

POLICY STATEMENTS OF AAPFCO

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ENVIRONMENTAL CONTROL CONCERNING THE APPLICATION OF FERTILIZER

The Association of American Plant Food Control Officials is vitally interested in the protection of the environment. Research has established the beneficial effects of proper fertilizer application on crop growth, which lessens pollution of surface waters by protecting soils from erosion. Conversely, research has also shown that under certain management and climatic conditions improper applications of fertilizer can result in movement of fertilizer nutrients to surface and/or ground water sources.

The Association is extremely concerned that future use of fertilizer does not undesirably affect our environment and has organized our Association's Environmental Affairs Committee to address this issue. When combined with best management practices, the Association believes that appropriate fertilizer applications can improve the quality of the environment by:

- (1) Increasing the quality of biomass produced per unit area of land surface, which aids in stabilizing and protecting the soil from erosion.
- (2) Increasing production of food and fiber per unit area, thereby eliminating the necessity for producing crops on land unsuited for cultivation.
- (3) Increasing accumulation of soil nutrients into biomass, thereby minimizing percolation of soluble nutrients to ground water.
- (4) Reducing the forest land placed into cultivation as a result of improved yields.

The Association strongly commends the research efforts of various organizations which will provide additional information vital to the use of plant nutrients without adversely affecting the environment. The continued use of this information by extension service agronomists, commercial agronomists and other advisors in an educational program and in making recommendations will surely provide for an adequate but safe source of food for the nation and world.

The Association recognizes and endorses the following activities:

- (1) The use of soil testing and plant tissue analysis as scientifically correlated with fertilizer needs of specific soil, crop, climate and yield.
- (2) Protecting our land resources against erosion losses through employment of best management practices which include application of appropriate quantities of fertilizer.
- (3) Funding of long term research programs to quantify the effects of fertilizer on the environment under diverse combinations of soils, climate, crop, and management.

The Association further encourages the thorough evaluation of all appropriate research data before regulations on fertilizer application are invoked. Inappropriate or unnecessary regulations could increase erosion of crop land, increase cost of food and fiber to consumers, and cause deterioration of the competitive position of the American farmer in the world market. (Official 1988.)

SIZE GUIDE NUMBER (SGN)

Upon retrospective review in 1987, the Association of American Plant Food Control Officials has concluded that a significant problem exists nationally with regard to dry blend fertilizers and their failure to meet label guarantees. Application of the AAPFCO investigational allowances to laboratory data obtained from 12 states during 1983 had revealed a rather uniform pattern in which an unacceptable number of officially-acquired dry blended mixed fertilizer samples failed to conform to at least one guarantee. A major cause of this failure to meet label guarantees upon analysis rests with variances in particle size of materials, both within and across material types. When materials of significant size variance are employed to prepare dry blend fertilizers, the resultant product segregates, i.e. never becomes uniformly mixed, or it subsequently unmixes at some stage following the completion of the mixing step.

Responsibility for control of dry blend segregation rests with the materials manufacturer/supplier and the fertilizer formulator. AAPFCO believes that the materials suppliers must institute steps to control particle size range during production and protect the material insofar as practically possible from radical change during storage and transportation. The fertilizer blender must evaluate incoming materials as to their compatibility, adjust for minor variances in particle size between lots, employ current anti-coning technology throughout the manufacturing/storage/distribution chain to prevent segregation, and otherwise utilize recognized good manufacturing practices. While state regulatory agencies are not directly responsible for the technology of controlling segregation, they must assure that products meet label guarantees upon analysis, and through pursuit of corrective actions with manufacturers may cause the problem to be rectified.

