STATUTORY INSTRUMENTS

1991 No. 973

AGRICULTURE

The Fertilisers (Sampling and Analysis) Regulations 1991

Made - - - -	*27th March 1991*
Laid before Parliament	*29th April 1991*
Coming into force	*20th May 1991*

THE FERTILISERS (SAMPLING AND ANALYSIS) REGULATIONS 1991

1. Title, commencement and interpretation
2. Prescribed amount for the purposes of the definition of sampled portion
3. Manner of taking, marking, sealing and fastening up of samples
4. Methods of sending part of a sample
5. Qualifications of agricultural analysts and deputy agricultural analysts
6. Application of the methods of analysis
7. Form of certificate of analysis
8. Modification of the Agriculture Act 1970
9. Revocations

Signature

SCHEDULE 1 — MANNER OF TAKING, MARKING, SEALING AND FASTENING UP OF SAMPLES

PART I — DEFINITIONS

PART II — GENERAL INSTRUCTIONS FOR THE TAKING IF SAMPLES

1. In the case of fertiliser in containers, only unopened containers...
2. The sample shall be taken and prepared as quickly as...
3. No sample shall be drawn from any part of the...
4. When stones are naturally present in a fertiliser, they shall,...
5. An inspector who intends to take a sample in accordance...
6. The sampling apparatus shall be made of materials which cannot...
7. In the case of a sampling spear its dimensions shall...
8. Notwithstanding the provisions of these Regulations, a sampling spear shall...
9. Mechanical appartus may be used for the sampling of moving...
10. Apparatus designed to divide the sample into approximately equal parts...

11. A sample taken in accordance with the methods described below...

PART III — QUANTITATIVE REQUIREMENTS

1. ***Sampled portion***
2. ***Incremental sample***
3. ***Aggregate sample***
4. ***Final sample***

PART IV — TAKING AND PREPARATION OF SAMPLES

1. ***Incremental samples***
2. ***Aggregate sample***
3. ***Reduced sample***
4. ***Final samples***

PART V — MARKING, SEALING AND FASTENING UP OF THE FINAL SAMPLE

1. Each container of a final sample shall be so secured...
2. A label shall be attached to the container or receptacle...
3. The container or receptacle may also be sealed, or the...

PART VI — SAMPLING TABLES

SCHEDULE 2 — METHODS OF ANALYSIS

PART I

1. ***General***
2. ***Reagents and Apparatus***
3. ***Methods of analysis***

1.

PREPARATION OF THE SAMPLE FOR ANALYSIS

1. SCOPE
2. PRINCIPLE
3. APPARATUS
4. CHOICE OF TREATMENT TO BE USED
5. METHOD
6. SPECIAL CASES
7. FLUID FERTILISERS

2.

DETERMINATION OF AMMONIACAL NITROGEN

1. SCOPE
2. FIELD OF APPLICATION
3. PRINCIPLE
4. REAGENTS
5. APPARATUS
6. PREPARATION OF SAMPLE
7. PROCEDURE
8. EXPRESSION OF THE RESULT

TABLE FOR METHOD 2

3a.

DETERMINATION OF NITRIC AND AMMONIACAL NITROGEN— ULSCH METHOD

1. SCOPE
2. FIELD OF APPLICATION
3. PRINCIPLE
4. REAGENTS
5. APPARATUS
6. PREPARATION OF SAMPLE
7. PROCEDURE
8. EXPRESSION OF THE RESULTS

3b.

DETERMINATION OF NITRIC AND AMMONIACAL NITROGEN—ARND METHOD

1. SCOPE
2. FIELD OF APPLICATION
3. PRINCIPLE
4. REAGENTS
5. APPARATUS
6. PREPARATION OF SAMPLE
7. PROCEDURE
8. EXPRESSION OF THE RESULTS

3c.

DETERMINATION OF NITRIC AND AMMONIACAL NITROGEN—DEVARDA METHOD

1. SCOPE
2. FIELD OF APPLICATION
3. PRINCIPLE
4. REAGENTS
5. APPARATUS
6. PREPARATION OF THE SAMPLE
7. PROCEDURE
8. EXPRESSION OF RESULTS

4a.

