

DEPARTMENT OF AGRICULTURE

Inspection and Consumer Services Division

FERTILIZERS AND SOIL CONDITIONERS

8 CCR 1202-4

[Editor's Notes follow the text of the rules at the end of this CCR Document.]

Part 1. LEGAL AUTHORITY [Eff. 11/30/2008]

1.1 Title 35, Article 12, Colorado Revised Statutes.

Part 2. DEFINITIONS [Eff. 11/30/2008]

2.1 These Rules incorporate the official terms as published in the 2008 Official Publication of the Association of American Plant Food Control Officials, Inc. (AAPFCO), incorporated herein by reference (later amendments not included), except as the Commissioner of Agriculture ("Commissioner") designates otherwise in specific cases.

Part 3. REGISTRATION [Eff. 11/30/2008]

3.1 Each commercial fertilizer, soil conditioner, or plant amendment product shall be registered by the person whose name appears on the label before being distributed in this state. All registrations shall expire annually on June 30. Applications for renewal of registrations must be submitted each year on or before that date.

3.2 Each manufacturing facility that produces commercial fertilizer custom mixes in this state must be registered as required in Section 35-12-104 (7), C.R.S. All registrations shall expire annually on June 30. Applications for renewal of registrations must be submitted each year on or before such date.

3.3 Each manufacturing facility that produces compost in this state must be registered as required in Section 35-12-104(8) (a), C.R.S. All registrations shall expire annually on December 31. Applications for renewal of registrations must be submitted each year on or before such date.

3.4 Each manufacturing facility in this state that produces compost shall register with the Commissioner except that:

(a) Producers of less than ten (10) tons of compost per calendar year shall not be required to register;

(b) Any facilities regulated under Section 14 of Part 1 of the Colorado Department of Public Health and Environment Regulations Pertaining to Solid Waste Sites and Facilities, 6 CCR 1007-2, shall not be required to register.

3.5 Only fertilizers containing essential plant nutrients derived from sources recognized by AAPFCO may be registered. Iron sucrate may only be registered for use as an iron source for specialty fertilizers.

Part 4. DISTRIBUTION FEES - REPORTS [Eff. 11/30/2008]

4.1 Each registrant shall file an affidavit annually with the Commissioner within forty-five (45) days after January 1 each year that discloses the pounds or tonnage of commercial fertilizer, soil

conditioner, or plant amendment sold or distributed in the state during the preceding twelve (12) month period.

4.2 Such affidavit shall be submitted on the form furnished by the Commissioner, and shall accurately report all information related to product distribution specified on the form.

Part 5. LABEL REQUIREMENTS [Eff. 11/30/2008]

5.1 Fertilizer labels

The following information shall be displayed on the product label in a readable and conspicuous form:

(a) Product name

(b) Grade

(c) Guaranteed Analysis in the following format and order:

Guaranteed Analysis

Total Nitrogen (N) _____%

_____ % Ammoniacal Nitrogen**

_____ % Nitrate Nitrogen**

_____ % Water Insoluble Nitrogen*

_____ % Urea Nitrogen**

_____ % (other recognized and determinable forms of Nitrogen)**

(d) Available Phosphate (P_2O_5) _____%

(e) Soluble Potash (K_2O) _____%

(f) (Other nutrients, elemental basis) _____%***

(g) Directions for use sufficient to ensure the safe and effective use of the product that, at a minimum, specify:

(i) The type(s) of plant(s) for which the product is intended

(ii) The recommended application method(s) and rate(s)

(iii) Any warning or caution statements necessary to avoid harm to the target plant(s), or other plants or animals

(h) Net weight or mass, net volume of liquid or dry material, or count.

* If claimed or the statement "organic" or "slow acting nitrogen" or similar terms are used on the label

** If claimed.

*** As prescribed by Rule 5.2

5.2 Plant Nutrients in addition to Nitrogen, Phosphorous, and Potassium

- (a) Other plant nutrients, when mentioned in any form or manner, shall be guaranteed only on an available elemental basis. Sources of the elements guaranteed and proof of availability shall be provided to the Commissioner upon request. The minimum percentages that will be accepted for registration are as follows:

Element	Minimum %
Calcium (Ca)	1.00
Magnesium (Mg)	0.50
Sulfur (S)	1.00
Boron (B)	0.02
Chlorine (Cl)	0.10
Cobalt (Co)	0.0005
Copper (Cu)	0.05
Iron (Fe)	0.10
Manganese (Mn)	0.05
Molybdenum (Mo)	0.0005
Nickel (Ni)	0.0010
Sodium (Na)	0.10
Zinc (Zn)	0.05

Any of the above-listed elements which are guaranteed shall appear in the order listed, immediately following guarantees for the primary nutrients, nitrogen, phosphorous and potassium.

