Florida
Fertilizer Registration and Labeling Guidelines

William R. Cox, Environmental Manager
Bureau of Compliance Monitoring
Fertilizer Section
3125 Conner Boulevard, Building #8
Tallahassee, Florida 32399-1650
Tel: 850-617-7861
Email: William.Cox@freshfromflorida.com

CHAPTER 5
APPENDIX 1

Section

5.01 INTRODUCTION

Florida's Commercial Fertilizer Law, Chapter 576 FS, rules & regulations govern fertilizers distributed and offered for sale in the State of Florida. The information contained herein is a reference guide only to assist you to label fertilizers, register specialty fertilizer products and become a fertilizer licensee in the State of Florida. The labeling guidance document is an informational brochure to assist you but is not itself a rule or law. You may examine the Florida Fertilizer Law, Chapter 576, Florida Statutes and Chapter 5E-1 Florida Administrative Code by visiting this site: http://www.flaes.org/statutesandrules.html .

5.02 LICENSING AND REGISTRATION

A person whose name appears upon a label and who guarantees a fertilizer may not distribute that fertilizer to a non-licensee until a license to distribute has been obtained by that person from the department upon payment of a $200 fee. (The distributor of the guarantor's fertilizer does not require a fertilizer license from the department). The name of the Licensee must appear on the label. See 576.021 FS.

All specialty brand fertilizers are to be registered prior to being sold in Florida, as required by Sections 576.021(2), Section 576.045(2) FS, and Rules which have been adopted thereunder. Each brand and grade of Specialty Fertilizer Registration cost $200 each.

A Surety Bond or Certificate of Deposit shall be secured in accordance with Section 576.041, FS, before a license can be issued. Registrations of specialty brand fertilizer must be renewed annually starting July 1, each year.

Specialty Fertilizer Registrations will expire June 30, each year. Specialty Fertilizers not being renewed for the next registration period must be removed from the shelves.

5.03 REQUIREMENTS FOR PLANT NUTRIENTS

A plant nutrient guarantee shall be construed to represent that recoverable by the applicable Official Method of Analysis (AOAC).

Primary Plant Nutrient Requirements (see Rule 5E-1.003

Primary plant nutrients when guaranteed shall be expressed as Total Nitrogen, Available Phosphate (P205) and Soluble Potash (K20). The nitrogen breakdown shall equal the total nitrogen guaranteed. There shall be a guarantee of appropriate plant nutrient content for each ingredient present expressed in the derivation statement located below the Soluble Potash (K20) guarantee.

When urea is present, it may be guaranteed either as "water soluble nitrogen", "other water soluble nitrogen" or "urea nitrogen", at the option of the licensee.

5.04 CHLORINE CALCULATIONS

The maximum chlorine guarantee must be reasonably accurate; it should not be purposely inflated without regard to actual content of source materials represented. The determination of the appropriateness of chlorine guarantee should be predicated on the known or expected constituency of plant nutrient materials present in the mixture.

Potash guarantee derived from muriate only: The chlorine guarantee must be at least 75% and not more than 100% of the potash guarantee.

Potash guarantee derived from sources other than muriate, i.e., sulfate of potash, sulfate of potash magnesia, nitrate of potash: The maximum chlorine guarantee shall be 2% or a value calculated according to the AAPFCO recommendation, (K_20 guarantee x 0.05) + .5 = chlorine value. A value of zero (0) may be used provided the theoretical value is less than 1%.

In determining the potash to be considered as derived from sulfate of potash magnesia and muriate, we will assume a 1:1 K_20:MgO (or 1.66:1 K_20:Mg) ratio. Potash guarantee 8%, of which 6% is derived from muriate and 2% from sources other than muriate. 100% of chlorine derived from muriate = 6%. (6% x .75) + (2% x .05) + .5 = chlorine derived from muriate and other source =5.1%

5.05 WHEN THE TERM "ORGANIC" IS USED IN THE LABELING

When the term "organic" is used in the label, labeling, or advertisement of any fertilizer, the water insoluble nitrogen must not be less than 60% of the total guaranteed nitrogen so designated.

5.06 SECONDARY PLANT NUTRIENTS

Secondary plant nutrients must be shown on the specialty fertilizer Application for Registration.

