

AGRICULTURE AND LAND STEWARDSHIP DEPARTMENT[21]

Regulatory Analysis

Notice of Intended Action to be published: 21—Chapter 43
“Fertilizers and Agriculture Lime”

Iowa Code section(s) or chapter(s) authorizing rulemaking: 200.14

State or federal law(s) implemented by the rulemaking: Iowa Code chapter 200

Public Hearing

A public hearing at which persons may present their views orally or in writing will be held as follows:

July 29, 2026

11:30 a.m. to 12 noon

Heritage West Conference Room (H516)

Hoover State Office Building

Des Moines, Iowa

Public Comment

Any interested person may submit written comments concerning this Regulatory Analysis, which must be received by the Department of Agriculture and Land Stewardship no later than 4:30 p.m. on the date of the public hearing. Comments should be directed to:

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Des Moines, Iowa 50319

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Purpose and Summary

The purpose of this proposed rulemaking is to update and clarify language in Chapter 43 that is vague and open to different interpretations. This rulemaking clarifies the meaning of public assembly and specifies a procedure to extend the use of anhydrous ammonia storage tanks.

Analysis of Impact

1. Persons affected by the proposed rulemaking:

• Classes of persons that will bear the costs of the proposed rulemaking:

Agricultural industry that markets and stores anhydrous ammonia will bear the costs.

• Classes of persons that will benefit from the proposed rulemaking:

Agricultural industry that markets and stores anhydrous ammonia will have a definitive definition on placement of storage facilities. They will also benefit financially from having a route to extend the useful life of current storage anhydrous ammonia storage vessels. The general public will benefit from storage tanks being tested to prove they are safe for storage.

2. Impact of the proposed rulemaking, economic or otherwise, including the nature and amount of all the different kinds of costs that would be incurred:

• Quantitative description of impact:

The proposed rulemaking has the potential to extend the working life of over 100 anhydrous ammonia storage tanks that would otherwise have to be removed from service by 2030, saving

significant dollars while also verifying the safety of the tanks. Extending the use of the tanks saves significant capital versus tank replacement.

- **Qualitative description of impact:**

The proposed rulemaking changes the safety evaluation of a tank from following an arbitrary calendar date to be based on standardized, engineered-based testing.

3. **Costs to the State:**

- **Implementation and enforcement costs borne by the agency or any other agency:**

The cost to the State will be minimal. Application and inspection forms will need to be developed. No additional staffing will be required.

- **Anticipated effect on State revenues:**

There is no anticipated effect on State revenues.

4. **Comparison of the costs and benefits of the proposed rulemaking to the costs and benefits of inaction:**

The rulemaking offers the agricultural industry a significantly lower cost option to extending storage vessel life span versus having to do a costly replacement based on a calendar date. Clarifying the definition of “public assembly” will avoid delays in the application process.

5. **Determination whether less costly methods or less intrusive methods exist for achieving the purpose of the proposed rulemaking:**

The rulemaking offers the industry a less costly and less intrusive option for anhydrous ammonia storage vessels.

6. **Alternative methods considered by the agency:**

- **Description of any alternative methods that were seriously considered by the agency:**

Doing nothing and allowing current regulations to force storage vessels out of service based on a calendar date were considered.

- **Reasons why alternative methods were rejected in favor of the proposed rulemaking:**

The proposed rulemaking offers financial savings and made the decision on tank safety by standardized testing versus a calendar date.

Small Business Impact

If the rulemaking will have a substantial impact on small business, include a discussion of whether it would be feasible and practicable to do any of the following to reduce the impact of the rulemaking on small business:

- Establish less stringent compliance or reporting requirements in the rulemaking for small business.

- Establish less stringent schedules or deadlines in the rulemaking for compliance or reporting requirements for small business.

- Consolidate or simplify the rulemaking’s compliance or reporting requirements for small business.

- Establish performance standards to replace design or operational standards in the rulemaking for small business.

- Exempt small business from any or all requirements of the rulemaking.

If legal and feasible, how does the rulemaking use a method discussed above to reduce the substantial impact on small business?

The proposed rulemaking offers a lower cost option versus replacing specific series of anhydrous ammonia storage vessels that current rules require to be replaced in 2030. The rulemaking offers cost savings with no requirement of mandatory spending.

Text of Proposed Rulemaking

ITEM 1. Rescind 21—Chapter 43 and adopt the following new chapter in lieu thereof:

CHAPTER 43 FERTILIZERS AND AGRICULTURAL LIME

21—43.1(200) Additional plant food elements besides N, P and K. Additional plant nutrients, besides nitrogen, phosphorus and potassium, 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 shall be shown on the application for registration. The minimum percentages which will be accepted for registration except for those fertilizers designed to be applied and ordinarily applied directly to growing plant foliage to stimulate further growth are as follows:

<i>Element</i>	<i>Percent</i>
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
Sodium (Na).	0.10
Zinc (Zn).	0.05

Guarantees or claims for the above-listed additional plant nutrients are the only ones which will be accepted. Proposed labels and directions for 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, nitrogen, phosphorus and potassium. Warning statements are required on the label for any product which contains 0.03 percent or more of boron in a water-soluble form or 0.001 percent or more of molybdenum.