The Canadian Fertilizer Institute has developed and voluntarily adopted a concept known as the "CFI Guide of Materials Selection for the Production of Quality Granular Blends". The concept involves three parameters: (a) size guide number (SGN), a measure of the average particle size of materials in a given lot; (b) the uniformity index (UI), which is the ratio of small to large particles in a lot; and (c) the mixing uniformity index (MUI), which incorporates both size guide number and uniformity index into determining compatibility of various material lots for making uniform dry blends. Of these parameters, AAPFCO finds the size guide number (SGN) to offer the most pragmatic criterion which materials suppliers and blenders can use to substantially improve dry blend fertilizer quality in the United States.

In light of the problem, AAPFCO endorses and recommends the following:

1. That the United States fertilizer industry embrace the size guide number (SGN) concept as a means of improving dry blend fertilizers;
2. That adoption of the concept be voluntary;
3. That materials manufacturers/suppliers instigate steps to control and specify particle size f.o.b. point of manufacture;
4. That blenders utilize the SGN system in selecting compatible size ranges tailored to their operations and individual requirements;
5. That blenders evaluate incoming materials for blending compatibility; and
6. That blenders employ the full range of good manufacturing practices (GMP's) that are essential to producing a quality blended fertilizer, to include such things as sampling and analysis of incoming materials and finished blended fertilizers, use of current anti-coning technology in formulation, handling, storage and loadout of delivery containers, maintenance of reserve samples and other appropriate practices.

AAPFCO urges the industry as a whole to move forward expeditiously in implementing this overall concept in the interest of providing fertilizer users with high quality products which assist their efforts towards maximum economic yield. (Official 1989.)

SLOW RELEASE AND STABILIZED FERTILIZERS

Upon review and consultation with the industry in early 1994, the Association of American Plant Food Control Officials (AAPFCO) concluded that its model legislation for slow release fertilizers, including some products with specific stabilizing characteristics, was not adequate or well understood. These products achieve improved efficiency of nutrient use and minimize the potential of nutrient losses to the environment through mechanisms that slow the release of plant available nutrients into the soil or extend the time that available nutrients remain in the soil. These products as a class provide important tools in environmentally responsible plant nutrition; therefore, increased use and market share for these products in the next few years is predicted, especially in agricultural crop markets.

AAPFCO affirms that one of the goals of its model legislation is to provide for consumer protection while encouraging free commerce. Pursuant to this goal, AAPFCO endorses and recommends that:

- (1) The term "Enhanced Efficiency (EE) " be adopted to describe fertilizer products with characteristics that minimize the potential of nutrient losses to the environment, as compared to a "reference soluble" product.
 - (a) The term "slow release" be adopted to describe fertilizer products that release (convert to a plant-available form) their plant nutrients at a slower rate relative to a "reference soluble" product. Examples of slow release products are coated or occluded, which control the release of soluble nutrients through coating or occlusion of the soluble nutrient compounds, water insoluble, or slowly available water soluble.
 - (b) The term "stabilized" be adopted to describe products that have been amended with an additive that reduces the rate of transformation of fertilizer compounds, resulting in extended time of availability in the soil. Examples of stabilizing amendments are nitrification inhibitors, nitrogen stabilizers, or urease inhibitors.
- (2) The EE characteristics of these products be described in a consistent and quantifiable manner.
- (3) The AAPFCO, through its body of model legislation, develop and promote simple and effective regulatory procedures for EE fertilizer products. These should include: (a) identification of methodology for determining "release rate" or "transformation rate" that is straight-forward and universally accepted; (b) development of definitions and labeling requirements that conform with this policy statement, and that are readily understood and supported by industry; (c) development of guidelines for consistent and effective enforcement of regulations for EE products; and, (d) flexibility to include future product concepts and technology that may be developed and brought to market.

Successful implementation of these recommendations will require efforts by both AAPFCO and industry. AAPFCO should move as quickly as possible, working with industry, to revise its model legislation to conform with the recommendations and objectives of this policy statement. Industry should actively support the development and adoption of testing procedures and analytical methods that conform with the requirements of this policy. Both AAPFCO and industry should promote adoption throughout North America.