When a claim is made for secondary plant nutrients, the guarantees shall be expressed as elements, except liming materials and gypsum. When sulfur (S) is claimed as a plant nutrient, it shall be specified as to the form present, either "free" or "combined", or both. "Specialty Fertilizer" defined in Section 576.011(36), F.S., shall be exempt from Sulfur guarantees.

Magnesium, Manganese, Iron, Zinc and Copper shall be guaranteed as to Total, Soluble or both depending upon the source material. See Rule 5E-1.003 FAC. The commonly accepted chemical names of materials used as sources shall be stated, including chelate (Manganese EDTA, Iron EDTA), as designated in Rule 5E-1.003, F.A.C.

When a chelated form of a plant nutrient is claimed in addition to another form of the same element, the chelated portion shall be guaranteed and the specific chelated nutrient shall be listed as a source in the "Derived from" statement. The chelated guarantee shall be equal to or less than the "Soluble" or "Water Soluble" element guarantee.

If both chelated and non-chelated forms of a secondary nutrient are present, separate guarantees are to be stated. Please refer to Rule 5E-1.003, F.A.C. When a chelated source is present in the derived from statement, the guarantee is understood to be chelated and any deficient lots will be assessed accordingly. The general term "Iron Chelate" or "Chelated Iron" (or analogous term for other secondaries) is not acceptable as a source material listing; the specific chelated compound, and agent (e.g., "Iron EDTA, Manganese EDTA or appropriate", etc.) is to be stated.

5.07 LIMING MATERIALS AND GYPSUM OR CALCIUM SULFATE

The labeling of liming materials is expressed Rule 5E-1.001 Florida Administrative Code. In addition to calcium and magnesium expressed as carbonate, the neutralizing value, in terms of

calcium carbonate equivalence (CCE), must be shown. If all the neutralizing value is in the calcium form, then the % calcium carbonate and % CCE will be identical. If, however, part of the neutralizing value is in the calcium form and part in the magnesium form, then the CCE will be higher than an arithmetic total of the two. This is because magnesium carbonate is 1.19 times as effective in neutralizing value as calcium carbonate. (Example: 1.00% $MgC0_3$ would be equal to 1.19% CCE; whereas, 1.00% $CaC0_3$ would be equal to 1.00% CCE).

5.08 TONNAGE REPORTING

Each licensee shall submit to the Department on a monthly basis fertilizer forms DACS13239 Monthly Report of Fertilizer Sold In The State of Florida (accompanied with check or money order), and DACS13238 Monthly Fertilizer Tonnage Report summary report conforming to the Uniform Fertilizer Tonnage Reporting System of the Association of American Plant Food Control Officials and/or in a format prescribed by the department, see Rule 5E-1.012 FAC. Fees and forms are to be submitted on or before the 15th of the month following report period.

5.09 TAGS AND LABELS

The licensee name; address and license number, must be shown on tags or labels see 576.031 FS. The number must be clear, legible and appear prominently and conspicuously on the label in close proximity of the brand name or guaranteed analysis. The number must be placed in such a manner as to avoid any misinterpretation or confusion with percentages, pounds or any other figures or statements, and may in no way be misleading. The Florida License Number" shall be expressed as follows: FXXX.

5.10 LABELING MIXED FERTILIZER AND/OR FERTILIZER MATERIALS

Brand Name
Grade
Guaranteed Analysis:

**Total Nitrogen (N).....___%

___% Nitrate Nitrogen
____% Ammoniacal Nitrogen
___% Water Soluble Nitrogen
___% Urea Nitrogen
____% Water Insoluble Nitrogen

Available Phosphate as (P_20_5) .....___%
Soluble Potassium as (K_20).....___%
Chlorine, Not more than .....___%

Total Magnesium as (Mg) .....___%
____% Water Soluble Magnesium (Mg)
___% Chelated Magnesium (Mg)

Total Manganese as (Mn) .....___%
__ % Soluble Manganese (Mn)
____% Chelated Manganese

Total Copper as (Cu) .....___%
____% Soluble Copper (Cu)
____% Chelated Copper

Total Sulfur as (S).....___%
____% Combined Sulfur (S)
____% Free Sulfur (S)

Total Iron as (Fe) .....___%
____% Soluble Iron (Fe)
I____% Chelated Iron (Fe)

Zinc as(Zn) .....___%
___% Soluble Zinc (Zn)
____% Chelated Zinc

Derived From: PLANT FOOD SOURCE MATERIALS GO HERE
** This product contains _____ % slow or controlled release nitrogen.

