

RULES AND REGULATIONS RELATING TO FERTILIZERS

Pursuant to due publication and notice of opportunity for a public hearing, the director has adopted the following regulations:

1. Plant Nutrients in Addition to Nitrogen, Phosphorus and Potassium.

Other Plant Nutrients, when mentioned in any form or manner shall be registered and shall be guaranteed. Guarantees shall be made on the elemental basis. Sources of the elements guaranteed and proof of availability shall be provided the director upon request. The minimum percentages which will be accepted for registration are as follows:

Element %

Calcium (Ca)	1.00	Copper (Cu)	0.05
Magnesium (Mg)	0.50	Iron (Fe)	0.10
Sulfur (S)	1.00	Manganese (Mn)	0.05
Boron (B)	0.02	Molybdenum (Mo)	0.0005
Chlorine (Cl)	0.10	Sodium (Na)	0.10
Cobalt (Co)	0.0005	Zinc (Zn)	0.05

Guarantees or claims for the above listed plant nutrients are the only ones which will be accepted. Proposed labels and directions for the use of the fertilizer shall be furnished with the application for registration upon request. Any of the above listed elements which are guaranteed shall appear in the order listed immediately following guarantees for the primary nutrients of nitrogen, phosphorus and potassium.

A warning or caution statement is required on the label for any product which contains 0.03% or more of boron in water soluble form. This statement shall carry the word "WARNING" or "CAUTION" conspicuously displayed, shall state the crop(s) for which the fertilizer is to be used, and state that the use of the fertilizer on any other than those recommended may result in serious injury to the crop(s).

Products containing 0.001% or more of molybdenum also require a warning statement on the label. This shall include the word "WARNING" or "CAUTION" and one statement that the application of fertilizers containing molybdenum may result in forage crops containing levels of molybdenum which are toxic to ruminant animals.

Example of Warning or Caution Statements:

BORON:

1. Directions: Apply this fertilizer at a maximum of 350 pounds per acre for Alfalfa or Red Clover seed production. CAUTION: Do not use on other crops. The boron may cause injury to them.

2. CAUTION: Apply this fertilizer at a maximum rate of 700 pounds per acre for Alfalfa or Red Clover seed production. Do not use on other crops; the boron may cause serious injury to them.

3. WARNING: This fertilizer carries added borax and is intended for use only on Alfalfa. Its use on any other crops or under conditions other than those recommended may result in serious injury to the crop.

MOLYBDENUM:

1. CAUTION: This fertilizer is to be used only on soil which responds to molybdenum. Crops high in molybdenum are toxic to grazing animals (ruminants).

2. Specialty Fertilizer Labels.

The following information, if not appearing on the face or display side in a readable and conspicuous form shall occupy at least the upper-third of a side of the container and shall be considered the label.

(a) Net Weight

(b) Brand and Grade

(c) Guaranteed Analysis:

Total Nitrogen (N).....%
_____ % Ammoniacal Nitrogen**
_____ % Nitrate Nitrogen**
_____ % Water Insoluble Nitrogen*
Available Phosphoric Acid (P₂O₅).....%
Soluble Potash (K₂O).....%
Additional Plant Nutrients as prescribed by regulation.
Sources of nutrients, when shown on the label, shall be listed below the guaranteed analysis.
**Potential Acidity or Basicity.....lbs.
Calcium Carbonate Equivalent per ton.

(d) Name and address of registrant

Notes:

*If claimed or the statement "organic" or "slow acting Nitrogen" is used on the label.

**If claimed or required.

3. Slowly Available Plant Nutrients.

(a) No fertilizer label shall bear a statement that connotes or infers the presence of a slowly available plant nutrient, unless the nutrient or nutrients are identified.

(b) When a fertilizer label inferts or connotes that the nitrogen is slowly available through use of organic, organic nitrogen, ureaform, long lasting or similar terms, the guaranteed analysis

must indicate the percentage of water insoluble nitrogen in the material, except manipulated animal and vegetable manures distributed as such and not mixed with other materials. When the water insoluble nitrogen is less than 15% of the total nitrogen, the label shall bear no reference to such designations.

(c) To supplement (b), it should be established that if a label states the amount of organic nitrogen present in a phrase, such as "25% of the nitrogen from ureaformaldehyde (ureaform)," then the water insoluble nitrogen guarantee must not be less than 60% of the nitrogen so designated.

Example: 10-6-4 Rose Food

25% of Nitrogen is Organic

$10 \text{ (Total N Guaranteed)} \times .25 \text{ (% N Claimed as Organic)} \times .60 = 1.5\% \text{ WIN}$

(d) The term "Coated-Slow Release Fertilizer," or "Coated-Slow Release" may be accepted as descriptive of products.