21—43.2(200) Warning required. When any product which contains 0.03 percent or more of boron in a water-soluble form or 0.001 percent or more of molybdenum is incorporated in a commercial fertilizer a special warning tag or statement must be furnished to the purchaser. This tag or statement shall carry the word “WARNING” prominently placed on the front of the package or label in size no less than the nutrient guarantee statement; it shall state the crops for which the fertilizer is to be used and it shall state that use of the fertilizer on any other than those recommended may result in serious injury to the crops. The tag or statement is to be attached to or printed on the bag or other container in which the fertilizer is sold; for bulk fertilizers the statement must be placed on the invoice or other document which shall accompany delivery and be supplied to the purchaser at the time of delivery as provided in Iowa Code section 200.6(2).

21—43.3(200) Specialty fertilizer labels. Specialty fertilizer products shall be labeled to show 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.

Net Weight
Brand Name
Grade
Guaranteed Analysis:
Total Nitrogen (N) _____ %

_____ % Ammoniacal Nitrogen**
 _____ % Nitrate Nitrogen**
 _____ % Water Insoluble Nitrogen*
 Available Phosphorus (P) or P_2O_5 or both _____ %
 Soluble Potassium (K) or K_2O or both _____ %
 Additional Plant Nutrients, if claimed, and in the order and not less than the
 minimum percentage as shown in 21—43.1(200).
 **Potential Acidity or Basicity _____ % or _____ lbs.
 Calcium Carbonate Equivalent per ton.
 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.

21—43.4(200) Pesticides in fertilizers. When an insecticide, herbicide or any other additive for pest control is added to fertilizer the product must be registered and guaranteed with respect to the kind and percentage of each of these additives as well as with respect to plant food elements. In a prominent manner the label on the package shall state the crops for which the fertilizer is to be used and shall state that the use of the fertilizer on any other crops or under conditions other than those recommended may result in serious injury to crops.

21—43.5(200) Cancellation or suspension of registration or license. If official sampling and analysis of any registered commercial fertilizer or beneficial substance indicates that the product does not meet the guarantees or claims made for it, or that the products do not meet the minimum plant nutrient values established by rule 21—43.1(200), the secretary may notify the person guaranteeing the product that the quality of the fertilizer or beneficial substances must be improved prior to any further sale, distribution or offer for sale of such products in Iowa and the secretary may request that monetary reimbursement be made to purchaser to rectify the deficiency of the product reported by laboratory analysis and the monetary reimbursement be reported to the department. Reimbursement must be made within 30 days of the reported deficiency. In addition, if it appears to the secretary that the composition of the article does not warrant the claims made for it, or if the article, its labeling or other material required by Iowa Code section 200.5(6) to be submitted to the secretary, do not comply with the requirements of the Iowa fertilizer law, the secretary may revoke, suspend or refuse to register any commercial fertilizer or beneficial substance; or refuse to issue or revoke or suspend any license issued under Iowa Code chapter 200.

21—43.6(200) Design plans with specifications for installing a new or modifying existing anhydrous ammonia facilities. Application with design plans and specifications for facilities under these rules shall be submitted to the department prior to construction. A signed letter acknowledging the acceptance of the plans by the department must be received by the applicant prior to construction. Upon completion of construction, a certification by the owner or owner’s agent shall be made to the department that the facilities were constructed in accordance with rule 21—43.7(200). If investigation by the department, subsequent to the completion of construction, determines the constructed facilities were not constructed or the tank tested in accordance with the submitted plans and specifications or the requirements of these rules, the owner shall correct any deficiencies in a timely manner as set forth by the department. All forms shall be supplied by the department.

21—43.7(200) Standard for the storage and handling of anhydrous ammonia. The Compressed Gas Association’s (CGA’s) American National Standard Safety Requirements for the Storage and Handling of Anhydrous Ammonia (6th edition), commonly referred to as ANSI/CGA G-2.1 2014,

is adopted by this reference as the official requirement for the storage and handling of anhydrous ammonia, with the following exceptions:

1. Strike subrule 3.1 in its entirety and insert in lieu thereof the following:

3.1 Any person required to handle, transfer, transport, or otherwise work with ammonia shall be trained once each calendar year prior to handling to understand the properties of ammonia, to become competent in safe operating practices, and to take appropriate actions in the event of a leak or an emergency.

2. Insert a new subrule 5.1.3 to read as follows:

5.1.3 Equipment and components must be installed, operated, and maintained in accordance with the manufacturer's recommendations or best engineering practices.

