



Canadian Fertilizer
Products Forum

Forum Canadien sur
les produits fertilisants



WORKING GROUP REPORT ON

MARKETPLACE MONITORING



Prepared for the
Canadian Fertilizer
Products Forum





THE CANADIAN FERTILIZER PRODUCTS FORUM

The Canadian Fertilizer Products Forum (CFPF) was launched in the fall of 2006 to provide a forum for stakeholder input into the regulatory process for fertilizers and supplements. The CFPF brings together producer groups, industry representatives, non-governmental organizations and regulatory officials from across the country to provide recommendations to improve the regulatory system.

The CFPF recognizes that fertilizers and supplements are the most important crop input. Agricultural producers in Canada spend about \$3 billion on fertilizers and supplements per year, more than on pesticides, seeds, fuel, or any other crop inputs.

ACKNOWLEDGEMENTS

Full funding for this project was provided by Agriculture and Agri-Food Canada through the Advancing Canadian Agriculture and Agri-Food (ACAAF) Program.

Agriculture and Agri-Food Canada (AAFC) is pleased to participate in this project. AAFC is committed to working with industry partners to increase public awareness of the importance of the agriculture and agri-food industry to Canada. Opinions expressed in this document are those of the Canadian Fertilizer Products Forum and not necessarily those of AAFC.





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HIGHLIGHTS

The Marketplace Monitoring and Labelling Work Group was commissioned by the Canadian Fertilizer Products Forum (CFPF). This Work Group focused on many issues within this area including enforcement, labelling review, labelling definitions, and monitoring for a wide number of products. Recommendations were made in most areas. Specifically:

☀ Enforcement

- Identification of scope of issue
- Steps taken to address unregistered and out of compliance fertilizer and supplement products in Canada
- Flagged the issue for the Canadian Food Inspection Agency
- Distributed print-ready article on importance of non-compliant products to six greenhouse, nursery, landscape, and turf publications
- Recommended trade shows for attendance of Canadian Food Inspection Agency (CFIA) enforcement officers

☀ Labelling

- Labelling of fertilizers
- Changes/additions to definitions in Schedule IIA and other memo's and policy documents

☀ Canadian Fertilizer Quality Assurance Program (CFQAP)

- Proposal on path forward for CFQAP
- CFQAP report card/grading systems
- Testing protocols for fertilizers
- Sampling training
- Deficiency levels in fertilizers

☀ Quality Assurance Monitoring for Other Products

- Review of Compost Quality Assurance Program
- Status with other product quality monitoring systems



DESCRIPTION OF CONSULTATION PROCESS

The Marketplace Monitoring and Labelling Work Group was extremely active, with a dedicated volunteer corps that set an ambitious set of targets. Meetings occurred regularly throughout the year. The group also agreed to create two special sub-committees that reported to the Marketplace Monitoring and Labelling Work Group on the topics of labelling definitions and the CFQAP. (See Appendix A for a list of work group members.)

Meeting dates were as follows:

- ☀ Marketplace Monitoring & Labelling Work Group
 - October 22, 2007
 - August 30, 2007
 - June 28, 2007
 - March 28, 2007 (in-person meeting)
 - February 15, 2007
 - November 29, 2006 (in-person meeting held during CFPF November 2006 meeting in Ottawa)
 - November 20, 2006
 - November 14, 2006
 - November 6, 2006
 - October 30, 2006

- ☀ Labelling Definitions Sub-committee
 - August 22, 2007
 - June 21, 2007
 - May 2, 2007
 - April 19, 2007
 - May 14, 2007
 - February 26, 2007
 - February 12, 2007
 - February 1, 2007
 - November 29, 2006 (in-person mtg)
 - Consultation on specific definitions with experts on various topics via e-mail and telephone

- ☀ CFAQP Sub-committee
 - October 25, 2007
 - October 11, 2007
 - September 6, 2007
 - June 27, 2007
 - February 16, 2007
 - January 19, 2007
 - Request for input was directly sought from CFI, OABA, CAAR, IDEA, AFI, QFM regarding the path forward document



ISSUES CONSIDERED BY THE WORK GROUP (AND SUB-COMMITTEES)

Marketplace Monitoring & Labelling Work Group

- ☀ Enforcement
 - Discussion on the scope and presence of unregistered or out of compliance fertilizer and supplement products in Canada – identified as considerable
 - Identification of the need for improved enforcement protocols
 - Education campaign with lawn and garden retailers, golf course product distributors, potting soil companies, etc.

- ☀ Labelling
 - Review of labelling review process and issues arising from it
 - Requested consumer research on labelling preferences – little information ensued as most information was considered corporate confidential
 - Wide array of options identified to improve labelling standards and process, including:
 - Standard label format by product type
 - Partially regulated labels
 - Regulatory inefficiencies identified
 - Recommendations made to improve speed of review process
 - Improved clarity for labeling requirements

- ☀ Quality Assurance
 - Presentation by Jim McCullagh, Canadian Seed Institute
 - Presentation by Susan Antler, Composting Council of Canada
 - Discussion of ideas for quality assurance on supplements, micronutrients: possible exemption considered due to registration processes
 - Reviewed possibility of various monitoring systems
 - How can a 3rd party monitoring system link to ISO?
 - A proposal was presented and reviewed by the work group (see Appendix I)
 - Who/what organization would be acceptable to be the 3rd party?
 - Which groups could be responsible for establishing work standards by sector?
 - What options exist for those who do not want to participate in a 3rd party monitoring system?

Labeling Definitions Sub-committee

- ☀ Review and compare definitions in Schedule IIA and The Association of American Plant Food Control Officials (AAPFCO)



- Are existing definitions adequate?
- If not, which ones need rework?
- What products are missing from the Canadian list?
- Which AAPFCO definitions, if any, should be brought forward for addition to the Canadian list?

- ☀ Organic definitions and the new regulatory environment for “Organic” in Canada

CFQAP Sub-committee

- ☀ Legislative and Regulatory requirements were reviewed, as well as CFIA’s reports on program compliance and participation in CFQAP
- ☀ Sampling procedures
- ☀ Education programming
 - There is a need for an education program on sampling. Although one was conducted years ago, the feeling is there is a need for a refresher.
- ☀ Testing Protocols, soluble versus total extraction
 - By adopting a test using total extraction rather than soluble, would the testing system be simplified, cost reduced, and turnaround time reduced? Such a change requires a regulatory amendment.
- ☀ Tolerance levels
 - In light of the work completed by the sub-committee and the current AAPFCO deficiency levels, should Canada reevaluate its tolerance levels? Such a change requires regulatory amendment.
- ☀ The CFQAP Grading System/Report Card – The inadequacies and appropriateness of this system were discussed at length.
- ☀ Options were identified for CFQAP, including:
 - Status quo
 - Modify current system but maintain as CFIA program
 - Establish industry-monitoring program
 - Eliminate the bulk-blended fertilizer program



RECOMMENDATIONS/OPTIONS MADE BY WORK GROUP

The following areas of consensus were developed on enforcement, labelling, labelling definitions, and the Canadian Fertilizer Quality Assurance Program and are recommended for implementation:

Recommendations on Enforcement

Members of the Canadian Fertilizer Products Forum report there are recurring and sizeable problems with unregistered, improperly labelled, or illegally repackaged fertilizer and supplements being sold, particularly in the lawn and garden market. The situation remains largely unresolved, resulting in potentially dangerous situations for consumers and the environment, plus an uneven playing field for companies that invest in complying with CFIA standards.

The Work Group commended CFIA for highlighting the importance of enforcement in its strategic plan and its new education program for enforcement officers. These are critical steps in resolving the issue. The Work Group encourages CFIA to undertake further enforcement activities in the area of unregistered product and out of compliance labels. As well, it is believed many retailers may not be aware that these products are not in compliance with the regulations and education is also needed. (See Appendix B for recommendations submitted to CFIA.)

Recommended actions for CFIA include:

- ☀ Send a letter to lawn and garden retailers to make them aware of the regulations.
- ☀ Implement an enforcement monitoring program to follow up the letter.
- ☀ Send out a press release on the nature of the fertilizer regulations and advising them to avoid unregistered products.
- ☀ Post a list of registered products on the CFIA web site so that retailers can verify legitimate products.
- ☀ Alert CFIA enforcement officers in all regions of problem products and train them with case studies. In most cases, these products are accessing retail networks which are not limited to one region for distribution.
- ☀ Current enforcement affects only the single retail outlet found selling, rather than the entire chain store or national distributor. Change the CFIA enforcement to allow the officers to go after source: chain store head offices, distributors and importers in both retail and turf professional fertilizers and supplements.
- ☀ Focus enforcement on problem sectors, rather than simply giving general quotas to enforcement officers.

The Work Group itself prepared an article on fertilizer products and circulated it to industry journals in the lawn, garden and nursery trades (See Appendix C for details). It also identified key events in the industry where CFIA could undertake an education campaign and supplied that information to the CFIA.



The Forum is prepared to advise and work with CFIA on the rollout of an education and enforcement campaign. The industry will assist with education at key events and industry publications.

Recommendations on Labelling

Issues related to the labelling of fertilizer products have been discussed at several meetings since the first CFPPF Workshop in March of 2006. The Marketplace Monitoring and Labelling Work Group discussed a variety of issues related to labelling fertilizer products, and contained in this report is a summary of those issues.

