## MINISTRY OF AGRICULTURE

### (Department of Agriculture and Cooperation)

### ORDER

New Delhi, the 16th August, 2013

**S.O. 2475(E).**—In exercise of the powers conferred by section 3 of the Essential Commodities Act, 1955 (10 of 1955), the Central Government hereby makes the following Order further to amend the Fertiliser (Control) Order, 1985, namely:-

1. (1) This Order may be called the Fertiliser (Control) Third Amendment Order, 2013.
(2) It shall come into force on the date of its publication in the Official Gazette.

2. In the Fertiliser (Control) Order, 1985 (hereinafter referred to as the said Order),in sub-clause (1) of clause 29 B, for the words, brackets and figures "Every laboratory referred to in sub-clause (1) of clause 29 shall be designated as referee laboratory for the purpose of analysis of any sample of fertiliser", the following shall be substituted namely:-

"(1) National Test House at Chennai, Kolkatta, Ghaziabad, Mumbai and Jaipur, Soil testing laboratory, Soil Science Division, Indian Agricultural Research Institute (IARI), PUSA, New Delhi and every laboratory referred to in sub-clause (1) of clause 29 shall be designated as referee laboratory for the purpose of analysis of any sample of fertiliser".

3. In Schedule I of the said order, in Part A, under the heading "Specification of Fertilisers",-

(i) in sub-heading 1(a) relating to STRAIGHT NITROGENEOUS FERTILISERS, after serial number 12, the following serial number and entries shall be added, namely:-

**"13. Sulphur Coated Urea**

| | | |
|---|---|---|
| (i) | Moisture per cent. by weight, maximum | 1.0 |
| (ii) | Total nitrogen per cent. by weight (on dry basis), minimum | 37.0 |
| (iii) | Sulphur (as S) per cent. by weight, minimum | 17.0 |
| (iv) | Biuret per cent. by weight ,maximum | 1.5 |

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| | | |
|---|---|---|
| (v) | Particle size-Not less than 90 per cent. of the material shall pass through 8 mm IS sieve and not less than 80 per cent. by weight shall be retained on 2 mm IS sieve. Not more than 5 per cent. shall pass through 2 mm IS sieve."; | |

(ii) in sub-heading 1 (b) relating to STRAIGHT PHOSPHATIC FERTILISERS, in serial number 1, the words, figures and letters "Serial number 1 and the entries there under shall be omitted with effect from 8th day of May,2014" shall be omitted ;

(iii) in sub-heading 1 (f) relating to "MICRONUTRIENTS",-

(a) in serial number 14, "Di- Sodium Tetra Borate Penta Hydrate", in item number (i), for the figures "15.0", the figures "14.6" shall be substituted;

(b) after serial number 16, the following serial number 17 and the entries, shall be added, namely:-

"17 Di- Sodium Tetra Borate Penta Hydrate

| | | |
|---|---|---|
| (i) | Boron (as B) per cent. by weight, minimum | 14.6 |
| (ii) | Matter insoluble in water per cent. by weight, maximum | 1.0 |
| (iii) | Arsenic (as As) per cent. by weight, maximum | 0.001 |
| (iv) | Lead (as Pb) per cent. by weight, maximum | 0.001 |
| (v) | Appearance - | Free flowing crystalline."; |

(iv) in sub-heading 1 (g) relating to "FORTIFIED FERTILISERS", after serial number 12 and entries relating thereto, the following serial numbers and the entries shall be added, namely:-

**"13. NPK Complex Fertiliser Fortified with Boron ( 24:24:0:0.2B)**

| | | |
|---|---|---|
| (i) | Moisture per cent. by weight, maximum | 1.5 |
| (ii) | Total nitrogen per cent. by weight, minimum | 24.0 |
| (iii) | Ammoniacal nitrogen per cent. by weight, minimum | 13.5 |

| | | |
|---|---|---|
| (iv) | Nitrate nitrogen per cent. by weight, maximum | 10.5 |
| (v) | Neutral ammonium citrate soluble phosphate ( as $P_2O_5$ ) per cent. by weight, minimum | 24.0 |
| (vi) | Water soluble phosphate (as $P_2O_5$) per cent. by weight, minimum | 20.5 |
| (vii) | Particle size – Not less than 90 per cent. of the material shall pass through 4.0 mm IS- sieve and be retained on 1.0 mm IS sieve. Not more than 5 per cent. shall be below 1.0 mm IS sieve. | |
| (viii) | Boron as B per cent. by weight | 0. 2 |