3. Strike subrule 5.3.4 in its entirety and insert in lieu thereof the following:

5.3.4 In the absence of a specific determination by local jurisdictions, separation distances for new, additional or relocated ammonia stationary storage containers and placements of containers covered by Sections 9, 10, 11 and 12 after January 1, 2002, shall be in accordance with Table 5:

Minimum Separation^{1,2} Distances for Location of Ammonia Storage Containers

Nominal Capacity of Container ³ (Gallons or Cubic Meters)	Minimum Distances (in feet or meters) from Each Container to:			
	Mainline of Railroad ⁴	Highway ⁵ or Line of Adjoining Property	Place of Public Assembly ⁶ or Residential Occupancy ⁷	Institutional Occupancy ⁸
Over 500 to 2,000 gals ⁹	100 ft	25 ft	150 ft	250 ft
Over 2,000 to 30,000 gals	100 ft	50 ft	300 ft	500 ft
Over 30,000 to 100,000 gals	100 ft	50 ft	450 ft	750 ft
Over 100,000 gals	100 ft	50 ft	600 ft	1000 ft
Over 2 to 8 m ³	30 m	8 m	45 m	75 m
Over 8 to 110 m ³	30 m	15 m	90 m	150 m
Over 110 to 400 m ³	30 m	15 m	140 m	230 m
Over 400 m ³	30 m	15 m	180 m	300 m

1) Separation distances referred to are approximate and based on experience with minor releases.

2) For additional distances, see ANSI/ASHRAE 5.3.2, 5.3.3, 5.3.4, 5.3.5, 5.3.6 and 6.4.6.

3) The nominal capacity of multiple containers shall be aggregated, but only if containers are interconnected and safeguards do not exist to prevent a leak from one container from emptying interconnected containers.

4) Class II track or better. See 49 CFR 213.9 [8].

5) A highway is defined as a public way for purposes of vehicular travel, including the entire area within the right of way. See American Association of State Highway and Transportation Officials (AASHTO) Transportation Glossary (1983) [37].

6) Place of public assembly occupancy is a premises or that portion of a premises where 20 or more people may congregate at least six times a year and from which occupants cannot quickly vacate. Public assembly occupancies include, among others, auditoriums, ballrooms, classrooms, passenger depots, restaurants, churches, businesses open to the general public, cemeteries, parks and theatres and the portion of surrounding land that is maintained for occupancy usage. Public assembly occupancies do not include bike and walking trails. See ANSI/ASHRAE 15 [1].

7) Residential occupancy is a premise or that portion of a premise that provides the occupants with complete independent living facilities including permanent provisions for living, sleeping, eating, cooking, and sanitation. Residential occupancies include, among others, dormitories, hotels, multiunit apartments, and private residences and the portion of surrounding land that is maintained for occupancy usage. See ANSI/ASHRAE 15 [1].

8) Institutional occupancy is a premise or that portion of a premise from which, because they are disabled, debilitated, or confined, occupants cannot readily leave without the assistance of others. Institutional occupancies include, among others, hospitals, nursing homes, asylums, and spaces containing locked cells and the portion of surrounding land that is maintained for occupancy usage. See ANSI/ASHRAE 15 [1].

9) For 500 gallons (2m³) or less, see ANSI/ASHRAE 5.3.1 and 5.3.3.

4. Strike subrule 5.3.6 in its entirety and insert in lieu thereof the following:

5.3.6 Areas within 10 feet (3 meters) of a storage container shall be maintained clear of dry grass and weeds and other combustible materials. Areas shall be kept clear of debris or any item that would

interfere with emergency actions or evacuation as well as materials or objects not necessary for the operation of the storage system and components.

5. Insert new subrules 5.4.3.2.1 through 5.4.3.2.5 to read as follows:

5.4.3.2.1 Eligible tanks. The following anhydrous ammonia storage tanks are eligible for dataplate replacement through testing:

5.4.3.2.1.1 Nonrefrigerated anhydrous ammonia storage tanks (other than DOT containers) not conforming to 5.4.1 and whose dataplate cannot be replaced pursuant to 5.4.3.1.

5.4.3.2.1.2 An anhydrous ammonia storage tank will have been in anhydrous ammonia service in Iowa by the applicant as of January 1, 2026, and will have been in continuous service by the applicant through the date of application.

5.4.3.2.1.3 Tanks with unauthorized welds, repairs, or modifications are not eligible.

5.4.3.2.2 Application and Testing.

5.4.3.2.2.1 Prior to an anhydrous ammonia storage tank being tested pursuant to 5.4.3.2, an application for dataplate replacement must be submitted to the department on forms approved by the department.

5.4.3.2.2.2 The department will notify the applicant if the dataplate application is initially approved for testing or denied.

5.4.3.2.2.3 Tanks that have been initially approved for a dataplate must be tested within six months of the application being approved for testing.

5.4.3.2.2.4 Tanks must be inspected and tested to API 510 standards by a certified API 510 pressure vessel inspector. The inspector must create a testing data report as a result of the testing. The testing data report will include the date the tank was tested, the inspector conducting the testing, the location of the tank, whether the tanks is passed for service, and the period of time which the tank can be in service. The testing data report will be signed by the inspector.

