and objectives are successful and meet the needs of the stakeholders, the Group's projects follow systematic procedures and processes as appropriate to each method. A typical plan includes:

### Stakeholders Identified and Involved

The Feed Additives and Contaminants Group seeks to identify and gather stakeholders from federal, state, industry, trade, and international organizations appropriate to each method need. The Group also seeks the input of persons with expertise in the priority methods to participate in the project(s).

### Establishing Method Performance Criteria (Fit for Purpose Methods)

The first item of work for a priority method is to document method needs criteria so that the resulting method can potentially meet the needs of all stakeholders, or as many stakeholders as feasible. Criteria for each method will be established by consensus with input of the appropriate stakeholders and experts.

### Develop a List of Potential Methods and Experts

Methods will next be identified and collected. Expert Review Panels (ERPs) for each priority method will be formed to review submissions based on established performance criteria and choose the best method(s) or identify gaps in methodology. If there are gaps in methodology, the ERPs may modify existing methods to better meet the performance criteria.

### Assign a Project Leader/Study Director

A project leader will be designated to develop a project plan and schedule. For most methods, the charges to the project leader will be to write the method according to AOAC or ISO style, develop a study protocol, identify collaborators, carry out the collaborative study, and write the collaborative study manuscript.

### Plan Approval

The collaborative study protocol will be reviewed by the ERP to assure that it meets the needs of the project and, if applicable, meets the requirements of the harmonized collaborative study protocol. The project leader will address any concerns of the ERP.

### Collaborative Study

The collaborative study process is carried out, and the study report prepared by the project leader.

### Evaluation and Approval

The collaborative study manuscript will be reviewed by the ERP and evaluated against fitness for purpose (methods needs criteria).

### Publishing and Disseminating Approved Methods

Collaborative study manuscripts will be published in the *Journal of AOAC INTERNATIONAL*. Approved methods will be published in the *Official Methods of Analysis of AOAC INTERNATIONAL* and posted on AOAC's website for widest possible distribution, immediately after approval as "First Action."

### Follow up

Follow up comments will be heard at Feed Additives and Contaminants Meetings.

### Identifying Financial Support

Financial support will be needed to help the Group accomplish its mission and goals. Participants will work with AOAC to help identify and get financial support from the organizations and government agencies that will benefit from the work of the community.

## 2004 AND 2006 METHOD RANKINGS

2006 Rank	2004 Rank	Method Needs	2006 Score Method Needs
N/A	8	Lasalocid	N/A
N/A	6	Oxytetracycline	N/A
1	2	Ruminant protein	48.96
2	1	Multi-analyte mycotoxin screen	47.46
3	3	Non-nutritive metals	45.10
4	-	Decoquinat	41.51
5	5	Chlortetracycline	40.96
6	-	Vitamin A	40.82
7	10	Multi-class multi-analyte pesticide residue screen	39.33
8	-	Tylosin	39.10
9	-	Vitamin D	38.39
10	-	Trace-nutritive metals	37.60
11	-	Vitamin E	37.04
12	-	Carbadox	36.75
13	4	Neomycin	35.37
14	-	Amprolium	35.39
15	7	Virginiamycin	32.20
16	-	Ethopabate	31.33
17	-	Ractopamine	30.90
18	-	Morantel Tartrate	30.59
19	-	Ormetoprim/Sulfadimethoxine	30.30
20	-	Nicarbazin A & B	30.27
21	-	Perchlorates	29.23
22	9	Pyrrrolizidine alkaloids	23.83

## NEW NEEDS METHODS IDENTIFIED IN 2006 AND SCORES

2006 Rank	2004 Rank	Method Needs	2006 Score Method Needs
1	N/A	MGA	48.53
2	N/A	Bacitracin/BMD	45.25
3	N/A	Phosphorus	43.39
4	N/A	Robenidine	42.69
5	N/A	Clopidol	42.69
6	N/A	Tiamulin	39.09
7	N/A	Fenbendazole	38.03
8	N/A	Timicosin	38.03
9	N/A	Ivermectin	37.94
10	N/A	Bacitracin	36.13
11	N/A	Levamisole	30.88

## GROUP ACTIVITIES & PROGRESS CHART

Methods	Method Needs Criteria	Call For Methods	SVL*	Project Leader*	AOAC Collaborative Study
Lasalocid	Completed	-	Completed	Charles Focht	Manuscript Reviewed
Oxytetracycline	Completed	-	Completed	Richard Larson & Nancy Thieux	Manuscript Reviewed
Multi-analyte mycotoxin screen	Completed	-	In Progress	Needed	-
Multi-analyte minerals	Completed	X	Needed	Needed	-
Decoquinat	Completed	-	Completed	Anivis Sanchez	In Progress
Chlortetracycline	Completed	X	Needed	Needed	-
Neomycin	Completed	-	In Progress	Julie Driver	-
Vitamin A	X (draft)	-	Needed	Needed	-
Vitamin D & E	Assigned	-	Needed	Needed	-
Bacitracin	Assigned	-	Needed	Needed	-
Virginiamycin	Assigned	-	Needed	Needed	-
Tylosin	Assigned	-	Needed	Needed	-
Amprolium	Assigned	-	Needed	Needed	-
Carbadox	Completed	-	In Progress	Jane Sabbatini	-
MGA	Assigned	-	Needed	Needed	-

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