Key issues related to the labelling of fertilizer products that were considered as either very important or important by the industry include:

- ☀ Achieving clarity through manuals, guidelines, and training programs
- ☀ Inconsistencies in label review
- ☀ Updating delivery standards
- ☀ Regulate text not artwork
- ☀ Simplify re-registration process
- ☀ CFIA needs to list text of registered products on web site

Labelling Issues Top of Mind with Industry

The fertilizer industry has identified several labelling issues that are top-of-mind with all sectors across the industry. These issues are ranked in order of importance and were rated as either very important or important by industry. They include:

1. Achieving clarity through manuals, guidelines, and training programs

The CFIA could offer greater clarity about what it requires on labels by creating manuals and guidelines. In addition, a training program could be developed for use within the CFIA on how the rules should be applied. In tandem with this, there should be an educational campaign aimed at registrants that is co-developed with industry.

There is considerable confusion in the industry, especially for people new to the Canadian market or to the labelling requirements, about what a product label requires to be compliant with CFIA. This has been further complicated by CFIA removing the fertilizer guidelines from their web site while the guidelines are being updated. A CFIA training session would alleviate many industry concerns and would address:

- i. Requirements for labelling fertilizers in Canada
- ii. How labels are reviewed. This topic would increase industry's knowledge base while having the long-term effect of increasing the acceptance rates of labels as originally submitted.



With more reference materials and education available to registrants the review process should be streamlined and review periods reduced. Industry considers this issue to be very important.

2. Inconsistency in label review by the CFIA

The Canadian Food Inspection Agency needs to be consistent when it comes to terminology and interpretation of label content and format. Industry experience indicates that, with staff turnover and differences in interpretation, there is a lack of consistency in how staff review labels. By participating in training, reviewers would better understand industry concerns and possibly develop a more consistent approach in label review.

Industry considers this a very important issue and it is a serious point of contention with companies attempting to get approval for new labels to maintain viability in the marketplace. In addition, industry finds it extremely frustrating when dealing with the reviewer inconsistencies that result from staff turnover at CFIA.

3. Updating delivery standards

There is serious concern in the industry as the current backlog for label review is 2-3 years. Service delivery standards for registration and re-registration at CFIA should be updated. The current backlog of products in the queue for review is extensive. Industry suggests running two queues' one for NR (new registrations), and one for RR (re-registrations) with the importance on NR. Currently, all registrations are lumped together by date received, with no priority given.

If the label has already been approved, and there have been no policy changes that would impact changes to the label since it was last approved by the CFIA, does this label need to go through the same rigorous review as a new label?

4. Simplify Re-registration process

When it comes to product re-registration, if registrants are not requesting changes to labels and there have been no regulatory or policy changes that would result in a required label change, industry suggests no label review. With no changes to the label, there is no need for the CFIA to fully review a label that was previously approved by CFIA. This will speed up re-registrations and reduce the CFIA workloads.

- ☀ To guarantee there are no changes, the company could sign a legal document stating the label text on their currently marketed label matches the last reviewed and approved label.
- ☀ If only minor label changes are required, to avoid disposal of existing packaging stocks and costly reprint charges, the company would be allowed to make the changes at the next printing run or no later than 3 years after the re-registration was received by the CFIA. A copy of the revised label would be required to be submitted at next renewal for verification.

This type of change could significantly reduce the existing 2-3 year backlog for label review. A definition of what constitutes minor label change will be required.



5. Regulate text not artwork

CFIA should regulate the text of the label rather than the artwork. This would be consistent with the process used by the Pest Management Regulatory Agency (PMRA). As there is concern on CFIA's part that the text label is not always the market label, CFIA could consider using a legally signed document from registrants that verifying that the marketplace label text matches the approved text label. The current process is challenging for industry due to the time and cost of updating artwork before CFIA approves it.

6. CFIA list text of registered products on web site

The CFIA should list label text of registered products on their web site. This would be helpful for retailers and manufacturers. Also, whenever the CFIA approves a label that does not need registration, they should post those as well. This would allow the public, including retailers, to be able to validate if a product is compliant/registered.

Labelling Sub-committee

The Labelling Sub-committee conducted an extensive review of definitions included in Schedule IIA and in the AAPFCO guidelines. The goal of the review was to update Canadian definitions that would be included in Schedule IIA, trade memos, and other policy documents.

The sub-committee has made more than 40 recommendations for inclusion. See Appendix E for a complete listing of the recommendations.

While consensus was reached on most definitions, agreement was not reached on definitions for slow- and controlled-release fertilizers, and several other definitions are still under review by the committee. Refer to Appendix F for additional details.

CFQAP Sub-committee

There are concerns about participation and compliance levels in the Canadian Fertilizer Quality Assurance Program (CFQAP). The program was developed as a voluntary program for bulk blend fertilizer facilities, and participants include nearly 1,200 bulk blend fertilizer facilities in Canada. The sub-committee has made the following recommendations:

1. Recommendations on CFQAP Report Card/Grading System

The current CFQAP report card does little to create value for either the customers or the businesses it was intended to serve. The CFQAP sub-committee recommends that the current grading system be replaced with a pass/fail type grading system that issues companies either a rating of "compliant" or "non-compliant" and that all other information obtained through the



testing of fertilizers be confidential. This recommendation dovetails with the committee's current work on revisions to the CFQAP/industry-monitoring system.

2. Recommendations on Testing Protocols for Fertilizers

The CFQAP sub-committee of the Marketplace Monitoring and Labelling Work Group makes the following recommendations regarding the testing protocols used for fertilizers:

The committee agrees that there are several benefits of switching from the current solubles test for fertilizers to a test that measures totals. Among them are the fact that the "totals" test is:

- ☀ faster,
- ☀ less sensitive to moisture, and
- ☀ less costly. It is estimated that the test would cost nearly half the price of current testing requirements as outlined in the *Fertilizers Act*.

Testing experts indicate that the "totals" test is as effective in determining quality as the solubles test.

Industry members believe that a more simple, equally effective, and less costly test would benefit the industry in promoting the use of testing for not only compliance with the *Fertilizers Act* and but also for their own internal quality control program.

3. Recommendations on Sampling Training

The CFQAP sub-committee of the MML work group makes the following recommendations regarding sampling training:

The committee agrees that out-of-compliance test results can occur from the use of incorrect procedures to collect, store, and send bulk-blended fertilizer samples for testing.

The committee also agrees that while there have been training initiatives that have focused on how to sample in the past, with changes in bulk blending equipment and normal staff turnover, it is important that a new initiative be undertaken that once again focuses on correct procedures for sampling.

The committee agrees that the current number of samples of 8 samples/year is likely adequate for testing purposes.

The committee agrees that the emphasis for sampling training should focus on:

- ☀ Proper timing of samples – the samples should be spread throughout the blending season (approximately quarterly)
- ☀ Samples must be properly collected. Special care must be taken to sample properly when using high capacity blending equipment
- ☀ Samples must be properly stored or be sent to the testing lab immediately after being taken to avoid taking on moisture. Moisture in samples can significantly alter test results



An education program should be developed in cooperation with Ontario Agri Business Association, Canadian Association of Agri-Retailers, Atlantic Fertilizer Institute, the CFIA, and other appropriate stakeholders. The education program will benefit from training materials and training manuals from Ontario Agri Business Association (OABA), CFIA and AOAC. The training materials will address:

- ☀ Proper ways to sample with various types of blending equipment
- ☀ Proper techniques for storing and shipping samples
- ☀ Outline the timing of when samples should be taken
- ☀ Identify the benefits of proper sampling and the costs of improper sampling

Rather than a training session, the sampling training information should be presented on each cooperating organization's web site, including the CFIA. This approach will increase the number of access points for customers, ultimately increasing knowledge within the industry. By developing the training initiative in co-operation with a number of organizations, promotion of the training tools will increase substantially.

4. Recommendations for Deficiency Levels in Fertilizers

The CFQAP sub-work group of CFPF recommends reassessing the calculation of tolerances. CFIA should look at the exact magnitude of variability due to sampling using the Horowitz standard deviation, and modify the calculation in the table provided and use it in schedule I of the Act for allowances in deficiencies.

The specific recommendation is included in Appendix D.

5. Recommendations: A Quality Monitoring System for Bulk-blended Fertilizers

The sub-committee has reviewed the existing Canadian Fertilizer Quality Assurance Program, seeking options for improvement. The committee developed a proposal titled "A Path Forward for CFQAP". A second proposal developed by the Canadian Fertilizer Institute, called "Fertilizer Quality Program Proposal", has also been considered. See Appendix G and Appendix H for details on these two proposals.