5.4.3.2.3 Testing Data Report Results. The applicant must forward to the department the testing data report conducted pursuant to 5.4.3.2.2.4. The testing data report will be maintained by the applicant for the lifetime of the tank.

5.4.3.2.3.1 Tanks that are not passed for service pursuant to 5.4.3.2.2.4 above will be removed from service immediately by the owner.

5.4.3.2.3.2 Tanks that are passed for service pursuant to 5.4.3.2.2.4 above will be issued a dataplate number by the department. The dataplate will be effective for the period of time identified by the data testing report in 5.4.3.2.2.4 above, up to a maximum of ten years.

5.4.3.2.3.3 A tank that had previously been issued a dataplate pursuant to 5.4.3.2 must reapply and retest for a new dataplate prior to the dataplate expiring. The tank will be retested and approved by the department prior to the expiration of the previous dataplate in compliance with 5.4.3.2. All tanks with an expired dataplate will be immediately removed from service by the owner.

5.4.3.2.4. Dataplates. Dataplates replaced pursuant to 5.4.3.2 will be made of a noncorroding metal and will include the following information in a legible size:

5.4.3.2.4.1 "IOWA DEPARTMENT OF AGRICULTURE REPLACEMENT DATA PLATE", with the replacement plate number, across the top portion of the plate in letters no less than 3/16 inch.

5.4.3.2.4.2 The phrase "Above Ground Anhydrous Ammonia Storage Only."

5.4.3.2.4.3 Expiration date of dataplate as provided in 5.4.3.2.3.2.

5.4.3.2.4.4 Maximum Working Pressure 250 psi @ 125 degrees Fahrenheit.

5.4.3.2.4.5 Gallon Capacity.

5.4.3.2.4.6 Surface Area (in sq. ft.).

5.4.3.2.4.7 Length (in ft.).

5.4.3.2.4.8 Shell Thickness (in inches).

5.4.3.2.4.9 Surface Area (in sq. ft.).

5.4.3.2.4.10 Outside Diameter (in ft.).

5.4.3.2.4.11 Head Thickness (in inches).

5.4.3.2.4.12 The phrase, "This tank has met or exceeded the standards and specification established by American Petroleum Institute 510."

5.4.3.2.4.13 The test performed by the qualified 510 personnel.

5.4.3.2.4.14 Any other information required to be included as identified by the ABI test 510 inspector.

5.4.3.2.5 Dataplate Installation. The dataplate will be permanently attached to the tank in a location that is readily accessible for inspection. The installation of the dataplate must be witnessed by the department. The department will inspect the tank and dataplate for compliance with 5.4.3.2 and will issue its final approval or denial of the dataplate.

6. Strike subrule 5.6.6 in its entirety and insert in lieu thereof the following:

5.6.6 Adequate provisions shall be made to protect the storage system and components, including all exposed piping, from physical damage which could result from impact by moving machinery, automobiles or trucks, or any other equipment at the facility. See also 6.7.1.

7. Insert a new subrule 5.10.8.2 to read as follows:

5.10.8.2 For transfer of liquids from a container utilizing a remote transfer point, each liquid filling connection shall have a positive shut-off valve in conjunction with either an internal back-pressure check valve or an internal excess flow valve. Vapor connections shall have a positive shut-off valve between the supply source and the intake side of the pump. The liquid line supplying this transfer from the pump shall have an emergency shut-off valve between the supply source and the intake side of the pump. The emergency shut-off valve shall remain closed when the plant is not in use.

NOTE: The internal back-pressure check valves or internal excess flow valves shall be installed in the facility piping prior to the positive shut-off valves. These valves shall be installed so that any break will occur on the side of the transfer hose. Protection from pull away while connected is the same as described in 5.10.8.1.

8. Add the following subrule 5.10.10:

5.10.10 Anhydrous ammonia shall be vented into an adequate supply of water. For this purpose, an adequate supply of water means ten gallons of water for each gallon of liquid ammonia or fraction thereof which is contained in the hose or vessel to be vented. The ammonia should be injected into the water as near the bottom of a vented water containing vessel as practical. If a hose is used to inject ammonia into water, the hose should be weighted or secured so that the end of the hose will remain near the bottom of the vessel. An approved sparging device is recommended. Any aqueous ammonia solution resulting from the venting process shall be disposed of safely and properly.

NOTE: Ammonia vapor may be flared off when appropriate equipment is used to not allow ammonia vapor to escape unchecked into the atmosphere. This section does not apply to venting of a coupling between transfer hose and nurse tank or applicator or venting of vapor through 85 percent bleeder valve when loading a nurse tank or applicator.

