

SUBCHAPTER 48B - FERTILIZER

SECTION .0100 - FERTILIZER STANDARDS

02 NCAC 48B .0101 THE FERTILIZER SECTION

The Fertilizer Section has the responsibility of inspecting and testing fertilizers and liming materials that are used by North Carolina consumers to ensure proper composition and labeling.

History Note: Authority G.S. 106-660; 106-673;
Eff. January 1, 1985;
Amended Eff. March 1, 1994;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. March 24, 2019.

02 NCAC 48B .0102 CHLORINE GUARANTEE

The maximum chlorine guarantees permitted for tobacco plant bed fertilizers shall be as follows:

- (1) for fertilizers with nitrogen guarantees up to and including six percent, one-half of one percent chlorine;
- (2) for fertilizers with a nitrogen guarantee above six percent, one percent chlorine.

History Note: Authority G.S. 106-673;
Eff. January 1, 1985;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. March 24, 2019.

02 NCAC 48B .0103 MAXIMUM CHLORINE GUARANTEE

The maximum chlorine guarantees permitted for field crop tobacco fertilizers shall be:

- (1) For fertilizer with nitrogen guarantees up to and including four percent, a maximum chlorine guarantee of two percent is permitted;
- (2) For fertilizer with nitrogen guarantees greater than four percent, a maximum chlorine guarantee not more than one-half of the respective total nitrogen guarantee is permitted.

The maximum chlorine guarantee permitted in tobacco top dressers shall be two percent. All tobacco fertilizer shall carry a maximum chlorine guarantee.

History Note: Authority G.S. 106-673;
Eff. January 1, 1985;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. March 24, 2019.

02 NCAC 48B .0104 TOBACCO FERTILIZERS

Fertilizers manufactured or sold for tobacco must be branded as tobacco fertilizer including tobacco plant bed fertilizer and top dressers.

History Note: Authority G.S. 106-673;
Eff. January 1, 1985;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. March 24, 2019.

02 NCAC 48B .0105 PLAIN OR UNBRANDED BAGS

If fertilizer is sold in plain or unbranded bags, the grade of the fertilizer shall be shown on the tag in the same size type as that of the brand name and the grade shall be included either as a part of the brand name or shall immediately precede the guaranteed analysis.

History Note: Authority G.S. 106-673;
Eff. January 1, 1985;

Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. March 24, 2019.

02 NCAC 48B .0106 LABELING LIQUID COMMERCIAL FERTILIZERS

All tanks or other containers of liquid commercial fertilizer for direct application to the soil shall have attached, in a manner approved by the Commissioner of Agriculture, a label showing the following:

- (1) the name and address of the person guaranteeing registration;
- (2) the brand;
- (3) the grade;
- (4) the guaranteed analysis in the order and form required in 106-660 of the General Statutes of North Carolina.

*History Note: Authority G.S. 106-673;
Eff. January 1, 1985;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. March 24, 2019.*

02 NCAC 48B .0107 MATERIALS INFLUENCING COLOR OF FERTILIZER

When any non-fertilizer material is added to mixed tobacco fertilizer which influences the color of the finished product, such material shall be declared on the application for registration in such identifying terms as "iron oxide", "lamp-black", etc., and the package shall be marked "Artificially Colored" in conspicuous letters comparable to other lettering on the bag, the size of such letters to be approved by the Department of Agriculture.

*History Note: Authority G.S. 106-673;
Eff. January 1, 1985;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. March 24, 2019.*

02 NCAC 48B .0108 BORON-FERTILIZER MIXTURES

Boron may be used in fertilizers up to but not exceeding .1 percent without making any claim or guarantee for boron, but if used in excess of .1 percent, the amount used shall be claimed and guaranteed.