AAPFCO believes that adoption of this policy is consistent with its regulatory mission and with its commitment to ensuring that fertilizer users receive high quality, clearly labeled and efficacious products. (Official 1999)

LOCAL FERTILIZER REGULATION

The Association of American Plant Food Control Officials (AAPFCO) is vitally interested in the protection of the environment; and believes that appropriate fertilizer application can improve the quality of the environment. AAPFCO recognizes that the regulation of fertilizers must be based on sound scientific principles and that local ordinances regulating the registration, labeling, packaging, sale, storage, distribution, and application of fertilizer can significantly disrupt the uniform movement of these products in commerce and could harm the environment. Municipalities and other forms of local government may lack the proper scientific expertise to properly and adequately regulate fertilizers; therefore, AAPFCO does not support the development of local regulation of fertilizers by political subdivisions below the level of the State. Furthermore, AAPFCO recommends that all states move quickly to develop legislation that prohibits the regulation of fertilizers below the level of the State in order to insure that these materials are regulated based on sound scientific principles needed to protect the environment. (Official 2009)

SUPPORT FOR NUTRIENT MANAGEMENT PLANNING WHEN USING FERTILIZERS

This policy statement affirms AAPFCO support for the comprehensive use of nutrient management planning (NMP) when using fertilizer products. AAPFCO works to ensure that regulations and legislation are sound from a scientific and agronomic perspective; pointing out that balanced nutrition, soil testing, nutrient use efficiency measures, and other tools are key to appropriate fertilizer use. We work closely with university and other organizations to achieve and advance these goals. We remain convinced that NMP is very site-specific. In certain areas soil testing and resultant nutrient application is more than adequate, but in sensitive watersheds, practices from precision agriculture, to appropriate timing and use of cover crops, to the use of advanced efficiency products may be necessary.

Soil, water and air are essential for growing food, and so are nutrients provided by fertilizers. The fertilizer control officials have a vested interest in promoting product stewardship to protect the environment and support the efficient use of plant nutrients. Our approach to nutrient management provides farmers with a variety of science-based best management practices (BMPs) promoting the use of the right product, applied at the right rate, right time and right place.

BMPs are designed to provide adequate nutrition for crops, while minimizing nutrient losses to the environment. The fertilizer industry partners with producers, government, university and private sector researchers to develop BMPs. These BMPs are articulated below:

Best Management Practices (BMPs)

Right Product (Match fertilizer type to crop needs)

- Soil Testing
 - N, P, K, Secondary and Micronutrient
 - Enhanced Efficiency Fertilizers
 - Nutrient Management Planning
- Select appropriate fertilizer and on-farm nutrient sources for the cropping system.

Right Time (Make nutrients available when crops need them)

- Application Timing
- Controlled Release Technologies
- Inhibitors
- Fertilizer Product Choice
-

Right Place (Keep nutrients where crops can use them)

- Application Method
- Incorporation of Fertilizer
- Buffer Strips
- Conservation Tillage
- Cover Cropping

Right Rate (Match amount of fertilizer to crop needs)

- Soil Testing
- Yield Goal Analysis
- Crop Removal Balance
- Nutrient Management Planning
- Plant Tissue Analysis
- Applicator Calibration
- Crop Scouting
- Record Keeping
- Variable Rate Technology
- Site-Specific Management

Making BMPs Work

Every farm and field is different. Farmers need to be able to select the BMPs that are best suited to regional and farm-specific conditions. Factors that may influence BMP selection include soil conditions, climate, topography and crops grown. With the help of experts such as Extension Agents and Certified Crop Advisers (CCAs), farmers can assess soil and environmental conditions on their individual farms and develop a customized nutrient management plan that incorporates the most appropriate BMPs. This flexibility is critical for farmers to maximize the economic and environmental benefits of adopting BMPs. Working in partnership with the farmers who manage the land is crucial to establish effective nutrient management practices. (Official 2009)