9. Add the following subrule 5.10.10.1:

5.10.10.1 Anhydrous ammonia shall not be vented into the air. Each transport truck unloading point at an anhydrous ammonia storage facility shall have a valve for venting purposes installed in the piping at or near the point where the piping and hose from the transport truck are connected. Anhydrous ammonia from any transport truck hose shall be vented into an adequate supply of water. For this purpose, an adequate supply of water means ten gallons of water for each gallon of liquid ammonia or fraction thereof which could be contained in the hose. The ammonia should be injected into the water as near the bottom of a vented water containing vessel as practical. If a hose is used to inject ammonia into water, the hose should be weighted or secured so that the end of the hose will remain near the bottom of the vessel. An approved sparging device is recommended. Any aqueous solution resulting from the venting process shall be disposed of safely and properly.

10. Add the following subrule 5.10.11:

5.10.11 All anhydrous ammonia storage locations shall have a permanent working platform installed at each nurse tank or applicator loading location. The working platform shall be designed to allow for connecting and disconnecting of transfer hoses without standing on equipment being loaded.

NOTE: This section does not apply to nurse tanks or applicators with a working surface designed for loading purposes.

11. Add the following subrule 6.3.1.1:

6.3.1.1 Containers designed with internal pressure relief systems are exempt from this requirement.

12. Strike subrule 9.7.3 in its entirety and insert in lieu thereof the following:

9.7.3 A cargo tank of 3,500 gallons or less water capacity may be unloaded into permanent storage locations meeting the requirements of 3.4.1 and 5.10.8 through 5.10.8.2 or into implements of husbandry meeting the requirements of Section 11. A cargo tank of greater than 3,500 gallons water capacity but not greater than 5,000 gallons water capacity may be unloaded at permanent storage locations meeting the requirements of 3.4 and 5.10.8 through 5.10.8.2 or into a portable application equipment container which is capable of holding the entire load. A cargo tank of greater than 5,000 gallons water capacity may only be unloaded into a permanent storage location meeting the requirements of 3.4 and 5.10.8 through 5.10.8.2 and capable of holding the entire load.

13. Strike subrule 11.3.5 in its entirety and insert in lieu thereof the following:

11.3.5 All vapor and liquid connections, except pressure relief valves and those specifically exempt in 5.5.5 and 5.5.6, shall be equipped with approved excess flow valves or may be fitted with quick-closing internal valves, which shall remain closed except during operating periods.

1. All vapor and liquid connections shall be closed except during operation periods.

2. Shared piping where multiple containers are plumbed together shall be equipped with additional excess flow valves or back-pressure check valves or both to meet the requirements of 5.10.8.

3. Mechanical remote shut-off valves may be added or substituted for excess flow valves in the piping after the vapor and liquid connections as a means of controlling the flow.

13. Strike subrule 11.6.1 in its entirety and insert in lieu thereof the following:

11.6.1 Each person operating, repairing appurtenances of, or inspecting a nurse tank shall comply with the following requirements:

1. Any person required to handle, transfer, transport, or otherwise work with ammonia shall be trained once each calendar year prior to handling to understand the properties of ammonia, to become competent in safe operating practices, and to take appropriate actions in the event of a leak or an emergency; and

2. Any person making, breaking or testing any ammonia connection, transferring ammonia or performing maintenance or repair on an ammonia system under pressure shall wear chemical splash goggles and protective gloves impervious to ammonia. A full face shield may be worn over the goggles. However, a face shield shall not be worn as a substitute for a primary eye protection device (goggles).

14. Strike subrule 11.6.2 in its entirety and insert in lieu thereof the following:

11.6.2 Each nurse tank shall be equipped with the following safety equipment and features:

1. Each container shall have for first-aid purposes at least 5 gallons (20 liters) of clean water in a container designed to provide ready access to the water for flushing any area of the body contacted by ammonia; and

2. A legible decal listing first-aid procedures to follow for injuries caused by ammonia.

15. Strike subrule 12.3.3 in its entirety and insert in lieu thereof the following:

12.3.3 An excess flow valve is not required in the vapor connections, provided that the controlling orifice is not in excess of 0.4375 inches (11.1 mm) in diameter and the valve is a hand-operated (attached hand wheel or equivalent) shut-off valve. Bleed off of vapors may be done into water meeting requirements of 5.10.10 if vapor connections cannot be made to the supplying vessel when

filling applicator tanks. Vapors may be vented into the ground in the field of application under proper field conditions.

16. Strike subrule 12.4.1 in its entirety and insert in lieu thereof the following:

12.4.1 Each person operating, repairing appurtenances of, or inspecting an applicator tank shall comply with the following requirements:

1. Any person required to handle, transfer, transport, or otherwise work with ammonia shall be trained once each calendar year prior to handling to understand the properties of ammonia, to become competent in safe operating practices, and to take appropriate actions in the event of a leak or an emergency; and

2. Any person making, breaking or testing any ammonia connection, transferring ammonia or performing maintenance or repair on an ammonia system under pressure shall wear chemical splash goggles and protective gloves impervious to ammonia. A full face shield may be worn over the goggles. However, a face shield shall not be worn as a substitute for a primary eye protection device (goggles).