*History Note: Authority G.S. 106-673;
Eff. January 1, 1985;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. March 24, 2019.*

02 NCAC 48B .0109 BORON INVESTIGATIONAL ALLOWANCES

The following investigational allowances shall be permitted:

Boron Guarantee Percent	Investigational Allowance (Below Guarantee) Percent
Up to .019	.005
.02 to .029	.010
.03 to .10	.015
.11 to .20	.03
.21 to .30	.06
.31 to .50	.09
.51 and above	.12

*History Note: Authority G.S. 106-673;
Eff. January 1, 1985;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. March 24, 2019.*

02 NCAC 48B .0110 BORON PENALTIES

The penalties for deficiencies of boron below the investigational allowance shall be as follows:

- (1) up to and including .03 percent boron, three dollars (\$3.00) per ton;
- (2) exceeding .03 percent and including .06 percent boron, five dollars (\$5.00) per ton;
- (3) exceeding .06 percent boron, ten dollars (\$10.00) per ton.

History Note: Authority G.S. 106-673;
Eff. January 1, 1985;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. March 24, 2019.

02 NCAC 48B .0111 MICRO-NUTRIENT PENALTIES

For deficiencies beyond the investigational allowance, there shall be imposed a penalty of five dollars (\$5.00) per ton for each deficient element; however, the maximum penalty shall not exceed ten dollars (\$10.00) per ton for micro-nutrients.

History Note: Authority G.S. 106-673;
Eff. January 1, 1985;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. March 24, 2019.

02 NCAC 48B .0112 REPORT REQUIRED AND METHOD OF REPORTING

Each manufacturer or firm having fertilizer registered in North Carolina shall report to the Commissioner of Agriculture the tonnage of each grade of fertilizer shipped to each destination in the state. This information may be reported by either of the following methods:

- (1) by sending to the Commissioner a copy of the invoice or order minus price quotation, on each shipment of fertilizer in or into this state, within 30 days after shipment is made;
- (2) by submitting a monthly summary; such summary to be submitted by the 15th of the month following summary period.

History Note: Authority G.S. 106-673;
Eff. January 1, 1985;
Amended Eff. April 1, 1997;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. March 24, 2019.

02 NCAC 48B .0113 REGISTRATION OF FERTILIZER-PESTICIDE MIXTURES

(a) Fertilizer-pesticide mixtures may be registered for sale and use with the Plant Industry Division and Food and Drug Protection Division provided:

- (1) Both the pesticide and the fertilizer grades are approved for use and sale in North Carolina;
- (2) The mixture is approved by the Plant Industry Division; and
- (3) The directions for use are printed on the label.

(b) Fertilizers-pesticides may be mixed for direct application at the farmer's request without registering the mixture provided as follows:

- (1) The mixing of the pesticide with fertilizer is not prohibited by the pesticide label and the fertilizer contains a minimum of 20 percent primary plant nutrients, Nitrogen (N), Available Phosphate (P2O5), and Soluble Potash (K2O).
- (2) The product is delivered directly to the point of application and not stored.
- (3) The consumer shall be issued an invoice showing the analysis of the fertilizer and the trade name of the pesticide as well as the net content of each.

(c) Any fertilizer-pesticide mixture sold in bulk shall be covered with a tarpaulin or other covering to prevent spillage or dusting while in transport.

(d) Any fertilizer-pesticide mixture sold in bags shall be in multi-wall bags which will prevent dusting, spillage, or otherwise losing content of the bag.

(e) Nothing in this Rule shall prohibit the Board of Agriculture from refusing to register or approve any fertilizer-pesticide mixture or denying a farmer's request for a fertilizer-pesticide mixture for direct application.

History Note: Authority G.S. 106-673;
Eff. January 1, 1985;
Amended Eff. June 1, 1994;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. March 24, 2019.

02 NCAC 48B .0114 SPECIALTY FERTILIZER-PESTICIDE MIXTURES

Any specialty fertilizer containing a minimum of 20 percent plant food may be sold in a mixture with pesticides under the following conditions:

- (1) Each formulation shall be registered as provided in 02 NCAC 48B .0113;
- (2) Each formulation shall be of such pesticide and fertilizer combination as to be in agreement with sound practice and application in these respective fields;
- (3) The products shall be labeled and intended for use only as specialty fertilizer mixtures; i.e., for noncommercial crop use;
- (4) The formulations, claims and labeling are subject to approval by the Commissioner of Agriculture or his duly designated agent;
- (5) Products shall be offered for sale in a maximum bag size of 80 pounds, and sizes of the registrant's choice when the amount is less than 80 pounds.