FXXXX

5.11 LABELING SECONDARY AND MICRO PLANT NUTRIENT MIXTURE

Brand Name
Guaranteed Analysis:

Total Magnesium as (Mg) .....___%
____% Water Soluble Magnesium (Mg)
____% Chelated Magnesium (Mg)

Total Manganese as (Mn) .....___%
__ % Soluble Manganese (Mn)
____% Chelated Manganese

Total Copper as (Cu) .....___%
____% Soluble Copper (Cu)
____% Chelated Copper

Total Sulfur as (S).....___%
____% Combined Sulfur (S)
____% Free Sulfur (S)

Total Iron as (Fe) .....___%
____% Soluble Iron (Fe)
____% Chelated Iron (Fe)

Zinc as(Zn) .....___%
____% Soluble Zinc (Zn)
____% Chelated Zinc

Derived from: (List actual materials used, e.g. Copper Sulfate, Copper Oxide, Copper EDTA, Manganese Sulfate, Manganese Oxide, Manganese HEDTA, etc.

FXXXX

5.12 BASIC SLAG, OPEN HEARTH SLAG. SYNTHETIC OR OTHER FORMS OF SLAG FOR AGRICULTURAL PURPOSES

BRAND NAME
Guaranteed Analysis:

Available Phosphorus as ($P_2 0_5$).....___%

Total Phosphorus as ($P_2 0_5$) .....___%

Total Magnesium as (Mg) .....___%
____% Water Soluble Magnesium (Mg)
___% Chelated Magnesium (Mg)

Total Manganese as (Mn) .....___%
__ % Soluble Manganese (Mn)

Total Copper as (Cu) .....___%
____% Soluble Copper (Cu)

Total Sulfur as (S).....___%
____% Combined Sulfur (S)
____% Free Sulfur (S)

Total Iron as (Fe) .....___%
____% Soluble Iron (Fe)

Zinc as(Zn) .....___%
___% Soluble Zinc (Zn)

Degree of fineness (passing ___ Mesh) .....___%

Chlorine, not more than .....___%

Derived from: Derived from: (The actual materials from which the above guarantees are determined must be shown, e.g.:Basic Slag, Manganese Sulfate, etc.)
FXXXX

5.13 LABELING SECONDARY PLANT NUTRIENT

NAME OF MATERIAL OR
BRAND NAME
Name and Address of Registrant
Net Weight
Guaranteed Analysis:

Total Magnesium as (Mg) .....___%
____% Water Soluble Magnesium (Mg)

Derived from: (Name actual material, e.g. Magnesium Sulfate and Magnesium Oxide)
FXXXX

5.14 GROUND PHOSPHATE ROCK

Guaranteed Analysis:

Available Phosphorus as(P_2O_5) .....___%

Total Phosphorus as (P_2O_5).....___%

Degree of Fineness (Passing _____ Mesh).....___%
FXXXX

5.15 LABELING CALCITIC LIMING MATERIAL

BRAND NAME
Guaranteed Analysis:

Calcium as ($CaCO_3$) .....___%

Calcium Carbonate Equivalence.....___ %

Passing 8 mesh sieve, not less than.....___%

Passing 20 mesh sieve, not less than.....___%

Passing 50 mesh sieve, not less than.....___%

Moisture, not more than.....___%

This product requires _____lbs. to be equal to 1 ton of
standard liming material.

FXXXX

Note: In order to obtain how many pounds = to (1) one ton of standard liming material, use the formula below:

$$\frac{2000 \times 90}{CCE} =$$

The Calcium Carbonate Equivalence shall be the same as the Calcium Carbonate claim.

5.16 LABELING DOLOMITE LIMING MATERIAL

BRAND NAME
Guaranteed Analysis:

Calcium as ($CaC0_3$) .....___%

Magnesium as ($MgCO_3$).....___%

Calcium Carbonate Equivalence.....___%

Passing 8 mesh sieve, not less than.....___%

Passing 20 mesh sieve, not less than.....___%

Passing 50 mesh sieve, not less than.....___%

Moisture, not more than.....___%

This product requires _____lbs. to be equal to 1 ton of standard liming material.