21—43.8(200) Groundwater protection fee.

43.8(1) There shall be paid by the licensee, as licensed under Iowa Code section 200.4, to the secretary for all commercial fertilizers and beneficial substances sold or distributed in this state, a groundwater protection fee of 75 cents per ton based on an 82 percent nitrogen solution. Other product formulations containing nitrogen shall pay a fee based on the percentage of actual nitrogen contained in the formulation with 82 percent nitrogen solution serving as the base. Product formulations containing less than 2 percent nitrogen shall be exempt from the payment of a groundwater protection fee. Payment of the groundwater protection fee by any licensee exempts all other persons, firms or corporations from the payment.

43.8(2) Every licensee and any person required to pay a groundwater protection fee under this chapter shall file not later than the last day of January and July of each year, on forms furnished by the secretary, a semiannual statement setting forth the number of net tons of commercial fertilizer or beneficial substances containing nitrogen that were distributed in this state during the preceding six-month period; and upon filing the statement shall pay the groundwater protection fee at the rate stated in subrule 43.8(1), except that manufacturers of individual packages of fertilizer containing 25 pounds or less shall file not later than the last day of July of each year, on forms furnished by the secretary, an annual statement setting forth the number of net tons of fertilizer containing nitrogen distributed in this state in packages of 25 pounds or less during the preceding 12-month period; and upon filing the statement shall pay the groundwater protection fee at the rate stated in subrule 43.8(1).

43.8(3) All licensees who distributed specialty fertilizer, as defined in Iowa Code section 200.3(5), or apply specialty fertilizer for compensation, shall file not later than the last day of July of each year, on forms furnished by the secretary, an annual statement setting forth the number of tons of fertilizer containing nitrogen distributed in this state and listing the manufacturer from which the product was purchased but no groundwater protection fee shall be due.

21—43.9(200) Minimum requirements for registration of fertilizer and beneficial substances.

43.9(1) Fertilizer and beneficial substances submitted for registration may be required to be tested for a minimum of two growing seasons in at least three Iowa crop reporting districts in accordance with standards for efficacy testing. The results of testing shall be reviewed by the secretary or person authorized by the secretary. The testing requirement may be waived if research has been conducted with crops and under conditions relevant to the state of Iowa. The Secretary or person authorized by the secretary may require the applicant for registration to submit an economic or environmental impact statement.

43.9(2) Applications for registration shall include methods of laboratory analysis of products used for achieving results consistent with the label guarantee.

43.9(3) Fertilizer or beneficial substances submitted for registration may be required to provide documented evidence of the safety of any ingredient in regards to human and animal health and the environment. The proof must be from a source other than the applicant unless scientifically reviewed.

21—43.10(200) Provisional product registration. A provisional product registration may be granted during the time required to complete efficacy testing to achieve product registration. Prior to the growing seasons or granting of a provisional product registration, the registrant must submit a plan for efficacy testing to the department for approval by the first day of February. A fee of \$100 shall be collected for each provisional product registration. Annual reviews of provisional product registrations shall determine if satisfactory progress is being made toward achieving product registration. A provisional product registration may be canceled if it appears that conditions under which provisional product registration was granted have not been completed.

The registrant does not have the right to sell, distribute or promote any fertilizer or beneficial substances within the state of Iowa under a provisional product registration.

21—43.11(200) Review of product registrations. Fertilizer and beneficial substance registrations may be reviewed to determine that the product meets claims, guarantees and labeling for which registration was granted. If credible cause can be demonstrated that product claims have not been substantiated, registration may be canceled. A new registration may be submitted once the minimum requirements for registrations of the canceled fertilizers or beneficial substances has been satisfied.

21—43.12(200) Product claims.

43.12(1) Product claims may be substantiated by one of two methods:

- a. Efficacy testing; or
- b. Substantiation of data relevant to Iowa crops and soils. Efficacy testing and substantiation shall be completed when requested by the department to support claims made for fertilizer and beneficial substances that is sold, distributed or offered for sale in Iowa.

43.12(2) Documentation substantiating product claims by efficacy testing shall contain the following information:

- a. All guaranteed ingredients must be identified and indicated by percentage.
- b. State the crop or soil response being measured.
- c. The research facility and investigators conducting the trials.
- d. Dates and locations of trials.
- e. The trials must be conducted, utilizing the principles of experimental design and methods consistent with those in agricultural research. This involves raw data from proper treatment selection, replication and randomization in such a manner that statistical analysis of data is possible.
- f. Exclude consumer testimonials.

21—43.13(201A) Definitions. When used in this chapter:

“Agricultural liming material” means a product containing calcium and magnesium compounds capable of neutralizing soil acidity.

“Brand” means the term, designation, trade name, product name, or other specific designation under which individual agricultural liming material is offered for sale.

“Bulk” means in nonpackaged form.

“Calcium carbonate equivalent” means the acid-neutralizing capacity of an agricultural liming material expressed as percentage of pure calcium carbonate.