History Note: Authority G.S. 106-673;
Eff. January 1, 1985;
Amended Eff. April 1, 1997; January 1, 1992;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. March 24, 2019.

02 NCAC 48B .0115 COMPLIANCE WITH LAWS

In addition to complying with the provisions of this Section, all mixtures of fertilizer-pesticides, landplaster-pesticides or fertilizer-landplaster-pesticides shall be registered respectively under the two or three laws (Chapter 106, Article 56, North Carolina Commercial Fertilizer Law; Chapter 106, Article 8A, Sale of Agricultural Liming Materials and Landplaster; and Chapter 143, Article 52, Pesticide Board) accordingly as the respective ingredients of the mixtures covered by 02 NCAC 48B .0108 and 02 NCAC 48B .0113 come under the purview of these laws, and shall comply with these laws and rules and regulations thereunder. Example: A mixture of boron (a fertilizer) and copper-sulfur (insecticides), and landplaster would require registration under each of these three laws.

History Note: Authority G.S. 106-673;
Eff. January 1, 1985;
Amended Eff. January 1, 1992; October 1, 1987;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. March 24, 2019.

02 NCAC 48B .0116 LABELING OF FERTILIZER-LANDPLASTER-PESTICIDE MIXTURES

The labeling required respectively by G.S. 106-661, 106-92.5, and 143-443, also applies in combinations accordingly as the components of the respective mixtures covered by this Chapter come under the purview of each of these laws. All of the labeling of these mixtures shall be affixed to bags, packages, or other containers in a permanent manner such as printing on the bags or pasting or gluing printed labels on the bags. All labeling of fertilizer-landplaster-pesticide mixtures shall be in such size print as to be readily legible under usual conditions of sale and use; shall show prominently the name of the crop or crops for which they are recommended and shall carry directions for use which are in conformity with directions for use which are required for the respective pesticides when these pesticides are used separately or with inert carriers (pesticides not mixed with fertilizers or landplaster).

History Note: Authority G.S. 106-673;
Eff. January 1, 1985;
Amended Eff. October 1, 1987;

Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. March 24, 2019.

02 NCAC 48B .0117 BAG REQUIREMENTS

For safety in handling, all pesticide-landplaster-fertilizer mixtures shall be sold in multi-wall paper bags or other containers which will prevent all dusting, sifting or other leakage.

*History Note: Authority G.S. 106-673;
Eff. January 1, 1985;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. March 24, 2019.*

02 NCAC 48B .0118 LABELS

Labels for all regulated products shall be supplied immediately upon request to ascertain their compliance with the law.

*History Note: Authority G.S. 106-673;
Eff. January 1, 1985;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. March 24, 2019.*

02 NCAC 48B .0119 DATA

Data to substantiate claims are requested when questions arise regarding the ability of a product to perform as claimed. Data shall be developed from tests conducted under conditions identical to or closely related to those present in North Carolina. If such data are not available, registration is refused.

*History Note: Authority G.S. 106-673;
Eff. January 1, 1985;
Amended Eff. April 1, 1997; June 1, 1994;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. March 24, 2019.*

02 NCAC 48B .0120 REFUSAL OF REGISTRATION

Registration is refused on fertilizer products when the Commissioner finds that the product will not supply needs of a plant when used according to directions.

*History Note: Authority G.S. 106-673;
Eff. January 1, 1985;
Amended Eff. April 1, 1997;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. March 24, 2019.*

02 NCAC 48B .0121 APPLICATION FOR REGISTRATION OF FERTILIZERS

(a) Each application for registration of any fertilizer shall include the:

- (1) net weight;
- (2) brand;
- (3) grade;
- (4) name and address of the person guaranteeing registration; and
- (5) sources from which nitrogen, phosphate, and potash are derived in mixed fertilizers.