FXXXX

Note:

To calculate pounds equal to one ton of standard liming material:

In order to obtain how many pounds = to (1) one ton of standard liming material, use the formula below:

$$\frac{2000 \times 90}{CCE} = \frac{180{,}000}{} =$$ (pounds equal to one ton std. liming material)

To calculate Calcium Carbonate Equivalence:

(1) Multiply Magnesium Carbonate by 1.19, then add Calcium Carbonate ($CaCO_3$)

5.17 LABELING GYPSUM, CALCIUM SULFATE, LAND PLASTER

GYPSUM
Guaranteed Analysis:

Calcium Sulfate ($CaS0_4$).....___%

Derived from: Gypsum

FXXXX

5.18 LABELING CALCIUM HYDROXIDE

BRAND NAME
GUARANTEED ANALYSIS:

Calcium Hydroxide ($Ca(OH)_2$) .....___%

Derived from: Hydrated Lime.

5.19 LABELING COTTONSEED MEAL

BRAND NAME
Guaranteed Analysis:

Total Nitrogen (N) .....___%

___% Water Soluble Nitrogen
____% Water Insoluble Nitrogen

Available Phosphate as (P_20_5) .....___%

Soluble Potassium as (K_20).....___%

Derived From: Cottonseed Meal

FXXXX

5.20 LABELING SOIL CONDITIONERS, SOIL ADDITIVES OR SOIL AMENDMENTS

BRAND NAME
Guaranteed Analysis:

SOIL AMENDING INGREDIENTS:

NAME OF INGREDIENT.....___%

(Identify and list all soil amending ingredients)

TOTAL OTHER INGREDIENTS .....___%

FXXXX

PURPOSE OF PRODUCT:

DIRECTIONS FOR APPLICATION:

5.21 LABELING MANURE PRODUCTS

Brand Name
Grade
Guaranteed Analysis:

Total Nitrogen (N) .....___%

____% Ammoniacal Nitrogen
___% Water Soluble Nitrogen
____% Water Insoluble Nitrogen

Available Phosphate as (P_20_5) .....___%

Soluble Potassium as (K_20).....___%

Chlorine, Not more than .....___%

Derived From: Cow Manure, Horse Manure, Chicken Manure

FXXXX

5.22 LABELING MICRONUTRIENTS

IRON, ZINC, COPPER, MAGNESIUM & MANGANESE

LABEL EXAMPLE WHEN THE FORMULATION CONTAINS INSOLUBLE AND SOLUBLE SOURCE MATERIALS:

Total Manganese (Mn).....2.13%
2.00% Water Soluble Manganese (Mn)
Derived From: Manganese Oxide, Manganese Sulfate

or

Manganese (Mn).....2.13%
2.00% Water Soluble Manganese (Mn)
Derived From: Manganese Oxide, Manganese Sulfate

In this case, the "Total" will always be guaranteed higher than the "Soluble" and/or "Water Soluble guarantee". "Total" may be expressed without denoting the Total in front of the element.

5.23 LABEL EXAMPLE WHEN THE FORMULATION CONTAINS SOLUBLE SOURCE MATERIALS:

Total Manganese (Mn) 2.00%
2.00% Water Soluble Manganese (Mn)
Derived From: Manganese Sulfate

Or

Manganese (Mn) 2.00%
2.00% Water Soluble Manganese (Mn)
Derived From: Manganese Sulfate

Or
Water Soluble Manganese (Mn).....2.00%
Derived From: Manganese Sulfate

In this case, the Total and Water Soluble elements must be guaranteed the same.

5.24 LABEL EXAMPLE WHEN THE FORMULATION CONTAINS INSOLUBLE

SOURCE MATERIALS:

Total Manganese (Mn) 2.00%
Derived From: Manganese Oxide

Or

Manganese (Mn).....2.00%
Derived From: Manganese Oxide

5.25 LABEL EXAMPLE WHEN THE FORMULATION CONTAINS CHELATING

AGENT SOURCE MATERIALS:

Manganese (Mn).....1.00%
1.00% Chelated Manganese (Mn)
Derived From: Manganese EDTA.

Or

Chelated Manganese (Mn) 1.00%
Derived From: Manganese EDTA.