- (b) In determining the percentages of the plant nutrients guaranteed on the label the analytical methods specified in Section 6 shall be used, except that for copper, iron, manganese, zinc and cobalt, only that which is in the Na₂ EDTA soluble form as determined by the analytical method in Rule 6 (c), or that which is in the water soluble form determined by the analytical method in Rule 6 (d), whichever is higher, may be guaranteed. However, if the source for iron is iron succrate, this exception does not apply.
- (c) Guarantees or claims for the above-listed plant nutrients are the only ones which will be accepted except that fertilizer guarantees may include other nutrients, recognized by AAPFCO. Proposed labels and directions for use of the fertilizer shall be furnished with the application for registration upon request.

5.3 Slowly Released Plant Nutrients

- (a) No fertilizer label shall bear a statement that connotes or implies that certain plant nutrients contained in a fertilizer are released slowly over a period of time, unless the slow release components are identified and guaranteed at a level of at least 15% of the total guarantee for that nutrient(s).
- (b) Types of products recognized by the Commissioner to have slow release properties include, but are not limited to, (1) water insoluble products, such as natural organics, urea form materials, urea-formaldehyde products, isobutylidene diurea, and oxamide; (2) coated slow release products, such as sulfur coated urea and other encapsulated soluble fertilizers; (3) occluded slow release products in which fertilizers or fertilizer materials are mixed with waxes, resins, or other inert materials and formed into particles; and (4)

products containing water soluble nitrogen such as ureaform materials, urea-formaldehyde products, methylenediurea (mdu), dimethylenetriurea (dmu), and dicyanodiamide (dcd).

- (c) The term, “water insoluble” , and “occluded slow release” are accepted as descriptive of these products, provided the manufacturer can demonstrate a testing program to substantiate the claim that is acceptable to the Commissioner.
- (d) A laboratory procedure, acceptable to the Commissioner for evaluating the release characteristics of the product(s) must be provided by the manufacturer if requested by the Commissioner.

5.4 Soil Conditioner and Plant Amendment Labels

The following information must be displayed on the product label in a readable and conspicuous form:

- (a) Net Weight or mass, net volume of liquid or dry material, or count.
- (b) Product Name.
- (c) Statement of composition including the name and percentage of each conditioning and amending ingredient identified by the name published in the 2008 Official Publication of the Association of American Plant Food Control Officials, Inc., incorporated herein by reference (later amendments not included). If no APPFCO name exists, the common or usual name shall be used.
- (d) Total percent of other ingredients.
- (e) Purpose of product.
- (f) Directions for use sufficient to ensure the safe and effective use of the product that, at a minimum, specify:
 - (i) The type(s) of plant(s) or soil(s) for which the product is intended.
 - (ii) The recommended application method(s) and rate(s).
 - (iii) Any warning or caution statements necessary to avoid harm to the target plants (if applicable), or other plants or animals.
- (g) Name and address of the registrant.

5.5 Compost Labels

- (a) The following information shall be displayed on the product label in a readable and conspicuous form:
 - (i) Product name.
 - (ii) Directions for use sufficient to ensure the safe and effective use of the product that at minimum specify:
 - (a) The type(s) of plant(s) or soil(s) for which the product is intended;

- (b) The recommended application method(s) and rate(s); and
 - (c) Any warning or caution statements necessary to avoid harm to the target plants (if applicable), or other plants or animals.
- (iii) Name and address of the manufacturer or distributor.
 - (iv) Net weight or volume.
 - (v) Additional analytical information, if supplied, shall be listed under the heading "typical analysis" and shall not be considered to be a guarantee.
- (b) Compost distributed in bulk must be accompanied by a printed or written statement showing the pH level & soluble salt level in addition to the information required above.
 - (c) Any product labeled as compost must meet the following minimum standards:
 - (i) The product must contain carbon and nitrogen in a ratio of less than or equal to 18, as determined by the method specified in Rule 6.2 (a).
 - (ii) The product must have a SOLVITA Ammonia Test result of greater than or equal to 4, as determined by the method specified in Rule 6.2 (b).
 - (iii) The product must have a SOLVITA Carbon Dioxide test result of greater than or equal to 5, as determined by the method specified in Rule 6.2 (b).

Part 6 Analytical Methods [Eff. 11/30/2008]

6.1 The methods of sampling and analysis for fertilizers and soil conditioners shall be those set forth in the 18th Edition of the Official Methods of Association of Official Analytical Chemists (AOAC) International, incorporated herein by reference (later amendments not included), provided that copper, iron, manganese, zinc and cobalt shall be analyzed using only the following methods:

- (a) AOAC Official Method 965.09 Nutrients (Minor) in Fertilizers, Sample Preparation C (e)(2).
- (b) AOAC Official Method 983.02 Potassium in Fertilizers.
- (c) AOAC Official Method 965.09 Nutrients (Minor) in Fertilizers, Sample Preparation C (a), Acid Extractable Iron. This method only applies to iron derived from iron sucrate.