DETERMINATION OF THE TOTAL NITROGEN IN CALCIUM CYANAMIDE—IN THE ABSENCE OF NITRATE

1. SCOPE
2. FIELD OF APPLICATION
3. PRINCIPLE
4. REAGENTS
5. APPARATUS
6. PREPARATION OF SAMPLE
7. PROCEDURE
8. EXPRESSION OF THE RESULT

4b.

DETERMINATION OF TOTAL NITROGEN IN CALCIUM CYANAMIDE—IN THE PRESENCE OF NITRATE

1. SCOPE
2. FIELD OF APPLICATION
3. PRINCIPLE
4. REAGENTS
5. APPARATUS
6. PREPARATION OF THE SAMPLE
7. PROCEDURE
8. EXPRESSION OF THE RESULTS

5.

DETERMINATION OF TOTAL NITROGEN IN UREA

1. SCOPE
2. FIELD OF APPLICATION
3. PRINCIPLE
4. REAGENTS
5. APPARATUS
6. PREPARATION OF THE SAMPLE
7. PROCEDURE
8. EXPRESSION OF THE RESULT

6.

DETERMINATION OF CYANAMIDE NITROGEN

1. SCOPE
2. FIELD OF APPLICATION
3. PRINCIPLE
4. REAGENTS
5. APPARATUS
6. PREPARATION OF THE SAMPLE
7. PROCEDURE
8. EXPRESSION OF RESULTS

7.

DETERMINATION OF BIURET IN UREA

1. SCOPE
2. FIELD OF APPLICATION
3. PRINCIPLE
4. REAGENTS
5. APPARATUS
6. PREPARATION OF SAMPLE
7. PROCEDURE
8. EXPRESSION OF RESULTS

8a.

DETERMINATION OF DIFFERENT FORMS OF NITROGEN IN THE SAME SAMPLE—IN THE PRESENCE OF CYANAMIDE NITROGEN

1. SCOPE
2. FIELD OF APPLICATION
3. PRINCIPLE
4. REAGENTS
5. APPARATUS
6. PREPARATION OF THE SAMPLE
7. PROCEDURE
8. VERIFICATION OF THE RESULTS

8b.

DETERMINATION OF DIFFERENT FORMS OF NITROGEN IN THE SAME SAMPLE—IN THE ABSENCE OF CYANAMIDE NITROGEN

1. SCOPE
2. FIELD OF APPLICATION
3. PRINCIPLE
4. REAGENTS
5. APPARATUS
6. PREPARATION OF SAMPLE
7. PROCEDURE
1. ***Remarks***
2. The titration may also be carried out using an indicator...
8. EXPRESSION OF RESULTS

9a.

EXTRACTION OF TOTAL PHOSPHORUS BY MINERAL ACIDS

1. SCOPE
2. FIELD OF APPLICATION
3. PRINCIPLE
4. REAGENTS
5. APPARATUS
6. PREPARATION OF THE SAMPLE
7. PROCEDURE

9b.

EXTRACTION OF PHOSPHORUS BY 2% FORMIC ACID

1. SCOPE
2. FIELD OF APPLICATION
3. PRINCIPLE
4. REAGENTS
5. APPARATUS
6. PREPARATION OF THE SAMPLE
7. PROCEDURE

9c.

EXTRACTION OF PHOSPHORUS BY 2% CITRIC ACID

1. SCOPE
2. FIELD OF APPLICATION
3. PRINCIPLE
4. REAGENT
5. APPARATUS
6. PREPARATION OF THE SAMPLE
7. PROCEDURE

9d.

EXTRACTION OF PHOSPHORUS BY NEUTRAL AMMONIUM CITRATE

1. SCOPE
2. FIELD OF APPLICATION
3. PRINCIPLE
4. REAGENTS
5. APPARATUS
6. PREPARATION OF THE SAMPLE
7. PROCEDURE

9e.

EXTRACTION OF PHOSPHORUS BY ALKALINE AMMONIUM CITRATE (PETERMANN'S METHOD) AT 65°C.

1. SCOPE
2. FIELD OF APPLICATION
3. PRINCIPLE
4. REAGENTS
5. APPARATUS
6. PREPARATION OF SAMPLE
7. PROCEDURE

9f.

EXTRACTION OF PHOSPHORUS BY ALKALINE AMMONIUM CITRATE (PETERMANN'S METHOD) AT AMBIENT TEMPERATURE

1. SCOPE
2. FIELD OF APPLICATION
3. PRINCIPLE
4. REAGENT
5. APPARATUS
6. PREPARATION OF THE SAMPLE
7. PROCEDURE

9g.