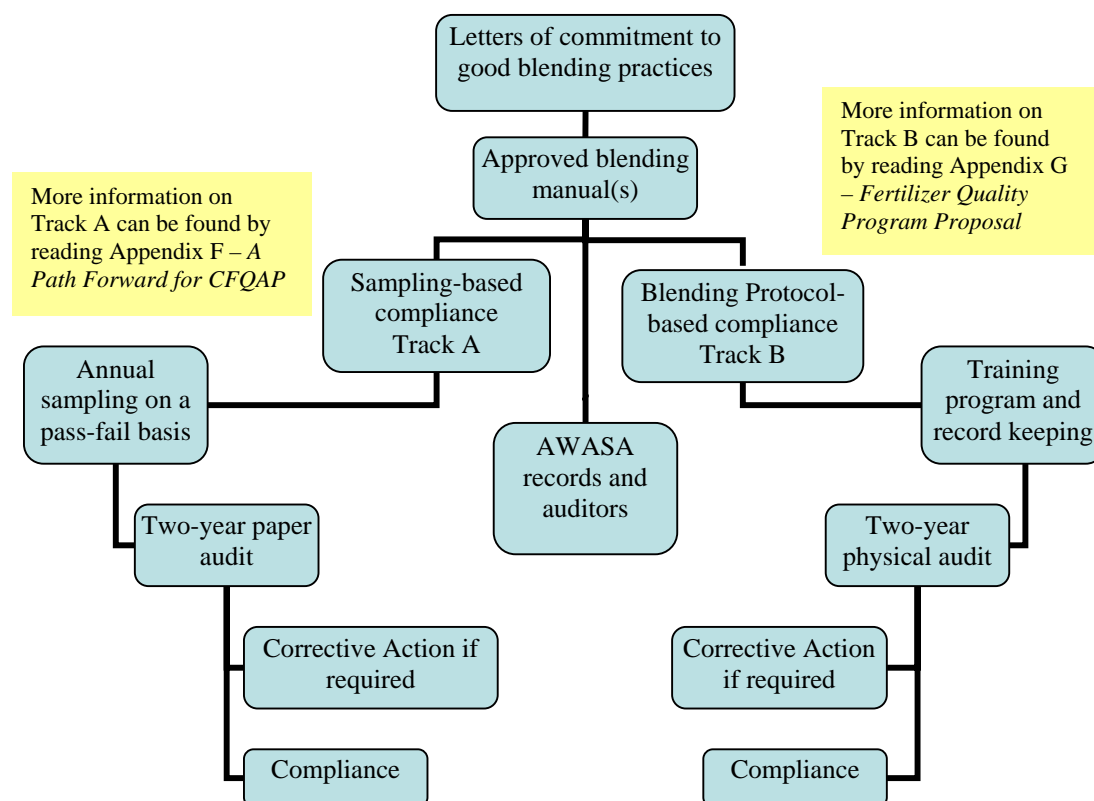
Both proposals are based on several common principles including:

- ☀ Industry-managed program with endorsement from CFIA
- ☀ A pass/fail based system with opportunity to be re-certified upon failure
- ☀ Regular audits performed
- ☀ Regular sampling for testing
- ☀ Training to ensure proper sampling procedures being used
- ☀ Creation of a certificate and associated marketing program to promote high quality standards used in the industry



The sub-committee believes that it is necessary to create a “twin-track” approach to monitoring and assuring fertilizer quality at the retail level – a “testing protocol” or a “blending protocol”. Retailers could choose either track based on their individual circumstances. The diagram below shows a pathway for how the system would work.

Diagram 1: Fertilizer Blending Quality Program with Two Tracks



Although the details on how the program would work still have to be finalized, there is consensus on the basic principles of a new monitoring system.

The sub-committee indicated that participation in any type of voluntary quality monitoring program will not improve as long as the CFIA continues with their own separate inspection and testing program – retail blenders will simply have no incentive to adopt our recommended two-track system. Unless the CFIA adopts this system as their inspection regime, it will receive only limited industry support and will ultimately have the same fate as the current fertilizer quality monitoring system. This two-track program outlined above is intended not just to be an improved version of the current fertilizer quality monitoring program, but an integrated regime used by both CFIA and industry.



AREAS FOR FUTURE CONSIDERATION

Consensus was found on a wide array of issues through the work and volunteerism of the Marketplace Monitoring and Labelling Work Group. Some areas were not resolved, either due to an absence of consensus or the magnitude of the workload.

1. Organic

Issues were raised about how the new Organic Regulations were developed and how they will interact with the Fertilizer Act and Regulations. A diversity of opinion exists and consensus could not be reached on which regulations should take precedence and individual members will be pursuing their own positions.

2. Quality Assurance Systems

Early in the process, the work group learned about different quality assurance systems. Presentations by the Canadian Seed Institute and the Compost Council of Canada offered different models of how to conduct quality assurance.

Options were identified about means to conduct quality assurance for a range of products in the fertilizer and fertilizer products areas. Many sectors are pleased with the existing mechanisms for quality assurance, including specifically supplements and inoculants. It was agreed in future that a product-by-product review be made of quality assurance systems but that no single macro-system was appropriate to cover quality assurance for the industry.

See Appendix I for the options.

3. Labelling

The Work Group recommended market research be conducted on how consumers use and understand fertilizer labels. That research should be used as a basis for making changes in label requirements.

4. Labelling Definitions

There are several definitions which remain under consideration by the Labelling Sub-committee. In addition, the Sub-committee was unable to achieve consensus on the determination of a definition for slow- and controlled-release fertilizers. Refer to Appendix F.



SPECIAL THANKS

The Marketplace Monitoring & Labelling Work Group wishes to extend special thanks to the following volunteers who made extraordinary efforts to developing proposals and conducted additional research:

- ☀ Paul Lefebvre, Work Group Chair (Gardenworth/GOABA Lawn & Garden Committee)
- ☀ Papken Bedirian (Agri-Food Laboratories)
- ☀ Greg Patterson (A&L Canada Laboratories East, Inc.)
- ☀ Arlene Kappheim (Spectrum Brands Canada Inc.)
- ☀ Dave Watson (Spectrum Brands Canada Inc.)



APPENDIX A – WORK GROUP MEMBERS

Marketplace Monitoring & Labelling Work Group Members

Paul Lefebvre (chair)	Gardenworth/OABA Lawn & Garden Committee
Achille Correggia	Agrium Advanced Technologies
Andréanne Bilodeau	Bureau de normalisation du Québec (BNQ)
Andrew Senkiw	Canadian Association of Agri-Retailers
Arlene Kappheim	Spectrum Brands Canada Inc.
Benoit Dubé	CFIA
Catherine Jefferson	Canadian Water and Wastewater Association/Curry Jefferson & Associates Environmental Services Inc.
Dave Watson	Spectrum Brands Canada Inc.
Don McCabe	Soil Conservation Council of Canada
Eric Bosveld	Agromart
Garry Hnatowich	Philom Bios Inc.
Geneviève Roy	Premier Tech Biotechnologies
Irene Karas	Aquatrols Corporation
Ken Panchuk	Saskatchewan Agriculture & Food
Luc Mougeot	CFIA
Rod Kidnie	Compost Council of Canada/All Treat Farms Ltd.
Ryan Ring	CFIA
Shaun Purcell	Spectrum Brands Canada Inc.
Susan Antler	Composting Council of Canada
Sylvain Allard	Bureau de normalisation du Québec (BNQ)
Troy Bolt	Viterra
Valerie Bertrand	Scotts Company
Robynne Anderson	Issues & Insights
Kelly Green	Issues & Insights



Labelling Sub-Committee Members

Paul Lefebvre (Chair)	Gardenworth/OABA Lawn & Garden Committee
Adam Giles	CFIA
Arlene Kappheim	Spectrum Brands Canada Inc.
Benoit Dubé	CFIA
Bob McNaughton	Sylvite
Brian Birrenkott	Scotts Company Canadian Water and Wastewater Association/Curry Jefferson & Associates Environmental Services Inc.
Catherine Jefferson	
Dave Watson	Spectrum Brands Canada Inc.
Geoff Gyles	Wolf Trax
Irene Karas	Aquatrols Corporation
John Burcombe	Mouvement Au Courant
Ken Panchuk	Saskatchewan Agriculture and Food
Norm Davy	Agrotain International
Sylvain Lavoie	Yara
Tim Healey	Agrotain International
Valerie Bertrand	Scotts Company
Kelly Green	Issues & Insights
Robynne Anderson	Issues & Insights



CFQAP Sub-Committee Members

Ken Clancy (Chair)	Canadian Association of Agri-Retailers/Okanagan Fertilizer Ltd.
Adam Giles	CFIA
Andréanne Bilodeau	Bureau de normalisation du Québec (BNQ)
Art Van Asselt	Sylvite Agri-Services Ltd.(OABA)
Benoit Dubé	CFIA
Bob Evans	Independent Dealer Entrepreneurial Association
Bob McNaughton	Sylvite Sales
Brian Coutts	Thompsons Limited
Claude Gagnon	Oligosol Ltd.
David Smith	Canvendish Agri/Atlantic Fertilizer Institute
Denis Potvin	AQIC (Association quebecoise des industriels du compostage inc.)
Don Henderson	Agromart Group
Don McCabe	Soil Conservation Council of Canada
Don McLachlan	Southern Co-operative Services
Greg Patterson	A&L Canada Laboratories East, Inc.
Ian Mclachlin	A&L Canada Laboratories East, Inc.
Jeff Kisiloski	JRI
Jennifer Hale	Plant Products Co. Ltd.
Marc de Wit	CFIA
Maureen Reilly	Environmental consultant
Michel Champagne	Agro-Enviro-Lab
Nathalie Maltais	La Coop federee/QFM
Papken Bedirian	Agri-Food Laboratories
Pascal Weijters	Akzo Nobel Functional Chemicals
Paul Lefebvre	MMLWG Chair/Gardenworth/OABA Lawn & Garden
Peter Northcott	Atlantic Fertilizer Institute
Ron Campbell	Ontario Agri Business Association
Ross Mireau	Potash Corp of Saskatchewan
Shaun Purcell	Spectrum Brands Canada Inc.
Stephen Paget	Cavendish-Agri
Thea Saarimaki	HydraLogic Systems Inc.
Tracey Forester	Ontario Agri Business Association
Troy Bolt	CFI Products Committee/Viterra
Yvan Lacroix	Quebec Fertilizer Manufacturers' Association
Robynne Anderson	Issues & Insights
Kelly Green	Issues & Insights



APPENDIX B – ENFORCEMENT RECOMMENDATIONS SUBMITTED TO THE CFIA¹

May 25, 2007

Glyn Chancey, Director, Plant Production Division
Canadian Food Inspection Agency
Floor 8, Room 304
2 Constellation Crescent
Ottawa, ON
K1A 0Y9

Dear Glyn:

Members of the Canadian Fertilizer Products Forum report there are recurring and sizeable problems with unregistered, improperly labelled, or illegally repacked fertilizer and supplements being sold, particularly in the lawn and garden market. The situation remains largely unresolved resulting in potentially dangerous situations for consumers and the environment, and an uneven playing field for companies that invest in complying with CFIA standards.