“Effective calcium carbonate equivalent” or *“ECCE”* means the acid-neutralizing capacity of an agricultural liming material or specialty limestone.

“Fineness” means the percentage by weight of the material which will pass U.S. standard sieves of specified sizes.

“Industrial by-product” means agricultural liming material containing calcium or a combination of calcium with magnesium and capable of neutralizing soil acidity which is derived from any industrial waste or by-product.

“Label” means any written or printed material on or attached to the package or on the delivery ticket which accompanies bulk shipments.

“Limestone” means a material consisting essentially of calcium carbonate or a combination of calcium carbonate with magnesium carbonate capable of neutralizing soil acidity.

“Pelletized lime” means agricultural liming material containing calcium or a combination of calcium with magnesium and capable of neutralizing soil acidity which has been processed into pellet or granular form, with or without binding agents.

“Percent” or *“percentage”* means by weight.

“Permanent production facilities” means stationary crushing and screening equipment which is immobile.

“Person” means individual, partnership, association, firm or corporation.

“Portable plant” means mobile crushing and screening equipment mounted on wheels.

“Quarry lime” means agricultural liming material containing calcium or a combination of calcium with magnesium which has been excavated from the earth and processed by crushing and screening and capable of neutralizing soil acidity.

“Specialty limestone” means agricultural liming material distributed primarily for nonfarm use, such as home gardens, lawns, shrubbery, flowers, golf courses, municipal parks, cemeteries, greenhouses and nurseries.

“Ton” means a net weight of 2,000 pounds avoirdupois.

“Water treatment lime” means agricultural liming material containing calcium or a combination of calcium with magnesium and capable of neutralizing soil acidity which is derived from water treatment plants.

“Weight” means the weight of undried agricultural liming material or specialty limestone offered for sale.

21—43.14(201A) Determination of ECCE. Agricultural liming material or specialty limestone offered for sale, sold or otherwise distributed in this state shall be analyzed on the basis of the number of pounds of effective calcium carbonate equivalent per ton, using the method set forth in this rule.

43.14(1) A fineness factor shall be determined as follows:

- a. Multiply the percent of the total material passing the number 4 sieve by one-tenth.
- b. Multiply the percent of the total material passing the number 8 sieve by three-tenths.
- c. Multiply the percent of the total material passing the number 60 sieve by six-tenths.
- d. Add the results obtained from paragraphs 43.14(1)“a,” “b” and “c” to obtain the fineness factor.

43.14(2) Multiply the fineness factor obtained by using the method in subrule 43.14(1) by the percent of calcium carbonate equivalent in the material to obtain the percent of ECCE.

43.14(3) The percent of ECCE obtained in subrule 43.14(2) shall be reduced by the percent of moisture contained in the sample.

43.14(4) Multiply 2,000 pounds by the percent ECCE obtained in subrule 43.14(3) to determine the number of pounds of ECCE per ton of agricultural liming material or specialty limestone.

21—43.15(201A) Sample procedure.

43.15(1) Samples of agricultural liming material for analyzing the number of pounds of ECCE shall be obtained by taking samples from the manufacturer’s production belt or stockpile. A minimum of one sample and up to five samples shall be taken at locations where there are permanent production facilities each year that agricultural liming material is being produced. Samples shall be taken at locations where there are no permanent production facilities once during the time that a portable plant is at the location producing agricultural liming material. Subsequent samples will be taken either

during the period that the portable plant is at the location or from the stockpile created, until a total of three to five representative samples from the pile have been accumulated and submitted for analysis. The manufacturer or producer of agricultural liming material shall notify the secretary of agriculture or person or persons appointed by the secretary of the production of agricultural liming material seven calendar days prior to the manufacture or production of agricultural liming material so that samples may be obtained by a person or persons appointed by the secretary in compliance with this rule.

43.15(2) Samples of specialty limestone for analyzing the number of pounds of ECCE shall be submitted to the secretary of agriculture by the manufacturer or producer of specialty limestone for analysis in accordance with rule 21—43.16(201A).

43.15(3) Samples of agricultural liming material may be obtained from manufacturers' or producers' production belts, stockpiles or in transportation and analyzed for compliance with certification requirements of rule 21—43.18(201A). Samples of specialty limestone may be obtained from packages and analyzed for compliance with certification requirements of rule 21—43.18(201A).

43.15(4) Samples of water treatment plant lime for analyzing the number of pounds of ECCE shall be obtained by taking samples from the water plant designated sampling point. Samples shall be taken when agricultural liming material is being taken off-site for land application. The producer of the agricultural liming material shall notify the secretary of agriculture or person(s) appointed by the secretary about the intent to land apply the liming material seven calendar days prior to the land application when agricultural liming material is stockpiled so that samples may be obtained in compliance with this rule.