EXTRACTION OF PHOSPHORUS BY JOULIE'S ALKALINE AMMONIUM CITRATE

1. SCOPE

2. FIELD OF APPLICATION
3. PRINCIPLE
4. REAGENTS
5. APPARATUS
6. PREPARATION OF THE SAMPLE
7. PROCEDURE
8. APPENDIX

9h.

EXTRACTION OF PHOSPHORUS BY WATER

1. SCOPE
2. FIELD OF APPLICATION
3. PRINCIPLE
4. APPARATUS
5. PREPARATION OF THE SAMPLE
6. PROCEDURE

10.

DETERMINATION OF EXTRACTED PHOSPHORUS
(Gravimetric method using quinoline phosphomolybdate)

1. SCOPE
2. FIELD OF APPLICATION
3. PRINCIPLE
4. REAGENTS
5. APPARATUS
6. PROCEDURE
7. EXPRESSION OF RESULTS

11.

DETERMINATION OF WATER-SOLUBLE POTASSIUM

1. SCOPE
2. FIELD OF APPLICATION
3. PRINCIPLE
4. REAGENTS
5. APPARATUS
6. PREPARATION OF THE SAMPLE
7. PROCEDURE
8. EXPRESSION OF RESULTS

12a.

DETERMINATION OF WATER-SOLUBLE MAGNESIUM—
ATOMIC ABSORPTION SPECTROPHOTOMETRIC METHOD

1. SCOPE
2. FIELD OF APPLICATION
3. PRINCIPLE
4. REAGENTS
5. APPARATUS

6. PREPARATION OF SAMPLE
7. PROCEDURE
8. EXPRESSION OF RESULTS

12b.

DETERMINATION OF WATER-SOLUBLE MAGNESIUM—EDTA METHOD

1. SCOPE
2. FIELD OF APPLICATION
3. PRINCIPLE
4. REAGENTS
5. APPARATUS
6. PREPARATION OF THE SAMPLE
7. PROCEDURE
8. EXPRESSION OF RESULTS

13a.

DETERMINATION OF TOTAL MAGNESIUM—ATOMIC ABSORPTION SPECTROPHOTOMETRIC METHOD

1. SCOPE
2. FIELD OF APPLICATION
3. PRINCIPLE
4. REAGENTS
5. APPARATUS
6. PREPARATION OF SAMPLE
7. PROCEDURE
8. EXPRESSION OF RESULTS

13b.

DETERMINATION OF TOTAL MAGNESIUM—EDTA METHOD

1. SCOPE
2. FIELD OF APPLICATION
3. PRINCIPLE
4. REAGENTS
5. APPARATUS
6. PREPARATION OF THE SAMPLE
7. PROCEDURE
8. EXPRESSION OF RESULTS

14.

DETERMINATION OF CHLORIDES IN THE ABSENCE OF ORGANIC MATERIAL

1. SCOPE
2. FIELD OF APPLICATION
3. PRINCIPLE
4. REAGENTS
5. APPARATUS
6. PREPARATION OF SAMPLE
7. PROCEDURE

8. EXPRESSION OF RESULT

15a.

DETERMINATION OF FINENESS OF GRINDING—DRY METHOD

1. SCOPE
2. FIELD OF APPLICATION
3. PRINCIPLE
4. APPARATUS
5. PROCEDURE
6. EXPRESSION OF RESULTS

15b.

DETERMINATION OF THE FINENESS OF GRINDING OF SOFT NATURAL PHOSPHATES

1. SCOPE
2. FIELD OF APPLICATION
3. PRINCIPLE
4. REAGENTS
5. APPARATUS
6. PROCEDURE
7. EXPRESSION OF RESULTS
8. REMARK

16.

METHODS OF ANALYSIS AND TEST PROCEDURES FOR AMMONIUM NITRATE FERTILISERS CONTAINING MORE THAN 28% NITROGEN BY WEIGHT

A.

Methods for the Application of Thermal Cycles

1. SCOPE AND FIELD OF APPLICATION
2. THERMAL CYCLES

B.

Determination of Oil Retention

1. SCOPE AND FIELD OF APPLICATION
2. DEFINITION
3. PRINCIPLE
4. REAGENT
5. APPARATUS
6. PROCEDURE
7. EXPRESSION OF RESULTS

C.