14. Boronated Single Super Phosphate (Granular) (16 % P2O5)

| | | |
|---|---|---|
| (i) | Moisture per cent. by weight, maximum | 12.0 |
| (ii) | Free Phosphoric Acid ( as $P_2O_5$), per cent. by weight, maximum | 4.0 |
| (iii) | Water soluble phosphate (as $P_2O_5$), per cent. by weight, minimum | 14.5 |
| (iv) | Boron (as B) per cent. by weight | 0.15-0.20 |
| (v) | Sulphur (as S) per cent. by weight , minimum | 11.0 |
| (vi) | Neutral ammonium citrate soluble phosphate (as $P_2O_5$ ), minimum | 16.0 |
| (vii) | Particle size | Not less than 90 % of the material shall pass through 4 mm IS sieve and shall be retained on 1 mm IS sieve. Not more than 5 % shall pass through 1 mm IS sieve.". |

4. In Schedule III of the said Order, in Part A under the heading "SPECIFICATION OF BIOFERTILISERS" after serial number 7 and the entries relating thereto, the following serial number and the entries shall be inserted, namely:-

" 8. Acetobacter

| | | |
|---|---|---|
| (i) | Base | Carrier based* in form of moist/dry powder or granules or liquid based |
| (ii) | Viable cell count | CFU minimum $5x10^7$ cells/g of powder /granules or carrier material or $1x10^8$ cells/ml of liquid. |
| (iii). | Contamination level | No contamination at $10^5$ dilution |
| (iv). | pH | 5.5-6.0 for moist/dry powder, granulated or carrier based and 3.5-6.0 for liquid |
| (v) | Particle size in case of carrier based material | All material shall pass through 0.15-0.212 mm IS sieve |
| (vi) | Moisture per cent. by weight, maximum in case of carrier based | 30-40% |
| (vii) | Efficiency character | Formulation of yellowish pellicle in semisolid medium N free medium |

***Type of carrier** - The carrier such as peat, lignite, peat soil, humus, wood charcoal or similar materials favouring growth of organism.".

5. In Schedule III of the said Order, in Part D under the heading "METHODS OF ANALYSIS OF BIO FERTILISERS", after serial number 1 G, the following serial number and the entries shall be inserted, namely,-

"1H Methods of analysis for Acetobacter (spp).

**1.Appartus – As specified in the Method of Analysis of Rhizobium at serial number 1. A.**

**2.Reagents**

**2.1 Medium**

Use plating medium of the following composition for total viable count and contamination:-

Medium for analysis of total viable count and contamination (ingredients gram/litre)

Sucrose - 100 g
$K_2 HPO_4$ (Di-Potassium Hydrogen Phosphate) - 0.4 g
$KH_2PO_4$ (Potassiuum di-hydrogen Phosphate) -0.6 g
MgSO4 (Magnesium Sulphate) - 0.2 g
Calcium Chloride -0.02 g

| | |
|---|---|
| Sodium Molybdate | -0.02 g |
| Ferric Chloride | - 0.01 g |
| Bromothymol blue solution (0.5% in 0.2 m KOH) | - 5.0 ml |
| Distilled water | -1000 ml |
| pH | -5.5 g |
| agar agar | -18.5 g |

3. Sterilising and preparation procedure for plates
(Same as specified in the Method of Analysis of Rhizobium)

3.1 Preparation of plating medium and pouring

(Same as specified in the Method of Analysis of Rhizobium.)

4. Preparation of serial dilutions for plate counts

(Same as specified in the Method of Analysis of Rhizobium)

5.Incubation of plates
(Same as specified in the Method of Analysis of Rhizobium )

5.1 Colony counting Aids
Count the colonies with the aid of magnifying lens under uniform and properely controlled, artifical illumination. Use a colony counter, equipped with guide plate and rules in centimeter square. Record the total number of colonies with hand tally. Avoid mistaking particles of undissolved medium or precipitated matter in plates for pin point colonies. To distinguish colonies from dirt, specks and foreign matter, examine doubtful objects carefully

5.2 Count all plates but consider for the purpose of calculation only those plates showing more than 30 and less than 300 colonies per plate. Acetobacter a nitrogen fixing bacteria stand out as irregular 2-3mm diameter, smooth flat with bright yellow or yellow with oran e centre colour.Count such colony numbers and calculate figures in terms of per litre, of carrier. Also check freedom from contamination at $10^5$ .