(e) Further, the above phrases (d) be allowed for any products that can show a testing program substantiating the claim. (Testing under guidance of Experiment Station personnel, or a recognized reputable researcher, etc.). Water insoluble nitrogen must be guaranteed at the 15% of total nitrogen level as in organic materials.

(f) AOAC method 2.064, or as it shall be designated in subsequent AOAC editions, is to be used to confirm the water insoluble nitrogen of coated products and others whose slow release characteristics depend on particle size. AOAC method 2.062 (12th Edition) shall be used to determine the water insoluble nitrogen of other products applicable for these procedures.

4. Definitions.

Except as the director designates otherwise in specific cases, the names and definitions for commercial fertilizers shall be those adopted by the Association of American Plant Food Control Officials.

5. Percentages.

The term of "percentage," by symbol or word, when used on a fertilizer label shall represent only the amount of individual plant nutrients in relation to the total product by weight.

6. Investigational Allowances.

(a) A commercial fertilizer shall be deemed deficient if the analysis of nutrient is below the guarantee by an amount exceeding the values in the following schedule, or if the overall index value of the fertilizer is below 98%*.

Guarantee percent	Nitrogen percent	Available Phosphoric Acid, percent	Potash percent
4 or less	0.49	0.67	0.41
5	0.51	0.67	0.43
6	0.52	0.67	0.47
7	0.54	0.68	0.53
8	0.55	0.68	0.60
9	0.57	0.68	0.65
10	0.58	0.69	0.70
12	0.61	0.69	0.79
14	0.63	0.70	0.87
16	0.67	0.70	0.94
18	0.70	0.71	1.01
20	0.73	0.72	1.08
22	0.75	0.72	1.15
24	0.78	0.73	1.21
26	0.81	0.73	1.27
28	0.83	0.74	1.33
30	0.86	0.75	1.39
32 or more	0.88	0.76	1.44

For guarantees not listed, calculate the appropriate value by interpolation. *For these investigational allowances to be applicable, the recommended AOAC procedures for obtaining samples, sample preparation and analysis must be used. These are described in Official Methods of Analysis of the Association of Official Analytical Chemists, 11th edition, 1970, and in succeeding issues of the Journal of the Association of Official Analytical Chemists. In evaluating replicate data, table 19, page 935, Journal of the Association of Official Analytical Chemists, volume 49, No. 5, October, 1966 should be followed.

Averaging at least two values must be adhered to. If more than two values are obtained, all significant values must be averaged. Values carried to two decimals are needed in applying averages to this table. Values may be "rounded" to one place where preferred in reporting.

The overall index value is calculated by comparing the commercial value guaranteed with the commercial value found. Unit values of the nutrients used shall be those referred to in section 11.

Overall index value--example of calculation for a 10-10-10 grade found to contain 10.1% Total Nitrogen (N), 10.2% Available Phosphoric Acid (P₂O₅), and 10.1% Soluble Potash (K₂O). Nutrient unit values are assumed to be \$3 per unit N, \$2 per unit P₂O₅, and \$1 per unit K₂O.

10.0 units N	x3=	30.0
10.0 units P2O5	x2=	20.0
10.0 units K2O	x1=	10.0
Commercial Value Guarantee	=	<u>60.0</u>

10.1 units N	x3=	30.3
10.2 units P2O5	x2=	20.4
10.1 units K2O	x1=	10.1
Commercial Value Found	=	<u>60.8</u>

$$\frac{60.8}{60.0} \times 100 = 101.3\%$$

Overall index value =

- (b) Secondary and minor elements shall be deemed deficient if any element is below the guarantee by an amount exceeding the values in the following schedule:

Element	Allowable Deficiency
Calcium)	0.2 unit + 5% of guarantee
Magnesium)	" " " "
Sulfur)	" " " "
Boron)	0.003 unit + 15% of guarantee
Cobalt)	0.0001 unit + 30% of guarantee
Molybdenum)	" " " "
Chlorine)	0.005 unit + 10% of guarantee
Copper)	" " " "
Iron)	" " " "
Manganese)	" " " "
Sodium)	" " " "
Zinc)	" " " "

The maximum allowance when calculated in accordance to the above shall be 1 unit (1%).

7. Sampling.

Sampling equipment and procedures shall be those adopted by The Association of Official Analytical Chemists wherever applicable.

8. Breakdown of Plant Food Elements Within the Guaranteed Analysis.

When a plant nutrient guaranteed is broken down into the component forms, the percentage for each component shall be shown before the name of the form.

EXAMPLE: 4% Nitrate Nitrogen.