Determination of the Combustible Ingredients

1. SCOPE AND FIELD OF APPLICATION

2. PRINCIPLE
3. REAGENTS
4. APPARATUS
5. PROCEDURE
6. BLANK TEST
7. EXPRESSION OF RESULTS

D.

Determination of the pH value

1. SCOPE AND FIELD OF APPLICATION
2. PRINCIPLE
3. REAGENTS
4. APPARATUS
5. APPARATUS
6. EXPRESSION OF RESULTS

E.

Determination of the Particle Size

1. SCOPE AND FIELD OF APPLICATION
2. PRINCIPLE
3. APPARATUS
4. PROCEDURE
5. EVALUATION OF RESULTS
6. EXPRESSION OF RESULTS

F.

Determination of the Chlorine Content (as Chloride Ion)

1. SCOPE AND FIELD OF APPLICATION
2. PRINCIPLE
3. REAGENTS
4. APPARATUS
5. PROCEDURE
6. EXPRESSION OF RESULTS

G.

Determination of Copper

1. SCOPE AND FIELD OF APPLICATION
2. PRINCIPLE
3. REAGENTS
4. APPARATUS
5. PROCEDURE
6. EXPRESSION OF RESULTS

PART II

1. ***General***
2. ***Reagents and Apparatus***
3. ***Methods of Analysis***

1. Preparation of the sample for analysis

2. Determination of moisture
3. Determination of total nitrogen—chromium powder reduction method
4. Determination of urea
5.a Extraction of phosphorus—by mineral acids (total phosphorus)
b Extraction of phosphorus—by 2% citric acid
6. Determination of extracted phosphorus—spectrophotometric method
7.a Determination of potassium—gravimetric method
b Determination of potassium—flame photometric method
8. Determination of total magnesium
9.a Determination of boron—titrimetric method
b Determination of boron—spectrophotometric method
10. Determination of cobalt
11. Determination of molybdenum
12. Determination of copper
13. Determination of iron
14. Determination of manganese
15. Determination of the nuetralising value in limiting materials
16. Determination of fineness of products other than potassic bag slag...
17. Determination of fineness of potassic basic slag.

1.

PREPARATION OF THE SAMPLE FOR ANALYSIS

1. INTRODUCTION
2. SCOPE AND FIELD OF APPLICATION
3. PRINCIPLE
4. APPARATUS
5. PROCEDURE
WARNING
6. SPECIAL CASES
7. FLUID FERTILISERS

2.

DETERMINATION OF MOISTURE

1. SCOPE AND FIELD OF APLICATION
2. PRINCIPLE
3. APPARATUS
4. PREPARATION OF SAMPLE
5. PROCEDURE
6. EXPRESSION OF RESULT

3.

DETERMINATION OF TOTAL NITROGEN-CHROMIUM POWDER REDUCTION METHOD

1. SCOPE AND FIELD OF APPLICATION
2. PRINCIPLE
3. REAGENTS
4. APPARATUS
5. PREPARATION OF SAMPLE
6. PROCEDURE

7. EXPRESSION OF RESULTS

4.

DETERMINATION OF UREA

1. SCOPE AND FIELD OF APPLICATION
2. PRINCIPLE
3. REAGENTS
4. APPARATUS
5. PREPARATION OF SAMPLE
6. PROCEDURE
7. EXPRESSION OF RESULTS

5a.

EXTRACTION OF PHOSPHORUS BY MINERAL ACIDS (TOTAL PHOSPHOROUS)

1. SCOPE AND FIELD OF APPLICATION
2. PRINCIPLE
3. REAGENTS
4. APPARATUS
5. PREPARATION OF THE SAMPLE
6. PROCEDURE

5b.

EXTRACTION OF PHOSPHORUS BY 2 % CITRIC ACID

1. SCOPE AND FIELD OF APPLICATION
2. PRINCIPLE
3. REAGENT
4. APPARATUS
5. PREPARATION OF THE SAMPLE
6. PROCEDURE

6.

DETERMINATION OF EXTRACTED PHOSPHORUS—SPECTROPHOTOMETRIC METHOD

1. SCOPE AND FIELD OF APPLICATION
2. PRINCIPLE
3. REAGENTS
4. APPARATUS
5. PROCEDURE
6. EXPRESSION OF RESULTS

7a.