5.26 LABEL EXAMPLE WHEN THE FORMULATION CONTAINS CHELATING AGENTS, SOLUBLE AND INSOLUBLE SOURCE MATERIALS

Example Soluble Source and Chelating Agent:

Total Manganese (Mn).....1.00%
1.00% Chelated Manganese (Mn)
1.00% Soluble Manganese or Water Soluble Manganese (Mn)
Derived From: Manganese Sulfate, Manganese EDTA

Example Soluble Source, Insoluble Source and Chelating Agent:

Total Manganese (Mn).....2.50%
1.25% Water Soluble Manganese (Mn)
1.00% Chelated Manganese (Mn)

Derived From: Manganese Sulfate, Manganese EDTA, Manganese Oxide

Example of Chelating Agent Only:

Total Manganese (Mn).....1.00%
1.00% Chelated Manganese (Mn)

Derived From: Manganese EDTA.

5.27 GUARANTEES FOR FERTILIZER MATERIALS

All forms of nitrogen to be expressed as N, phosphoric acid as P_20_5, potash as K_20, and secondary plant nutrients as the element, unless otherwise indicated. Guarantees should reflect plant nutrient recoverable by Official AOAC Analytical Procedures. Chlorine to be guaranteed as provided in Rule 5E-1.003 Florida Administrative Code.

ALUMINUM SULFATE
Total aluminum

ANHYDROUS AMMONIUM OR AQUA AMMONIA
Total nitrogen
Ammoniacal nitrogen

AMMONIUM PHOSPHATE
Total nitrogen
Ammoniacal nitrogen

AMMONIUM NITRATE
Total nitrogen
Nitrate nitrogen
Ammoniacal nitrogen

AMMONIUM NITRATE-SULFATE
Total nitrogen
Nitrate nitrogen
Ammoniacal nitrogen

AMMONIUM PHOSPHATE-NITRATE
Total nitrogen
Nitrate nitrogen
Ammoniacal nitrogen
Available phosphoric acid

AMMONIUM NITRATE-LIMESTONE
Nitrate nitrogen
Ammoniacal nitrogen
Available phosphoric acid

AMMONIUM SULFATE
Total nitrogen
Ammoniacal nitrogen

AMMONIUM SULFATE-NITRATE
Total nitrogen
Nitrate nitrogen
Ammoniacal nitrogen

AMMONIUM THIOSULFATE
Total nitrogen
Ammoniacal nitrogen
Combined sulfur (Optional)

DRIED BLOOD
Total nitrogen

Water soluble nitrogen
Water insoluble nitrogen

BONE MEAL AND BONE TANKAGE
Total nitrogen
Ammoniacal nitrogen
Water soluble nitrogen
Water insoluble nitrogen
Available phosphoric acid

BORON COMPOUNDS
Boron (B)

CALCIUM AMMONIUM NITRATE
Total nitrogen
Nitrate nitrogen
Ammoniacal nitrogen

CALCIUM CARBONATE (Limestone)
Calcium Carbonate Equivalence
Calcium as $CaCO_3$
Passing 8 mesh sieve, not less than
Passing 20 mesh sieve, not less than
Passing 50 mesh sieve, not less than
Moisture, not more than
This product requires ___lbs. to
be equal to 1 ton of std. liming material

CALCIUM NITRATE
Total nitrogen
Nitrate nitrogen
Ammoniacal nitrogen

CALCIUM METAPHOSPHATE
Available phosphoric acid

Total phosphoric acid
CALCIUM SULFATE
(Gypsum or land plaster
or phospho plaster) $CaSO_4$

CALCIUM CYANAMID
Total nitrogen
Water soluble nitrogen
Water insoluble nitrogen

CASTOR POMACE
Complete primary nutrients

CITRUS MEAL
Complete primary nutrients

COBALT COMPOUNDS
Total cobalt

CALCIUM HYDROXIDE
$Ca(OH)_2$

COMPOST, SOIL CONDITIONERS
(See Rule 5E-1.003FAC)

COPPER COMPOUNDS
Total copper
Water Soluble Copper
(If chelated, must
be so guaranteed)

COTTON BURR ASH (Carbonate of potash)
Soluble potash, Chlorine, maximum

COTTON SEED MEAL
Complete primary nutrients

DOLOMITE
Calcium Carbonate Equivalence
Calcium as $CaCO_3$
Magnesium as $MgCO_3$
Passing 8 mesh sieve, not less than
Passing 20 mesh sieve, not less than
Passing 50 mesh sieve, not less than
Moisture, not more than
This product requires _____ lbs. to be equal to 1 ton of std. liming material.