We commend CFIA for highlighting the importance of enforcement both in your strategic plan and in your new education of enforcement officers. These are critical steps in resolving the issue. We ask that you undertake further enforcement activities in support of your strategic plan. To achieve this, we recommend several actions that CFIA can implement quickly including:

1. Send a letter to lawn and garden retailers to make them aware of the regulations.
2. Implement an enforcement monitoring program to follow up the letter.
3. Send out a press release on the nature of the fertilizer regulations and advising them to avoid unregistered products.
4. Post a list of registered products on the CFIA web site so that retailers can verify legitimate products.
5. Alert CFIA enforcement officers in all regions of problem products and train them with case studies. In most cases, these products are accessing retail networks which are not limited to one region for distribution.

¹ Note: Recommendation was sent on CFPPF letterhead.



The Forum is prepared to advise and work with CFIA on the rollout of an education and enforcement campaign. The industry will assist with education at key events and industry publications.

We look forward to discussing and hopefully moving to rapid implementation of these recommendations.

Sincerely,

Craig Rickard, Chair
Canadian Fertilizer Products Forum

cc. Paul Lefebvre, Chair Marketplace Monitoring & Labelling Work Group, CFPF
cc. Clyde Graham, CFPF Secretariat



APPENDIX C – TAKING STOCK ARTICLE

Article for Immediate Release

By: Kelly Green

Taking Stock – Legal or Illegal?

AUGUST 13, 2007 – Is your stock of fertilizer and supplement products legal? Today, numerous products on store shelves and in warehouses have not received approval by Canadian regulators or do not meet Canadian regulatory standards. These illegal products could put your business at risk of product detention or fines. Here are some tips to reduce your risks.

By law, all fertilizer and supplement products sold in Canada must be safe, effective, and properly labelled. Many of your suppliers take these rules seriously, and invest time and money ensuring their products are compliant with these Canadian standards. However, there are other suppliers that simply do not follow the rules selling you unregistered, mislabelled and otherwise non-compliant products, or products that were illegally imported and re-packaged. In fact, during one shopping spree several designated shoppers located more than 50 illegally-sold products from several large-scale consumer outlets in Canada. Ensuring compliance with the standards set out for fertilizer and supplement products in Canada is the responsibility of the Canadian Food Inspection Agency.

As a distributor or retailer of these products, you are responsible for ensuring that what you sell is legal and in compliance. In the event that you are found to be selling non-compliant products, even if unintentionally, a CFIA inspector may detain that inventory until the product problem has been rectified. This could mean that: a) you will have to carry the product until next season; b) the inventory of illegal products could be worthless if the manufacturer does not resolve the problem; c) you may be responsible for making corrective actions and assuming 100% of the costs; or d) you could be fined tens of thousands of dollars depending on the severity of the offence. The severity of the infraction normally depends on the potential harm that the product could create for humans or the environment, the level of intent, and your history on similar infractions.

Products regulated by the CFIA include:

- moisture retention products,
- wetting agents,
- inoculants,
- fertilizers (including fertilizer-pesticides and micronutrient fertilizers),
- composts, and plant growth regulators when they are sold in, or imported into, Canada.



APPENDIX D – RECOMMENDATIONS FOR DEFICIENCY LEVELS IN FERTILIZERS

The CFQAP sub-work group of CFPF recommends reassessing the calculation of tolerances.

Without having knowledge about the criteria used in establishing allowed deficiency levels in table I of schedule I of the *Fertilizer Regulations* or the investigational allowances tabled in the Association of American Plant Food Control Officials, it is safe to say that these tolerances are not based on recently popularized Horowitz Function of predicted standard deviation related to concentration.

The Horowitz relationship of concentration and standard deviation is given by the following formula:

$$SD = 0.023C^{0.826}$$

Where, C is the concentration of analyte. This predicated standard deviation (uncertainty) is based on data taken from inter-laboratory proficiency testing programs. Samples associated with this prediction formula are very homogeneous and have passed rigorous uniformity tests. The observed variations are mostly related to analytical and method variability.

It is expected a larger source of variability to be associated with sampling, both population sampling and laboratory sampling. For discussion purposes, assume sampling variability to be 2x that of Horowitz predicted standard deviation derived from inter-laboratory testing data.

Accordingly if:

Horowitz standard deviation	= SD_1
Sampling standard deviation	= $2 \times SD_1 = SD_2$
Combined standard deviation	= SD_C

$$SD_C = \sqrt{SD_1^2 + SD_2^2}$$



Having the above approach, it is recommended that the science branch of the CFIA look into the exact magnitude of variability due to sampling with respect to Horowitz standard deviation, and modify the calculation in the table provided and use it in schedule I of the *Fertilizer Regulations* for allowances in deficiencies.

It is also recommended that in the calculation of Combined Nutrient Level (CNL) not to include the price factors, as the value of a number has no influence on quality. Accordingly, if a fertilizer has the following guarantee and analytical results:

	<u>Guarantee</u>	<u>Found</u>
N	10	9.4
P ₂ O ₅	15	14.7
K ₂ O	20	20.0

Then the combined nutrient index would be:

$$\frac{9.4 + 14.7 + 20}{10 + 15 + 20} \times 100 = 98\%$$

This type of change to the tolerances would require a regulatory amendment.

APPENDIX E – DEFINITION RECOMMENDATIONS

DEFINITION RECOMMENDATIONS FROM MML WORK GROUP				
SCHEDULE II NAMES AND STANDARDS OF FERTILIZERS AND SUPPLEMENTS			AAPFCO DEFINITIONS Per 2004 Official Publication	
Item	Composition	Designated Names	Item	Composition
NITROGEN PRODUCTS				
1.2	Ammonium salt of sulphuric acid containing not less than 20% nitrogen Recommendation: Minimum level of N be set at 18% to allow for advancements in technology	Ammonium sulphate (Specify grade.)	N-7	Sulfate of Ammonia (ammonium sulfate) is chiefly the ammonium salt of sulfuric acid. It shall contain not less than twenty and five-tenths percent (20.5%) nitrogen.
1.5	Calcium salt of nitric acid containing not less than 15% nitrogen Recommendation: Minimum level of N be set at not less than 12%	Calcium nitrate or nitrate of lime (Specify grade.)	N-3	Calcium Nitrate (fertilizer quality) is chiefly the hydrated calcium salt of nitric acid. It shall contain not less than twelve percent (12%) nitrate nitrogen.
	Recommendation: Include the AAPFCO definition N-4 in Schedule IIA as this product is commonly used in the greenhouse and hydroponics industry in Canada.	Potassium Nitrate	N-4	Nitrate of Potash (potassium nitrate) is chiefly the potassium salt of nitric acid. It shall contain not less than twelve percent (12%) nitrogen and forty-four percent (44%) Soluble Potash.