(b) Each application for registration of any fertilizer in addition to the information contained in Paragraph (a) of this Rule, shall include a guaranteed analysis showing the percentages of primary plant nutrients and chlorine in the following order and form:

- (1) tobacco fertilizers:
 - (A) total nitrogen (N) X Percent;

[breakdown of nitrogen (N) is optional]

 - (B) available phosphate (P2O5) X Percent;

- (C) soluble potash (K₂O) X Percent;
- (D) chlorine (maximum) X Percent;
- (2) fertilizer materials:
 - (A) total nitrogen (N) X Percent;
 - (B) available phosphate (P₂O₅) X Percent;
 - (C) soluble potash (K₂O) X Percent;
- (3) specialty fertilizers, manures and fortified mulch:
 - (A) total nitrogen (N) X Percent;
 - (B) available phosphate (P₂O₅) X Percent;
 - (C) soluble potash (K₂O) X Percent;
- (4) organic fertilizers:
 - (A) total nitrogen (N) (see 02 NCAC 48B .0122) X Percent;
 - (B) available phosphate (P₂O₅) X Percent;
 - (C) soluble potash (K₂O) X Percent.

(c) Immediately following the guarantees for primary plant nutrients, the following plant nutrients, if used, shall be listed on the application and guaranteed by percentage of each in elemental form, with the following minimum guarantees:

Element	Minimum Concentration, %
(1) calcium (Ca)	1.0000
(2) magnesium (Mg) (see 02 NCAC 48B .0132)	0.5000
(3) sulfur (S)	1.0000
(4) boron (B)	0.0200
(5) chlorine (Cl)	0.1000
(6) cobalt (Co)	0.0005
(7) copper (Cu)	0.0500
(8) iron (Fe)	0.1000
(9) manganese (Mn) (see 02 NCAC 48B .0132)	0.0500
(10) molybdenum (Mo)	0.0005
(11) nickel (Ni)	0.0010
(12) sodium (Na)	0.1000
(13) zinc (Zn)	0.0500

Sources of these elements and proof of availability shall be provided to the Commissioner upon request.

(d) A person shall not make any guarantee or claim for a secondary or minor plant nutrient not listed in Paragraph (c) of this Rule. "Secondary plant nutrient" means calcium, magnesium, and sulfur. "Minor plant nutrient" means the other elements listed in Paragraph (c) of this Rule, commonly known as "micronutrients".

(e) A person shall express potential acidity or basicity as equivalent pounds per ton of calcium carbonate, if acid forming or nonacid forming potential is guaranteed.

(f) Where no determination of available phosphate for organic phosphates is made, total phosphate shall be guaranteed, except as provided in Paragraph (g) of this Rule.

(g) Where unacidulated mineral phosphates or basic slag is used, both total and available phosphate, as well as degree of fineness, shall be guaranteed.

History Note: Authority G.S. 106-660(a); 106-673;

Eff. January 1, 1985;

Amended Eff. January 1, 2007; June 1, 1994; January 1, 1992; December 1, 1985;

Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. March 24, 2019.

02 NCAC 48B .0122 ORGANIC FERTILIZERS

(a) A person who distributes a natural organic fertilizer which is not a mixed fertilizer shall identify the fertilizer material by its commonly accepted name (e.g., sewage sludge, tankage, etc.) in the registration, labeling and sale of such fertilizer, and shall not use any other name to identify the fertilizer material.

(b) For an organic fertilizer, at least 15 percent of the total nitrogen must be water insoluble nitrogen.

(c) If an amount of nitrogen is specifically designated as organic, then at least 60 percent of the nitrogen must be water insoluble or slow-release. Coated urea may not be included to meet the 60 percent requirement.

History Note: Authority G.S. 106-660(a); 106-673;
Eff. January 1, 1985;
Amended Eff. January 1, 1992;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. March 24, 2019.

02 NCAC 48B .0123 LICENSE FOR GRADES NOT REQUIRING REGISTRATION

Any person desiring to manufacture or distribute fertilizers not required to be registered shall first secure a license from the Commissioner in the amount of one hundred dollars (\$100.00).

History Note: Authority G.S. 106-660(d);
Eff. January 1, 1985;
Temporary Amendment Eff. July 7, 1989 for a Period of 180 Days to Expire on January 2, 1990;
Amended Eff. January 2, 1990;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. March 24, 2019.