6.2 The methods for sampling and analysis of compost shall be those specified in Test Methods for the Examination of Composting and Compost, U. S. Composting Council Research and Education Foundation (CCREF), and United States Department of Agriculture (USDA) (TMECC, 2002) incorporated herein by reference (later amendments not included).

- (a) The carbon : nitrogen ratio shall be determined using TMECC Method 04.02D/2002-04-07 for analyzing total carbon and total nitrogen content.
- (b) The SOLVITA Carbon Dioxide and Ammonia test results shall be determined using TMECC Method 05.08-E/2002-04-07.

6.3 Investigational Allowances

- (a) A commercial fertilizer shall be deemed deficient if the analysis of any 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%:

<u>Guarantee percent</u>	<u>Nitrogen percent</u>	<u>Available Phosphoric acid percent</u>	<u>Potash percent</u>
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.

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

<u>ELEMENT</u>	<u>GUARANTEE</u>	<u>ALLOWABLE DEFICIENCY</u>
Calcium and Sulfur	1% and up	0.2 units + 5% of guarantee
Magnesium	0.5% and up	0.2 units + 5% of guarantee
Boron	.02% to 5%	.003 units + 15% of guarantee
.	5.0% and up	Potash Schedule 3.5 (a)
Cobalt and Molybdenum	.0005% to 1.0%	.0001 units + 30% of guarantee
.	1.0% to 4.0%	.2 units + 10% of guarantee
.	4.1% and up	Potash schedule 3.5 (a)
Chlorine, Iron & Sodium	0.1% to 4.0%	.005 units + 10% of guarantee
.	4.1% and up	Potash Schedule 3.5 (a)
Copper, Manganese, &	.05% to 4.0%	.005 units + 10% of

Zinc		gaurantee
.	4.1% and up	Potash Schedule 3.5 (a)

(c) 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 35-12-110, C.R.S. 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 ($P_2 O_5$), and 10.1% soluble potash ($K_2 O$) Nutrient unit values are assumed to be \$3.00 per unit N, \$2.00 per unit $P_2 O_5$ and \$1.00 per unit $K_2 O$.

10.0 units N	X 3 =	30.0
10.0 units $P_2 O_5$	X 2 =	20.0
10.0 units $K_2 O$	X 1 =	<u>10.0</u>
Commercial value guarantee	=	60.0
10.0 units N	X 3 =	30.3
10.2 units $P_2 O_5$	X 2 =	20.4
10.1 units $K_2 O$	X 1 =	<u>10.1</u>
Commercial value found	=	60.8
Overall index value	=	101.3%
60.8/60.0 X 100		

d) Soil conditioner ingredients and plant amending ingredients shall be deemed deficient if found below an amount exceeding 0.2 unit + 5% of the guarantee.

(e) The above tolerances listed in (a) and (b) are for single samples run in duplicate.

Part 7.0 ADULTERATION [Eff. 11/30/2008]

7.1 Fertilizer

(a) Any product distributed as a fertilizer that contains guaranteed amounts of phosphates and/or micronutrients shall be deemed adulterated if it contains one or more metals in amounts greater than the levels of metals established by the following table:

<u>Metals</u>	<u>ppm per 1% $P_2 O_5$</u>	<u>ppm per 1% Micronutrients</u> ¹
1. Arsenic	13	112
2. Cadmium	10	83
3. Cobalt	136 ²	2228 ²
4. Lead	61	463
5. Mercury	1	6
6. Molybdenum	42	300 ²
7. Nickel	250	1,900
8. Selenium	26	180
9. Zinc	420	2,900 ²

1 Micro-nutrients include secondary and micro plant nutrients. Secondary plant nutrients are calcium, magnesium, and sulfur. Micro plant nutrients are boron, chlorine, cobalt, copper, iron, manganese, molybdenum, nickel, sodium, and zinc.

2 Only applies when not guaranteed.

(b) To use the above table:

(i) First:

(A) For fertilizers with a phosphate guarantee but no micro-nutrient guarantee, multiply the percent guaranteed P_2O_5 in the product by the values in the table to obtain the maximum allowable concentration of each metal. The minimum value for P_2O_5 utilized as a multiplier shall be 6.0.

(B) For fertilizers with one or more micro-nutrient guarantees but no phosphate guarantee, multiply the sum of the guaranteed percentages of all micro-nutrients in the product by the value in the appropriate column in the Table to obtain the maximum allowable concentration (ppm) of each metal. The minimum value for micro-nutrients utilized as a multiplier shall be 1.