	<p>Recommendation: Include references to definitions already recognized by the CFIA Feed Regulations which are shown at http://laws.justice.gc.ca/en/showdoc/cr/SOR-83-593/sc:4/en#anchors:4</p>	Feed materials already recognized by CFIA Feed Regulations		
1.14	<p>The rendered, dried, ground and screened organic product derived from waste household food materials</p> <p>Recommendation: Waiting for definition response from Biosolids WG.</p>	Garbage tankage (Specify grade.)	N-15	Garbage Tankage is the rendered, dried and ground product derived from waste household food materials.
1.16	<p>Dried and ground excreta of birds or other animals with or without litter, containing not less than 50% organic matter and designated as to kind and condition</p> <p>Recommendation: The minimum organic matter be dropped to 40% to address current product attributes on the market.</p>	Manure (Specify grade.)		
1.19	<p>Products made from sewage, freed from grit and coarse solids, that are dried, ground and screened</p> <p>Recommendation: Potential definition changes from Biosolids WG.</p>	Processed sewage (Specify grade.)	N-10	Activated Sewage Products are those made from sewage freed from grit and coarse solids and aerated after being inoculated with micro organisms. The resulting flocculated organic matter is withdrawn from the tanks, filtered with or without the aid of coagulants, dried, ground and screened.
	<p>Recommendation: Adopt AAPFCO definition.</p>	Urea-Formaldehyde Products (water soluble)	N-28	Are reaction products of urea and formaldehyde which contain at least thirty percent (30%) nitrogen, largely in water soluble form. Some slowly available nitrogen products are present. Stable aqueous solutions may be prepared from these materials. The reaction products shall contain a maximum of fifty-five percent (55%) free urea, with the remainder of the urea being chemically combined as metholureas, methvlolurea ethers, and/or



				Methylenediurea (MDU) and Dimethylenetriurea (DMTU)
1.25	<p>A commercial product principally of the formula $(\text{NH}_4)_2\text{S}_2\text{O}_3$ that contains not less than 12% nitrogen and 26% sulphur</p> <p>Recommendation: The definition should be updated to have a sulphur minimums of 10% to reflect industry use of 15-00-20</p>	Ammonium thiosulphate (Specify grade.)	N-37	Ammonium thiosulphate (fertilizer quality) is a commercial product composed principally of $(\text{NH}_4)_2\text{S}_2\text{O}_3$. The guaranteed percentages of nitrogen and sulfur shall be stated as part of the name. It is a nitrification inhibitor.
	Recommendation: Inclusion of AAPFCO definition N-38 in Schedule IIA	Ammonium Phosphite	N-38	A product obtained when phosphorous acid is neutralized with ammonium hydroxide (aqueous) and consists primarily of diammonium phosphate $[(\text{NH}_4)_2\text{PO}_3]$ in a stable aqueous solution. The phosphorus atom is in the oxidation state of III. It does not contain any significant amount of available phosphate.
1.29	<p>The ground residues of soybeans from which oil has been extracted and which contain not less than 6% nitrogen</p> <p>Include references to definitions already recognized by the CFIA Feed Regulations, which are shown at http://laws.justice.gc.ca/en/showdoc/cr/SOR-83-593/sc:4/en#anchorsc:4 for canola, corn and wet distiller's grain.</p>	Soybean meal (Specify grade.)		
PHOSPHORUS PRODUCTS				
2.10	Animal bones that are treated under live steam and are dried and ground to a fineness of whereby at least 40% passes through a sieve having openings that are square and are 0.149 mm (100 mesh TYLER screen) in width.	Bone meal (Specify grade.)	P-12	Is ground animal bones that have been previously steamed under pressure, heated or rendered sterile



	Recommendation: Ground animal bones that have been previously steamed under pressure, heated or rendered sterile in some other acceptable manner and ground to a fineness of whereby at least 40% passes through a sieve having openings that are square and are 0.149 mm (100 mesh TYLER screen) in width.			
	Recommendation: Include the AAPFCO definition P-29 in Schedule IIA.	Ammonium Polyphosphate (fertilizer quality)	P-29	Is an ammonium salt of any of the series of polyphosphoric acids whose molecular structure contains two or more phosphorus atoms linked by oxygen. Solutions of ammonium polyphosphate may contain two or more of several phosphate species such as orthophosphates, pyrophosphates and linear phosphate species containing three or more phosphorus atoms which commonly include tripolyphosphates and tetrapolyphosphates. The guaranteed percentages of total nitrogen and available phosphate shall be stated as part of the brand name.
POTASSIUM PRODUCTS				
	Recommendation: Include AAPFCO definition K-11 in Schedule IIA because this product is being sold in Canada.	Kelp (seaweed)	K-11	A the dried marine algae of the botanical divisions of Rhodophyta (red algae), Phaeophyta (brown algae) and Chlorophyta (green algae).
	Recommendation: Include AAPFCO definition K-13 in Schedule IIA because it is being used in liquid form in Canada	Potassium Hydroxide	K-13	Potassium Hydroxide (KOH caustic potash) is a solid strong base containing 66% soluble potash (K ₂ O).
	Recommendation: Include AAAPFCO definition K-16 in Schedule IIA because it is being used by the organic industry in Canada	Green sand	K-16	A naturally occurring mineral, glauconite, which is a hydrated silicate of iron and potassium.
CALCIUM AND MAGNESIUM PRODUCTS				
	Recommendation: Add a definition for Calcium	Calcium		

	Ammonium Nitrate (CAN) to Schedule IIA as the product is used in Canada.	Ammonium Nitrate		
	Recommendation: Add a definition for Liquid Calcium to Schedule IIA as the product is used in Canada.	Liquid Calcium		
	Recommendation: Liming definitions should be included in Schedule IIA and specify grade should be included.	Agricultural Liming Materials	C-1	are products whose calcium and magnesium compounds are capable of neutralizing soil acidity and which are used for that purpose.
	Recommendation: Include AAPFCO definition in Schedule IIA and specify grade should be included.	High Calcic Liming Materials	C-2	are liming materials containing at least twenty-five percent (25%)_ calcium. Further, at least ninety-one percent (91%) of the total calcium and magnesium is calcium.
SULFUR (S) PRODUCTS				
	Recommendation: Include a definition for Elemental Sulphur in Schedule IIA since the product is sold in Canada.	Elemental Sulphur		
OFFICIAL TERMS				
	NOTE: All organic and natural definitions will be addressed at a later date due to current questions arising from regulation of the term "organic"	Organic Fertilizer	T-12	A material containing carbon and one or more elements other than hydrogen and oxygen essential for plant growth.
	Recommendation: Adopt AAPFCO definition.	N-(n-butyl) thiophosphoric trimide (NBPT)	T-46	A compound that is normal butyl derivative of thiophosphoric trimids and is a Urease inhibitor. (CAS No. 94317-64-3, N-(n-butyl) phosphorothiole triamide)
	Recommendation: Biosolids definitions were referred to the CFPF Biosolids Work Group.	Biosolids	T-48	A primary organic solid material produced by wastewater treatment processes that can be beneficially recycled for its plant nutrient content and soil amending characteristics.



APPENDIX F – DEFINITIONS STILL UNDER CONSIDERATION OR CONSENSUS NOT ACHIEVED²

DEFINITIONS STILL UNDER CONSIDERATION BY MML WORK GROUP				
SCHEDULE II NAMES AND STANDARDS OF FERTILIZERS AND SUPPLEMENTS			AAPFCO DEFINITIONS Per 2004 Official Publication	
Item	Composition	Designated Names	Item	Composition
NITROGEN PRODUCTS				
	Draft recommendation: Create a Canadian definition for liquid fish Acidulated Fish Tankage acidulated fish scrap is rendered product derived from fish and treated with sulphuric or phosphoric acid to stabilize the product.	Liquid fish product		
	Draft recommendation: Include AAPFCO definition N-18 of Fish tankage.	Fish Tankage (fish scrap, dry ground fish, fish	N-18	Is the dried ground product derived from rendered or unrendered fish.

² Note: The definitions below were not yet been agreed to at time of writing or consensus has not been reached on a recommendation.

		meal)(fertilizer quality)		
1.22	<p>The reaction product of urea and formaldehyde containing not more than 34% nitrogen of which 60% is in a water-insoluble form and tests not less than 40% active by the nitrogen activity index for urea-formaldehyde compounds.</p> <p>This definition is currently under review by the committee, and is awaiting further input. Some experts have suggested the adoption of the AAPFCO definition.</p>	Urea-formaldehyde (Specify grade)	N-25	Urea-Formaldehyde Products (sparingly soluble) are reaction products of urea and formaldehyde which contain less than least thirty-five percent (35%) nitrogen, largely in insoluble but slowly available form. They shall have the percentage of total nitrogen as part of the product name; for example; 20% N Urea-Formaldehyde. The water insoluble nitrate (AOAC Int. Method 945.01) shall be at least sixty percent (60%) of the total nitrogen. The activity index of the water insoluble nitrogen shall be either (1) not less than forty percent (40%) by the AOAC International method for Urea-formaldehyde Product (#955.05) or (2) not less than fifty percent (50%) by the AOAC International alkaline permanganate method (#920.07) or eighty percent (80%) by the neutral permanganate method (#920.06)
	<p>The Labelling committee agreed that the AAPFCO definition be included since this product is not included in Schedule IIA. The committee is awaiting additional input before making a final recommendation.</p>	Polymer Coated Urea (PCU)	N-32	A coated slow release fertilizer consisting of urea particles coated with a polymer (plastic) resin. It typically contains about forty percent (40%) nitrogen. It is a source of slowly available nitrogen.
1.26	<p>A water-soluble condensation product resulting from the reaction of two molecules of formaldehyde with three molecules of urea, with the elimination of two molecules of water. It has a minimum nitrogen content of 41% and is a source of slowly available nitrogen</p> <p>The Labelling committee agreed that the group should consult with experts to look at definitions for reacted urea DMTU and MDU and determine if the AAPFCO definitions should be included or if an alternate definition should be suggested. This is still under review.</p>	Dimethylenetriurea or DMTU (Specify grade.)	N-30	Dimethylenetriurea (DMTU) is a water soluble condensation product resulting from the reaction of two molecules of formaldehyde with three molecules of urea, with the elimination of two molecules of water, and having a minimum total nitrogen content of forty-one percent (41%). It is a source of slowly available nitrogen.