CALCIUM (Secondary) MATERIALS
Total calcium
FISH TANKAGE
Complete primary nutrients

FERROUS AMMONIUM SULFATE
Total nitrogen
Ammoniacal nitrogen
Total iron

GUANO
Complete primary nutrients

HARDWOOD ASHES
Soluble potash

SYNTHETIC HARDWOOD ASHES
Soluble potash

IRON COMPOUNDS
Total Iron
Water Soluble Iron
(If chelated, guarantee as chelated)

ISOBUTYLENE DIUREA
Total nitrogen

Water soluble Nitrogen or urea nitrogen
Water insoluble nitrogen

MAGNESIUM COMPOUNDS
Total magnesium
Water soluble magnesium
(If chelated, guarantee as chelated)

MANGANESE COMPOUNDS
Total manganese
Water Soluble Manganese
(If chelated, guarantee as chelated)

MANURES
Complete primary nutrients

MOLYBDENUM COMPOUNDS
molybdenum

NITRATE OF SODA
Total nitrogen
Nitrate nitrogen

NITRATE OF SODA-POTASH
Total nitrogen
Nitrate nitrogen
Soluble potash
NITROGEN SOLUTIONS
Total nitrogen
Whichever forms of nitrogen
are present

ORGANIFORM
Total nitrogen
Water soluble nitrogen
or urea nitrogen
Water insoluble nitrogen

PEANUT MEAL
Complete primary nutrients

DIAMMONIUM PHOSPHATE and
MONO-AMMONIUM PHOSPHATE
Total nitrogen
Ammoniacal nitrogen
Available phosphoric acid

PHOSPHORIC ACID
Available phosphoric acid

COLLOIDAL PHOSPHATE
Available phosphoric acid
Total phosphoric acid
Degree of fineness
(% passing _____ mesh)

SULFUR COATED UREA
Total nitrogen
Water soluble nitrogen
or urea nitrogen
Free sulfur

SUPERPHOSPHATE
Available phosphoric acid

POTASSIUM CHLORIDE
Soluble potash
Chlorine, maximum

POTASSIUM AMMONIUM NITRATE
Total nitrogen, Nitrate Nitrogen, Ammoniacal Nitrogen, Soluble Potash

POTASSIUM NITRATE
Total nitrogen
Nitrate nitrogen
Soluble potash

POTASSIUM PHOSPHATE
POTASSIUM POLYPHOSPHATE & POTASSIUM METAPHOSPHATE
Available phosphoric acid
Soluble potash

POTASSIUM SULFATE
Soluble potash
Total magnesium
Water soluble magnesium

SULFATE OF POTASH MAGNESIA
Soluble potash
Total magnesium
Water soluble magnesium

POTASSIUM HYDROXIDE
Soluble potash

SLAG
Percentages or "none" in each space
Degree of fineness (% passing
_____ mesh)

SLUDGE
Complete primary nutrients

SOYBEAN MEAL
Complete primary nutrients

SULFUR
Combined or free sulfur, as
applicable

TOBACCO
Complete primary nutrients

TUNG MEAL
Complete primary nutrients

UREA
Total nitrogen
Water soluble nitrogen
or urea nitrogen

UREAFORMALDEHYDE
Total nitrogen
Water soluble nitrogen
or urea nitrogen (maximum 40% of
total nitrogen)
Water insoluble nitrogen
ZINC COMPOUNDS
Total zinc (If chelated,
must be so guaranteed)

AMMONIATED SUPERPHOSPHATE
Total nitrogen
Nitrate nitrogen
Ammoniacal nitrogen
Water soluble nitrogen
or urea nitrogen
Available phosphoric acid
SUPERPHOSPHATE
Available phosphoric acid

TANKAGE
Total nitrogen
Water soluble nitrogen
Water insoluble nitrogen
Available phosphoric acid
Chlorine, maximum

Prepared by William Cox
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