6. Test for confirmation

1 Appartus (same as specified in the Method of Analysis of Azospirillum at serial number 1C).
2. Reagent

2.1 Medium (semi solid for pellicle formation)
(ingredients gm per liter )

| | |
|---|---|
| Sucrose | -100 g |
| $K_2 HPO_4$ (Di-Potassium Hydrogen Phosphate) | - 0.4 |

| | |
|---|---|
| $KH_2PO_4$ (Potassiuum di-hydrogen Phosphate) | -0.6 g |
| MgSO4 (Magnesium Sulphate) | - 0.2 g |
| Calcium Chloride | -0.02 g |
| Sodium Molybdate | -0.02 g |
| Ferric Chloride | - 0.01g |
| Bromothymol blue solution (0.5% in 0.2 m KOH) | - 5.0 ml |
| Distilled water | -1000 ml |
| pH | -5.5 g |
| agar agar | -1.75 g |

3 Sterilization and preparation of MPN tubes
(Same as specified in the Method of Analysis of Azospirillum at serial number 1C)

4.Preparation of serial dilution for MPN count
(Same as specified in the Method of Analysis of Azospirillum at serial number 1C)

5. Incubation of tubes
(Same as specified in the Method of Analysis of Azospirillum at serial number 1C)

6. Counting - Yellowish pellicle formation below 1 mm of upper surface of nitrogen free semi solid media. Counting the tubes or plates which have turned yellowish in colour after inoculation and ascertained the presence of pellicle in undistributed medium. To determine usual contamination on the same examine doubtful objects carefully.

7 Method for Estimating MPN count
Count all tubes which have turned yellowish and consider them for the purpose of calculation. Count such type of tubes and tally this count with MPN table ( as specified in the Method of Analysis of Azospirillum at serial number 1C in Table 1) to get the number of cells per gram of carrier or number of cells per ml of liquid.".

6. In Schedule IV of the said Order, in Part A under the heading "SPECIFICATION OF ORGANIC FERTILISERS", after serial number 3 and the entries relating thereto, the following serial number and the entries shall be inserted, namely:-
"4.Organic Manure

| | | |
|---|---|---|
| (i) | Moisture per cent. by weight, maximum | 25.0 |
| (ii) | Particle size | Minimum 90% material should pass through 4.0 mm IS sieve |
| (iii) | Bulk density ($g/cm^3$) | <1.0 |
| (iv) | Total organic carbon per cent. by weight, minimum | 14.0 |
| (v) | Total nitrogen (as N) per cent. by weight, minimum | 0.5 |
| (vi) | Total phosphates ( as $P_2O_5$ ) per cent. by weight, minimum | 0.5 |
| (vii) | Total potash (as $K_2O$) per cent. by weight, | 0.5 |

| | | |
|---|---|---|
| | minimum | |
| (viii) | NPK nutrients- Total N, $P_2O_5$ and $K_2O$ nutrient should not be less than 3% . | |
| (ix) | C:N ratio | <20 |
| (x) | pH | 6.5-7.5 |
| (xi) | Conductivity (as $dsm^{-1}$) not more than | 4.0 |
| (xii) | Pathogen | Nil |
| (xiii) | Heavy metal content, (as mg./kg), maximum | |
| | Arsenic as ($As_2O_3$) | 10.0 |
| | Cadmium (as Cd) | 5.0 |
| | Chromium (as Cr) | 50.0 |
| | Copper (as Cu) | 300.0 |
| | Mercury (as Hg) | 0.15 |
| | Nickel (as Ni) | 50.0 |
| | Zinc (as Zn) | 1000.00 |

Note: The source of organic manure is any of the plant biomass / animal biomass/ animal Excreta.

[F. No. 2-2/2013-Fert. Law]

ASHISH KUMAR BHUTANI, Jt. Secy.

**Foot Note :** The Principal Order was published *vide* number G.S.R. 758(E), dated 25th September, 1985 and last amended *vide* number S.O. 1110 (E) dated 1st May,2013.

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