	<p>The Labelling committee agreed that the group should consult with experts to look at this definition as there is some support for adoption of the AAPFCO definition. This is still under review.</p>	<p>Methylene Urea(s) (MU polymethylene urea(s)</p>	<p>N-40</p>	<p>A product obtained by the reaction of urea with formaldehyde and contains oligomers of urea bonded together by methylene (-CH₂-) linkages. It is chiefly composed of cold-water soluble fractions from Methyleneurea (MDU) and Dimethylenetriurea (DMTU) and hot-water insoluble fractions from longer chain oligomers. It is generally free of methylolureas and methylol ethers. It is a source of slowly available nitrogen.</p>
1.28	<p>A water-soluble condensation product resulting from the reaction of one molecule of formaldehyde with two molecules of urea, with the elimination of one molecule of water. It has a minimum nitrogen content of 42% and is a source of slowly available nitrogen</p> <p>The Labelling committee agreed that the group should consult with experts to look at definitions for reacted urea DMTU and MDU and determine if the AAPFCO definitions should be included or if an alternate definition should be suggested. This is still under review.</p>	<p>Methyleneurea or MDU (Specify grade.)</p>	<p>N-29</p>	<p>Methyleneurea (MDU) is a water soluble condensation product resulting from the reaction of one molecule of formaldehyde with two molecules of urea, with the elimination of one molecule of water. It has a minimum total nitrogen content of forty-two percent (42%) and is a source of slowly available nitrogen.</p>
1.30	<p>A coated slow-release fertilizer consisting of urea particles coated with sulphur. The product may be further coated with a sealant (2 to 3% of total weight). It may contain about 30 to 40% nitrogen and 10 to 30% sulphur.</p> <p>This definition is currently under review by the committee, and is awaiting further input.</p>	<p>Sulphur coated urea (Specify grade.)</p>	<p>N-27</p>	<p>Sulfur coated Urea (SCU) is a coated slow release fertilizer consisting of urea particles coated with sulfur. The product is usually further coated with a sealant (2% to 3% of total weight) a conditioner (2% to 3% of total weight). It typically contains about thirty percent (30%) to forty percent (40%) nitrogen and about ten (10%) to thirty percent (30%) sulfur.</p>
1.31	<p>A water-soluble compound of formula C₂H₇N₃O that contains at least 41% nitrogen (CAS No. 7098-14-6; 1,3,5-triazin-2-one, tetrahydro-S-triazone)</p> <p>Draft recommendation: adopt AAPFCO definition N-</p>	<p>Triazone (Specify grade.)</p>	<p>N-33</p>	<p>Triazone is a water soluble compound of formula C₅H₁₁N₅O₂ [5-(N-methyl)-urea-1,3,5-triazin-2-one of 5-methyleneureido-2oxochexahydro-s-triazine] which contains at least forty percent (40%) total nitrogen.</p>



	33 it has been substantially scrutinized and gone through several revisions.			
1.32	<p>A stable solution resulting from a controlled reaction in an aqueous medium of urea, formaldehyde, and ammonia that contains at least 25% nitrogen. The solution shall contain no more than 40% and not less than 5% nitrogen from unreacted urea and not less than 40% from triazone. All other nitrogen shall be derived from water-soluble, dissolved reaction products of the above reactants. Urea-triazone solution is a source of slowly available nitrogen</p> <p>Draft recommendation: adopt AAPFCO definition N-35 it has been substantially scrutinized and gone through several revisions.</p>	Urea-Triazone Solution (Specify grade.)	N-35	Urea-Triazone Solution is a stable solution resulting from controlled reaction in aqueous medium of urea, formaldehyde, and ammonia which contains at least twenty-five percent (25%) total nitrogen. The solution shall contain no more than forty percent (40%) nor less than five percent (5%) of total nitrogen from unreacted urea and not less than forty percent (40%) from triazone. All other nitrogen shall be derived from water soluble, dissolved reaction products of the above reactants. It is a source of slowly available nitrogen.

OFFICIAL TERMS

<p>The Labelling committee was unable to achieve consensus on the determination of definitions for: slow-, controlled-, and delayed-release fertilizers.</p> <p>Three options have been offered as definitions for slow-release fertilizers:</p> <ul style="list-style-type: none"> • The current EU definition • The current AAPFCO definition (shown opposite) • A new definition that was written based on the EU definition <p>Slow-release fertilizers (a new definition based on the EU definition) – A fertilizer product that may or may not be coated and whose decomposition is affected by microbial activity, soil pH and/or by hydrolysis, which delays the availability of a nutrient for plant uptake and use after application, or which extends its availability to the plant significantly longer than a reference “rapidly available nutrient fertilizer” such as</p>	Slow or Controlled Release Fertilizer	T-29	A fertilizer containing a plant nutrient in a form which delays its availability for plant uptake and use after application, or which extends its availability to the plant significantly longer than a reference “rapidly available nutrient fertilizer “ such as ammonium nitrate or urea, ammonium phosphate or potassium chloride. Such delay of initial availability or extended water solubility of the material (by semi-permeable coating, occlusion, or by inherent water insolubility of polymers, natural nitrogenous organics, protein materials, or other chemical forms), by slow hydrolysis of water soluble low molecular weight compounds, or by other unknown means.
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<p>ammonium nitrate, urea, ammonium phosphate or potassium chloride. Examples: urea-formaldehyde, isobutylidene diurea (IBDU, crotonylidene diurea (CDU), sulphur coated urea and polymer/sulphur coated urea. This definition compares to AAPFCO T-29 and T-71.</p> <p>Slow release fertilizers cannot be manufactured with a predetermined release period since that release period is affected by non-controllable soil-borne factors.</p> <p>Slow-release fertilizers (the current EU definition) - A fertilizer product that is decomposed microbially and/or by hydrolysis, which delays the availability of a nutrient for plant uptake and use after application, or which extends its availability to the plant significantly longer than a reference “rapidly available nutrient fertilizer” such as ammonium nitrate, urea, ammonium phosphate or potassium chloride. Examples: urea-formaldehyde, isobutylidene diurea (IBDU, crotonylidene diurea (CDU). This definition compares to AAPFCO T-29 and T-71.</p> <p>The group was unable to achieve consensus on whether a definition for delayed-release fertilizers should be included. Some people suggest that the definition is not required, while others recommend adoption of the EU definition shown below:</p> <p>Delayed-release fertilizers - A coated fertilizer product which delays the availability of a nutrient for plant uptake and use after application significantly longer than a reference “rapidly available nutrient fertilizer” such as ammonium nitrate, urea, ammonium phosphate or potassium chloride. Nutrients are released when the impermeable coating is degraded through microbial, chemical and physical processes. Example: Sulphur-coated urea.</p> <p>The group was unable to achieve consensus on a definition</p>			
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<p>for controlled-release fertilizers:</p> <ul style="list-style-type: none"> • The definition below is based on the EU definition • The current AAPFCO definition shown opposite <p>Controlled-release fertilizers - A coated or encapsulated fertilizer product, or a nutrient-releasing material incorporated into a matrix which itself may be coated and which delays the availability of a nutrient for plant uptake and use after application, or which extends its availability to the plant significantly longer than a reference “rapidly available nutrient fertilizer” such as ammonium nitrate, urea, ammonium phosphate or potassium chloride. Nutrients are released progressively from the matrix and/or through tiny pores of the coating/capsule membrane based on temperature and minimum moisture thresholds to match the pattern of plant nutrient uptake over a defined period. Examples: polymer-coated/encapsulated fertilizers that meet these definitions., This definition compares to AAPFCO T-29 and T-21.</p>			
<p>The group was unable to achieve consensus on a definitions related to stabilized nitrogen fertilizers. The options under discussion are shown below:</p> <p>Stabilized Nitrogen Fertilizers are nitrogen fertilizers containing a urease inhibitor and or a nitrification inhibitor which extend the time the nitrogen component of the fertilizer remains in the soil in the urea or ammoniacal form longer than a reference “rapidly available nutrient fertilizer” such as ammonium nitrate, ammonium sulphate, ammonium phosphate or urea.</p> <p>A urease inhibitor is a substance which inhibits hydrolytic action on urea by the urease enzyme. When applied to soils the effect of the urease inhibitor is less nitrogen lost to the atmosphere by ammonia</p>	<p>Stabilized Nitrogen Fertilizer</p> <p>Urease Inhibitor</p>	<p>T-41</p> <p>T-45</p>	<p>A fertilizer to which a nitrogen stabilizer has been added.</p> <p>A substance which inhibits hydrolytic action on urea by the Urease enzyme. When applied to soils the effect of the Urease inhibitor is less urea nitrogen loss by ammonia volatilization.</p>



<p>volatilization. An example of a urease inhibitor is N-(n-butyl) thiophosphoric triamide.</p> <p>A nitrification inhibitor is a substance that inhibits the oxidation of ammoniacal nitrogen to nitrate nitrogen. An example of a nitrification inhibitor is dicyandiamide.</p> <p>Stabilized Nitrogen Fertilizers - are nitrogen fertilizers containing a urease inhibitor and or a nitrification inhibitor which extend the time the nitrogen component of the fertilizer remains in the soil in the urea or ammoniacal form longer than a reference “rapidly available nutrient fertilizer” such as ammonium nitrate, ammonium sulphate, ammonium phosphate or urea. Examples:</p> <ul style="list-style-type: none"> • Urease inhibitors which inhibit hydrolytic action on urea by the urease enzyme. An example of a urease inhibitor is N-(n-butyl) thiophosphoric triamide. • Nitrification inhibitors that inhibit the oxidation of ammoniacal nitrogen to nitrate nitrogen. Examples of nitrification inhibitors are dicyandiamide and nitrapyrin. 	<p>Nitrification inhibitor</p>	<p>T-49</p>	<p>A substance that inhibits the biological oxidation of ammoniacal nitrogen to nitrate nitrogen</p>
<p>It was discussed but agreement was not reached on whether a definition for nitrogen stabilizer should be included as a recommendation.</p>	<p>Nitrogen Stabilizer</p>	<p>T-40</p>	<p>A substance added to a fertilizer which extends the time the nitrogen component of the fertilizer remains in the soil in the urea or ammoniacal form.</p>



APPENDIX G – A PATH FORWARD FOR CFQAP³



The CFQAP sub-committee is a working committee of the Canadian Fertilizer Products Forum. For several months the sub-committee has reviewed the existing Canadian Fertilizer Quality Assurance Program, seeking options for improvement. Several options have been considered (see page 5-6 for a list of options) and the option presented below is now being proposed by the sub-committee for adoption by the fertilizer industry in Canada.