DETERMINATION OF POTASSIUM-GRAVIMETRIC METHOD

1. SCOPE AND FIELD OF APPLICATION
2. PRINCIPLE
3. REAGENTS
4. APPARATUS

5. PREPARATION OF SAMPLE
6. PROCEDURE
7. EXPRESSION OF RESULTS

7b.

DETERMINATION OF POTASSIUM-FLAME PHOTOMETRIC METHOD

1. SCOPE AND FIELD OF APPLICATION
2. PRINCIPLE
3. REAGENTS
4. APPARATUS
5. PREPARATION OF SAMPLE
6. PROCEDURE
7. EXPRESSION OF RESULTS

8.

DETERMINATION OF TOTAL MAGNESIUM

8.1 EXTRACTION OF TOTAL MAGNESIUM
1. SCOPE AND FIELD OF APPLICATION
2. PRINCIPLE
3. REAGENTS
4. APPARATUS
5. PREPARATION OF THE SAMPLE
6. PROCEDURE
1. SCOPE AND FIELD OF APPLICATION
2. PRINCIPLE
3. REAGENTS
4. APPARATUS
5. PREPARATION OF THE SAMPLE
6. PROCEDURE
7. EXPRESSION OF RESULTS

9a.

DETERMINATION OF BORON-TITRIMETRIC METHOD

1. SCOPE AND FIELD OF APPLICATION
2. PRINCIPLE
3. REAGENTS
4. APPARATUS
5. PREPARATION OF SAMPLE
6. PROCEDURE
7. EXPRESSION OF RESULT

9b.

DETERMINATION OF BORON-SPECTROPHOTOMETRIC METHOD

1. SCOPE AND FIELD OF APPLICATION
2. PRINCIPLE
3. REAGENTS
4. APPARATUS

5. PREPARATION OF THE SAMPLE
6. PROCEDURE
7. EXPRESSION OF RESULTS

10.

DETERMINATION OF COBALT

1. SCOPE AND FIELD OF APPLICATION
2. PRINCIPLE
3. REAGENTS
4. APPARATUS
5. PREPARATION OF THE SAMPLE
6. PROCEDURE
7. EXPRESSION OF RESULTS

11

DETERMINATION OF MOLYBDENUM

1. SCOPE AND FIELD OF APPLICATION
2. PRINCIPLE
3. REAGENTS
4. APPARATUS
5. PREPARATION OF THE SAMPLE
6. PROCEDURE
7. EXPRESSION OF RESULTS

12.

DETERMINATION OF COPPER

1. SCOPE AND FIELD OF APPLICATION
2. PRINCIPLE
3. REAGENTS
4. APPARATUS
5. PREPARATION OF SAMPLE
6. PROCEDURE
7. EXPRESSION OF RESULTS

13.

DETERMINATION OF IRON

1. SCOPE AND FIELD OF APPLICATION
2. PRINCIPLE
3. REAGENTS
4. APPARATUS
5. PREPARATION OF SAMPLE
6. PROCEDURE
7. EXPRESSION OF RESULTS

14.

DETERMINATION OF MANGANESE

1. SCOPE AND FIELD OF APPLICATION
2. PRINCIPLE
3. REAGENTS
4. APPARATUS
5. PREPARATION OF SAMPLE
6. PROCEDURE
7. EXPRESSION OF RESULTS

15.

DETERMINATION OF THE NEUTRALISING VALUE IN LIMING MATERIALS

1. SCOPE AND FIELD OF APPLICATION
2. PRINCIPLE
3. REAGENTS
4. PREPARATION OF SAMPLE
5. PROCEDURE
6. EXPRESSION OF RESULTS

16.

DETERMINATION OF FINENESS OF PRODUCTS OTHER THAN POTASSIC BASIC SLAG

1. SCOPE AND FIELD OF APPLICATION
2. PRINCIPLE
3. APPARATUS
4. PROCEDURE
5. ***EXPRESSION OF RESULTS***

17.

DETERMINATION OF FINENESS OF POTASSIC BASIC SLAG

1. SCOPE AND FIELD OF APPLICATION
2. PRINCIPLE
3. APPARATUS
4. PROCEDURE
5. EXPRESSION OF RESULTS

APPENDIX TO —
SCHEDULE 2

SCHEDULE 3 — FORM OF CERTIFICATE OF ANALYSIS

Explanatory Note