(C) For fertilizers with both a phosphate and a micro-nutrient guarantee, multiply the guaranteed percent P_2O_5 by the value in the appropriate column. The minimum value for P_2O_5 utilized as a multiplier shall be 6.0.

(ii) Then multiply the sum of the guaranteed percentages of the micro-nutrients by the value in the appropriate column. The minimum value for micro-nutrients utilized as a multiplier shall be 1.

(iii) Utilize the higher of the two resulting values as the maximum allowable concentration (ppm) of each metal.

7.2 Compost

(a) Any product labeled and distributed as compost shall be deemed adulterated if it contains one or more metals in amounts greater than the levels of metals established by the following table:

Metals	Maximum level mg/kg dry weight basis
Arsenic	41
Cadmium	39
Copper	1500
Lead	300
Mercury	17
Nickel	420
Selenium	100
Zinc	2800

(b) Any product labeled and distributed as compost shall be deemed adulterated if it contains a pathogen concentration greater than either of the following levels:

(i) Fecal coliform in an amount greater than 1000 most probable number per gram of total solids (dry weight basis); or

- (ii) Salmonella sp. bacteria in an amount greater than three (3) most probable number per four (4) grams of total solids (dry weight basis).

Part 8. MATERIAL INCORPORATED BY REFERENCE [Eff. 11/30/2008]

All materials incorporated by reference into these Rules may be examined at any state publications depository library. For further information on how the incorporated materials may be obtained or examined, please contact the Technical Services Section Chief at the Division of Inspection and Consumer Services, Department of Agriculture, 2331 West 31st Avenue, Denver, Colorado 80211.

Part 9. STATEMENTS OF BASIS, SPECIFIC STATUTORY AUTHORITY AND PURPOSE [Eff. 11/30/2008]

The Statements of Basis, Specific Statutory Authority and Purpose for rulemaking activity from 1971 to 1984 are no longer in the Department's files.

9.1 October 9, 2008 – Effective November 30, 2008

STATUTORY AUTHORITY:

The Commissioner of Agriculture, Colorado Department of Agriculture, adopts these permanent rules pursuant to the provisions and requirements of the Colorado Commercial Fertilizer, Soil Conditioner and Plant Amendment Act, Section 35-12-114, C. R. S.

PURPOSE:

The purpose of these Rules is to comply with the requirements of the Colorado Commercial Fertilizer, Soil Conditioner and Plant Amendment Act to provide specific guidelines for the manufacture, labeling, and distribution of commercial fertilizers, soil conditioners, plant amendments, and compost.

These rules:

- Adopt the most current version of the official terms as published in the 2008 Official Publication of the Association of American Plant Food Control Officials (AAPFCO).
- Establish registration dates for commercial fertilizer, soil conditioner, and plant amendment products.
- Establish registration dates for fertilizer and compost manufacturers.
- Establish the due date for distribution (tonnage) reports.
- Establish minimum standards and labeling requirements for compost.
- Establish directions for use requirements for fertilizer products.
- Remove all references to agricultural liming materials. These references were originally incorporated into these Rules because they are included in the AAPFCO Model Rules and Regulations. Due to the alkaline nature of Colorado soils, lime is not used; therefore, regulations that pertain to these materials are not needed.
- Establish the level of concentration of certain metals that would deem fertilizer to be adulterated.
- Establish the level of concentration of certain metals and pathogens that would deem compost

to be adulterated.

- Update sampling and laboratory analysis methods for fertilizers and soil conditioners.
- Establish the laboratory analysis method for iron sucrate.
- Establish sampling and laboratory analysis methods for compost.
- Update rules and remove outdated language.

FACTUAL AND POLICY ISSUES:

The factual and policy issues encountered in the proposal of these permanent Rules are as follows:

1. On August 6, 2008, The Colorado Commercial Fertilizer, Soil Conditioner, and Plant Amendment Act was amended by House Bill 08-1231.
 - a. HB 08-1231 requires the Department to set minimum standards for compost produced by those facilities that are not regulated by Colorado Department of Public Health and Environment (CDPHE).
 - b. The Department worked with compost industry stakeholders, CDPHE, and Colorado State University to develop compost minimum standards.
2. These new, revised rules are based upon national standard (model) regulations developed by AAPFCO, an organization comprised of state fertilizer regulatory officials. These rules promote standardization of fertilizer industry regulation amongst the states.
3. The Department met with fertilizer industry groups throughout the rule drafting process. The industry groups have indicated support for these Rules.

Editor's Notes

History

Entire Rule eff. 11/30/2008.