A. OPTION SELECTED – INDUSTRY SAMPLING/ PROPOSAL FOR NEW PROTOCOL CFQAP

Purpose

The main purpose in developing a new revised “Quality Control” program is so that the industry can put back into place a recognized management tool that will help the industry maintain quality product, and control costly losses to shrink and over blending. This program at present has lost its focus and has become a public graded reporting system that was supposed to protect the environment and the grower. We all know in this industry that it would take a huge error in blending to affect a crop from application of fertilizer. Even up to 10% over or under would likely not even be noticed in the crop. Likewise it would take a huge blending error, which would likely be noticed, or more likely a spill to cause any impact on the environment from fertilizer application.

What the CFQAP program needs to do is put back into place a system that will provide assistance to a blender or supply company to control product quality and also work on any issues that may arise from the monitoring of blends throughout the whole year.

In our discussion group it was acknowledged that most growers are not concerned about the guaranteed analysis of their fertilizer, and if they had issues and concerns would likely shop elsewhere. However the CFIA as regulators of the fertilizer sold, are insisting on some type of a quality assurance program and as an industry if we do not develop a program that works for us and satisfies their control needs they will implement one for us. They are not fussy on who this program implementer will be, but we need to recognize it may very well be developed by someone or group that has no understanding of our needs or practical experience in the farm supply industry. This proposed QA program would also require a third party audit program, which if it is left up to CFIA to develop would be too costly to administer, again be developed by

³ Note: The definitions below were not yet been agreed to at time of writing or consensus has not been reached on a recommendation.



someone or group with no practical farm supply experience, and it would be too restrictive to effectively apply. Due to the past, and the current economic challenges we presently face, it is in our best interest to create our own quality assurance program, and manage it within the industry.

With respect to saying that our customers (the producers) don't really care about the QA fertilizer program so why even bother, the CFIA as regulators of the product are going to put something in place if we don't, which ultimately will be much more costly to administer, and not be very practical in many areas. We only have a short time to put this in place so we need to focus on something that will work that is acceptable by all or we could end up with something that is much more difficult to deal with and impractical in many areas.

Structure of Program

This proposed program would not be all that different from the existing program but needs to be re-designed and refocused and more importantly controllable. The new program needs to become a tool to identify problems and assist in the quality control process to control the cost of production and reduce losses due to over blending and poor sizing issues that would affect spreading and handling of material. The program should be QA and not a public graded report card.

First of all the fertilizer industry associations either Federally or Provincially would need to take ownership administration and control of this program, and to be adopted the association membership would all need to participate. The association would become the *Accreditor* of the program. This is not a bad thing as it would also allow the industry to self-regulate or correct some of the non conformers that seem to slip into the market place under the radar that we hear about all the time.

Submission of Samples

Under the new program the membership would routinely submit samples directly to an accredited laboratory that can turn samples around quickly for analysis. Results would be sent to the RETAIL COMPANY and the Accreditor for confidential review by inspectors. During its biannual review, inspectors would review samples submitted against standards. Participating members that maintain a compliant status of quality would *not* need CFIA attention. The association would send new certificates to each participating member biannually if they maintain their standing.

The Sampling Process

The number of samples mandated by the current program would not need to change, but I do believe that if this program was run properly, confidentially, and cost effectively, that most blenders would likely sample more versus less. I also believe that there is no need for the current type of available "P", and "K" analysis that we run now to monitor blended product at the blender level. If suppliers and manufacturers of inputs were to run the soluble and available tests, which is a more costly test then the blenders could run just total nutrient tests for QA purposes, which is more economical, and faster to run in the lab. Having the product suppliers run the standard available P and soluble K would ensure that the product that was used in the system had the quality required, and further testing on the material could be run as totals. Again this is a suggestion that would keep the cost down, and because of perhaps encourage more testing.



Given that blends are much more complex today, than they were when CFQAP was started, for example micronutrients are now being added, the quality assurance program testing may consider including blended components beyond NPK.

Under the quality monitoring program, retailers have an obligation and a business reason to take samples and know what quality they have.

Reporting and Analysis

To maintain compliance within the program the RETAIL COMPANY would submit the required number of samples for analysis to be tested, and reports would be sent to the RETAIL COMPANY and the Accreditor (Association). If during the biannual review, all the samples met the quality criterion the member would retain compliant standing. If samples submitted were outside the quality parameters the inspector would report the non-compliance issue to the member requesting action take place on the non-compliances. The member company would be required to submit within 30 days an action plan in writing to correct the non-compliance and then resubmit samples to verify that the non-compliant issue was resolved. This proposed call to action is missing in the present system, and this addition to the existing program would make the industry more accountable in CFIA's view. I also believe that we need to make some adjustments to the way the blends are rated i.e. CNL calculation, and agree with the comments that Papken has provided. The experienced inspector would provide direction and support to help the RETAIL COMPANY achieve and maintain compliant status. Another reason for having an in-house industry monitored solution here is that they have a list of both active and retired inactive industry people with long term experience that may be contacted that could help solve issue. The quality issues need to remain confidential between the Accreditor (industry body), the inspector, and the participating member to resolve blending issues, and to maintain the quality within the industry.

The inspectors would need to be certified by the Accrediting body in order to be accepted by CFIA. Therefore a short course would have to be developed and approved that inspectors would need to take in order to carry out the inspection. These could be part of the CCA program. Inspectors could be anyone in the industry that is third party from the RETAIL COMPANY with qualifications. Crop consultants, crop protection industry people, industry staff from different companies within the local geographic areas.

B. MARKETING QUALITY ASSURANCE

With a robust quality assurance/monitoring system in place, the industry could develop a marketing program with supporting materials such as a brand campaign with brochures, labels, and logos explaining the program and promoting it to customers. The industry can choose to promote the certification system to increase its value to participants and customers.

Selling benefit to the farmer includes:

- ☀ Confidence in knowing that certified blenders have sound quality assurance systems in place that provide a guarantee of quality.
- ☀ Ability to promote the industry as open and honest.
- ☀ There is an opportunity to show farmers that the fertilizer industry is working with them to get access to the products farmers are looking for to improve productivity.



Selling benefits to the blender:

- ☀ A system that helps companies to comply, the opportunity for education through inspectors exists. The system is designed to improve business process rather than policing, as is the current system.
- ☀ Way to ensure all employees, even new ones, are following quality protocols and standards.
- ☀ Opportunity to promote the industry jointly, which may be particularly important during time of increasing input costs.
- ☀ May create opportunities for companies to reduce their costs by avoiding over-blending.
- ☀ With the system designed as a monitoring rather than a policing program, the risks of non-compliance are only significant if the RETAIL COMPANY chooses not to undertake corrective action.

C. ENFORCEMENT

The premise of this system is that CFIA will focus its enforcement efforts on non-participants and complaints. Participants in the system will have regular audits and consequences of non-certification if they fail to comply. CFIA has limited resources for enforcement and those resources would be directed to taking action against non-registered products entering the country and companies failing to engage in the accreditation program.



APPENDIX H – FERTILIZER QUALITY PROGRAM PROPOSAL FROM CFI⁴



Oct. 15, 2007

Introduction

The Canadian Food Inspection Agency (CFIA) and a significant number of industry representatives acknowledge that the Canadian Fertilizer Quality Assurance Program (CFQAP) is not achieving its goals in terms of cost-effectiveness, compliance or sampling accuracy. There is general agreement that the CFQAP needs to be revamped or replaced. CFIA's regulators are willing to consider an alternative program that has general industry consensus and demonstrates industry diligence in blending practices.

The proposed program would be a voluntary alternative to the CFQAP. Industry would have the option to continue with the CFQAP or opt for the new program.

The proposed Fertilizer Quality Program recognizes that most, if not all, blending facilities in Canada already have in place their own internal quality control measures and already keep records and provide training to their employees. From CFIA's perspective, these measures need to be demonstrated to fulfill the regulatory requirements. The proposed alternative program would have several components:

Commitment

Each company would commit to the practices as outlined in CFI's bulk blend manual - or another agreed upon manual - in a formal letter to CFIA.