02 NCAC 48B .0124 SMALL PACKAGE GRADE NUMERALS

(a) Grade numerals on packages of less than 25 lbs. may appear in numerals of not less than one-quarter inch in height, except as provided in (b) of this Rule.

(b) Where the largest letters in the brand name on a package of less than 25 lbs. are less than one half inch in height, the grade numerals shall be printed in numerals at least one half as large as the letter of the brand name.

History Note: Authority G.S. 106-673;
Eff. January 1, 1985;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. March 24, 2019.

02 NCAC 48B .0125 NATURAL ORGANIC FERTILIZERS

To label or claim a product as natural organic fertilizer, it must conform to the definition found at G.S. 106-657(14). In addition to the physical manipulations permitted under that definition, such products may also be physically manipulated by ashing or hydrolysis.

History Note: Authority G.S. 106-660(a); 106-673;
Eff. January 1, 1992;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. March 24, 2019.

02 NCAC 48B .0126 NATURAL INORGANIC FERTILIZERS

To claim or label a product as natural inorganic fertilizer, it must be a mineral nutrient source that exists in or is produced by nature and may be altered from its original state only by physical manipulation.

History Note: Authority G.S. 106-660(a); 106-673;
Eff. January 1, 1992;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. March 24, 2019.

02 NCAC 48B .0127 NATURAL FERTILIZERS

To label or claim a product to be natural fertilizer, it must be a substance composed only of natural organic and/or natural inorganic fertilizer materials and natural filler.

History Note: Authority G.S. 106-660(a); 106-673;
Eff. January 1, 1992;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. March 24, 2019.

02 NCAC 48B .0128 NATURAL BASED FERTILIZERS

To label or claim a product to be natural based, it must contain at least 50 percent by weight of natural materials and contain at least 50 percent of all primary nutrients derived from natural materials.

*History Note: Authority G.S. 106-660(a); 106-673;
Eff. January 1, 1992;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. March 24, 2019.*

02 NCAC 48B .0129 ORGANIC BASED FERTILIZERS

To label or claim a product to be organic based, it must contain at least 50 percent by weight of organic materials and contain at least 50 percent of all primary nutrients derived from organic materials.

*History Note: Authority G.S. 106-660(a); 106-673;
Eff. January 1, 1992;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. March 24, 2019.*

02 NCAC 48B .0130 USE OF "PERCENTAGE"

The term "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.

*History Note: Authority G.S. 106-660(a); 106-673;
Eff. January 1, 1992;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. March 24, 2019.*

02 NCAC 48B .0131 MANIPULATED MANURES

(a) Manipulated manures may contain whatever organic bedding or other materials needed to follow good dairy barn, feedlot, poultry house, etc., practice in order to maintain proper sanitary conditions, to conserve plant food elements in the excreta, and to absorb the liquid portion without the addition of other material.

(b) If other ingredients are added, they shall be specified on the principal label of the container. If the added ingredient exceeds the amount of manure, it shall be the first ingredient listed on the principal label and the words "manure," "cow manure," "sheep manure," etc., shall be in type smaller than that used for such added ingredient. When the packaging of a product features the picture or name of an animal, manure of that species of animal shall comprise more than 50 percent by weight of the material in the container. Manures containing more than 30 percent by weight acid insoluble ash (sand) shall be labeled "sheep manure and sand," or "dried sheep manure, sand and other inert materials," etc. Manures containing more than 50 percent by weight acid insoluble ash shall be labeled "sand and sheep manure," or "sand, other inert matter, and sheep manure," etc.

*History Note: Authority G.S. 106-660(a); 106-673;
Eff. January 1, 1992;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. March 24, 2019.*

02 NCAC 48B .0132 MAGNESIUM/MANGANESE GUARANTEES

Each application for registration of any fertilizer for which magnesium or manganese is guaranteed shall include a guaranteed analysis in the following form:

- (1) total magnesium
- water soluble magnesium X Percent; or
- (2) total manganese X Percent
- water soluble manganese X Percent.

*History Note: Authority G.S. 106-660(a); 106-673;
Eff. January 1, 1992;*

Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. March 24, 2019.