21—43.16(201A) Sample analysis. Samples of agricultural liming material or specialty limestone obtained as provided in rule 21—43.15(201A) shall be submitted to a certified commercial lab whose services have been retained by the department for analysis of acid neutralization capacity expressed as calcium carbonate equivalent, percentage of material passing a 4-, 8- and 60-mesh sieve and the percentage of moisture contained in the sample. The results of the analysis of each sample shall be submitted to the secretary of agriculture.

21—43.17(201A) Sample fee. The manufacturer or producer of agricultural liming material or specialty limestone shall pay a fee of no more than \$60 per sample collected. This fee may be adjusted by the secretary of agriculture by a separate notice letter to each manufacturer or producer to reflect as accurately as possible the actual cost of sampling and testing expended by the Iowa department of agriculture and land stewardship for each sample collected.

21—43.18(201A) Certification.

43.18(1) The secretary of agriculture shall, upon receipt of the analysis provided in rule 21—43.16(201A), certify the number of pounds of ECCE, using the method provided in rule 21—43.14(201A). The certification shall be forwarded to the manufacturer or producer from whom the sample was obtained by written notice and sent by United States mail.

Each certification of ECCE should be based on the average of a maximum of five analyses from five samples. Each new analysis received should be added to the previous five analyses and the oldest analysis shall be omitted. Fewer than five analyses shall be averaged on the basis of the actual number of analyses. Nothing in this rule shall preclude a manufacturer or producer from having a certification on separate stockpiles of agricultural liming material provided that each stockpile shall be separated from any other stockpile and each separate stockpile has been sampled and certified as required.

43.18(2) All agricultural liming material or specialty limestone offered for sale, sold or otherwise distributed shall be offered for sale, sold or distributed by the pound of ECCE. Any person who offers for sale, sells or distributes agricultural liming material or specialty limestone shall affix or cause to be affixed to every bill of lading, scale ticket, delivery receipt or other instrument of sale or package the certification of the secretary of agriculture of the number of pounds of ECCE per ton in the agricultural liming material or specialty limestone. The certification shall be in the following form: Iowa Secretary of Agriculture Certified _____ pounds ECCE per ton. The pounds of ECCE

certified by the secretary of agriculture for the agricultural liming material or specialty limestone shall be inserted in the space provided.

43.18(3) Agricultural liming material which has been further processed, subsequent to certification, as provided in rule 21—43.14(201A), including but not limited to decreasing or increasing moisture content, shall have the certification adjusted accordingly. Within 48 hours from the time of delivery, the adjusted certification shall be provided to the ultimate consumer of the agricultural liming material in writing together with the certification as provided in subrule 43.18(2) and shall accurately reflect the ECCE of the agricultural liming material.

43.18(4) All agricultural liming material and specialty limestone certifications shall expire on January 1, three years after being issued, provided no samples have been obtained and analyzed.

21—43.19(201A) Compliance with certification. If official sampling and analysis of agricultural liming material or specialty limestone in accordance with subrule 43.15(3) and rule 21—43.16(201A) indicates that the agricultural liming material or specialty limestone does not meet a minimum of 90 percent of the certification as provided in rule 21—43.18(201A), the secretary shall notify the manufacturer or producer of the agricultural liming material or specialty limestone that the certification must be corrected prior to any further sale, distribution or offer for sale of the agricultural liming material or specialty limestone in Iowa. The secretary may request that monetary reimbursement be made to the purchaser to rectify the deficiency of the agricultural liming material or specialty limestone and that the monetary reimbursement be reported to the department. Reimbursement must be made within 30 days of the reported deficiency.

21—43.20(201A) Labeling. Agricultural liming material shall not be offered for sale, sold or otherwise distributed in this state unless a label accompanies the agricultural liming material which provides the identification of the type of agricultural liming material in accordance with rule 21—43.13(201A).

21—43.21(201A) Toxic materials prohibited. It shall be unlawful for any manufacturer or producer of agricultural liming material or specialty limestone to sell, distribute or offer for sale any agricultural liming material or specialty limestone which contains toxic materials in quantities injurious to plant, animal, human or aquatic life or which causes soil or water contamination. The secretary may require additional laboratory analysis be conducted and results submitted to the department by the manufacturer or producer of agricultural liming material or specialty limestone to determine that the product does not contain an injurious quantity of toxic materials.

21—43.22(201A) Added materials. It shall be unlawful to sell, distribute or offer for sale any agricultural liming material or specialty limestone which contains other added materials unless the added materials are registered and guaranteed as provided in Iowa Code section 200.5(1), except binding materials used in the production of pelletized lime as defined in rule 21—43.13(201A).

21—43.23(201A) Egg shells. The following shall apply to any agricultural liming material that consists primarily of egg shells:

1. With the exception of numbered paragraph “2,” the material shall be stored in a structure that prevents precipitation from contacting the stored material.
2. The material may be stored in a manner not meeting the requirements of numbered paragraph “1” for a period of not more than 14 days in the field where the material will be land-applied.

These rules are intended to implement Iowa Code chapters 200, 201, and 201A.