Training

The training component would require that all blending staff have appropriate fertilizer quality training. Training programs are already offered for example by AAPFCO, OABA and QFMA. These training programs could be consolidated into one manual, or industry could agree to what training programs would be acceptable. This would not require a change in current fertilizer policy at blending facilities because most, if not all, already have training in place.

⁴ Note: This is a draft.



Record Keeping

The record keeping component would require that blending facilities keep records of their employee training certificates on file as well as records on upgrades or equipment maintenance. Again, most fertilizer facilities, if not all, already have these basic record keeping policies in place.

Verification

This component would consist of random, spot audits to review the records of blending facilities and sampling of blends for lab analysis. The random audits (co-ordinated through CFI's existing agreement with the Agri-Chemical Warehousing Standards Association-AWSA) could also include an element of random sampling, which would work out to only about one audit per facility every ± 5 years on average. A facility that failed the audit would be given one year to correct the problem and be audited the following year to ensure compliance.

The blend quality standard would be a pass-fail with the standard set by industry agreement in consultation with CFIA.

The benefits of this program for industry would be a significantly lower level of inspection, recognition of fertilizer quality for marketing purposes, access to training material and an opportunity to demonstrate best management practices. Importantly, reaching an industry-led agreement with CFIA would be a step forward.

Further discussion is required with CFIA on the acceptable tolerance of blending samples and on the administration of the program.

Non-members of the program would be subject to CFIA inspection and compliance.

Costs and Administration

CFI believes that cost per facility would be in the order of \$100 per year.

The program could be financed by an annual fee. Alternatively, CFI could pay for maintenance of the manual training materials and record keeping, while retailers would pay for training courses and spot audits on an as-required basis.



APPENDIX I – CFPF MARKETPLACE MONITORING AND QUALITY ASSURANCE OPTIONS

Options

Based on discussions among the industry, this report focuses on options for an industry-based program. There are a number of possible solutions to conduct marketplace monitoring and labelling. Broadly speaking they are:

Option	Pros	Cons
Government-run inspection	<ul style="list-style-type: none"> - impartial party is doing the monitoring - internationally acceptable process - government is subsidized by tax payer and therefore cheaper to industry 	<ul style="list-style-type: none"> - current programs criticized as being inadequate - resources are limited - some companies are not following the rules and there is little being done to focus on these problems - there is no obvious mechanism for accountability
Self monitoring	<ul style="list-style-type: none"> - allows CFIA to focus on the most high risk products - minimizes bureaucracy - CFIA responds only to complaints, otherwise companies are allowed to do their own work 	<ul style="list-style-type: none"> - no third party - would add paperwork as companies would need to submit details on their self-monitoring programs - less control of product
Private industry body does accreditation	<ul style="list-style-type: none"> - is a third party system - industry still has additional control over its own programs/systems - based on quality assurance systems which are international standards for monitoring 	<ul style="list-style-type: none"> - costs money to develop standards - on-going operating costs of industry body - companies subject to more consistent scrutiny



Monitor only at point-of-sale	<ul style="list-style-type: none"> - reduces number of points where monitoring occurs - monitors closest to the consumer - would treat domestic and international products equally 	<ul style="list-style-type: none"> - places emphasis and possibly risk only on retailers - hard to monitor Internet sales - coverage may be spotty due to number of locations - catching problems too late, product is already in commerce
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Monitor only at point of manufacture	<ul style="list-style-type: none"> - focuses on resolving problems early - manufacturing companies most likely to be using quality systems already - greatest risk for products (contaminants, etc) exists at manufacture - easiest place to monitor 	<ul style="list-style-type: none"> - does not capture risk of product being off spec at point of sale - furthest from consumer
Drop inspection and let market decide	<ul style="list-style-type: none"> - cheaper - moves bureaucracy out of the issue - same system used on many consumer goods 	<ul style="list-style-type: none"> - not compliant with <i>Fertilizers Act</i> as written - no consumer protection mechanism - would be subject to Industry Canada rules - easier for "snake oil" salesmen to enter marketplace

Concept

Develop an industry-driven accreditation system. It would be authorized by CFIA so the program retains ties to the legislation and regulations but is delivered by a third party. The accreditation means a COMPANY is certified to provide fertilizer and supplement products. It is not a certification of individual products – the focus is on an overall quality system.

The third party (called the accreditor in the rest of this document) would be a registrar that holds the authority to certify or accredit members of the industry on the recommendation of an auditor.

The premise is based on total quality management which documents systems, notes where testing and other compliance activities must occur, offers traceability, and provides mechanisms to take corrective action.

The Accreditor would set standards of a quality system and administer it. The standards for specific products would be established to comply with government mandates. The Accreditor would be responsible for liaising with the government to ensure those standards are adequate to meet minimums set by regulators.



The Accreditor would not create an extensive bureaucracy. It would remain small and low cost by focusing on setting standards, sharing information, and overall administration. Independent auditors would do the actual legwork involved in inspecting facilities, checking documentation, and ensuring standards are met. These auditors would have to be approved and certified by the Accreditor.

It is also possible for the industry to set premium programs to certify products to specialized standards in areas such as organic or natural fertilizers.

Audit Process

Members of the industry, once they are prepared to have an audit performed, will contact the Accreditor and be given a list of auditors available in their geographic area of the country. It is up to the member to initiate contact with an auditor and set up a date for the audit to enter the process. Audits will then occur bi-annually once the company is certified.

When the audit takes place, any non-conformances (any functions of the business that do not comply with the quality system) are documented and a deadline for corrective action on the part of the company is set. Once that time has lapsed, if corrective action has not been taken, the audit will fail and the process must begin from scratch. Failure to take corrective action will cost the company its certification. If the company “passes”, the auditor will send in a report to the Accreditor for review, and then the company will be certified as meeting the program standards.

If there is an issue with an auditor’s findings, a company has an option to appeal the audit to the Accreditor and select a new auditor to re-audit the company’s quality system.

To police itself, the Accreditor will initiate random audits to ensure the auditors are indeed doing their jobs and to make sure members maintain their quality system. The Accreditor can also direct additional audits of companies which have a history of non-compliance or against which CFIA has received complaints.

Accreditation Categories

The quality system would have modules. The first module would be an overarching quality system that provides for documentation and corrective action. Requirements would be generic in nature, so that they could be applied to any type or size of business. A business which is ISO accredited would not be required to complete the first module and ISO would more than meet these requirements.

Further modules would be created that contain sector-specific standards. For instance, requirements on the number of live bacteria in inoculants would be in a standard for inoculants. In a micro-nutrients standard, there would be requirements about availability. All the sector-specific modules would incorporate rules to ensure there are no contaminants and that there is truth-in-labelling – that the product is as it is represented or defined in the Act.



Suggestions about possible sectors for inclusion:

- ☀ Schedule II list
- ☀ micro-nutrients
- ☀ inoculants
- ☀ wetting agents
- ☀ compost
- ☀ biosolids
- ☀ fertilizer blending

Promotion

The industry can choose to promote the certification system to increase its value to participants and customers.

Enforcement

The premise of this system is that CFIA will focus its enforcement efforts on non-participants and complaints. Participants in the system will have regular audits and consequences of non-certification if they fail to comply. CFIA has limited resources for enforcement and those resources would be directed to taking action against non-registered products entering the country and companies failing to engage in the accreditation program.

Options for Service Providers

There are several options for the Accreditation body. The industry must decide if they would like one overarching body or several to deliver different programs. Options include, but are not limited to:

Option	Description & Issues	Potential Programs
Compost Quality Assurance program (CQA)	The Compost Council is running a third party accreditation program. Internal capacity to serve a larger number of participants may be an issue, but they are already familiar with program design	<ul style="list-style-type: none"> - all - labelling and testing of all Schedule II products - natural fertilizers
Canadian Seed Institute	The Canadian Seed Institute runs a CFIA-accredited multi-discipline program (seed cleaning, seed testing, bulk sales) on a third party basis. They have the infrastructure of auditors across the country. Bi-annual fees cost in the range of \$1200 plus audit fees. This group has familiarity with home and garden and lawn retail issues.	<ul style="list-style-type: none"> - all - lawn and garden



The Agri-chemical Warehousing Standards Association (AWSA)	The auditing process for chemical warehousing across the country is also beginning to work on fertilizer warehousing so has ties through the farm retail network. This group is run through the CropLife office.	- All - CFQAP
Creation of Fertilizer Auditing Body	Arising out of CFPF and possibly housed at the CFI, the fertilizer industry could create its own auditing and certifying body, certified by CFIA. Advantages are control and comprehensive sector expertise; disadvantages include infrastructure and start up costs.	- all
All ISO registrants	Since ISO is an internationally recognized quality assurance program, which many sector companies are already engaged in, those companies in ISO would be required to include the fertilizer standards in their ISO review and would not need separate auditing.	

Possible Next Steps

- ☀ Development of overarching quality system
- ☀ Writing of specific standards by sub-sector; heavy metal and contaminant testing, along with labelling accuracy, and quality standards would be incorporated into each sub-sector's goals as needed. The sub-sectors include:
 - Schedule II list
 - micro-nutrients
 - inoculants
 - wetting agents
 - compost
 - biosolids
 - fertilizer blending