A. Notified by Government of Pakistan

STANDARDS DEVELOPMENT CENTER

(Chemical Division)

FERTILIZER AND ALLIED PRODUCTS TECHNICAL COMMITTEE

List of Mandatory Pakistan Standards of Fertilizers by PSQCA

Sr No	PS No	Name of Standard
1	36-2014 (Rev.)	AMMONIUM SULPHATE, FERTILIZER GRADE (2nd REVISION)
2	67-1996	SINGLE SUPER PHOSPHATE (2ND REVISION)
3	216-2009	TRIPLE SUPER PHOSPHATE (2ND REVISION)
4	217-2017	UREA FERTILIZER (PRILLED, GRANULAR, COATED AND SLOW RELEASE)
5	933-1973	MULTINUTRIENT FERTILIZER
6	1501-2011 (R)	POTASSIUM SULPHATE FERTILIZER GRADE (2ND REV)
7	3517-1994	DIAMMONIUM PHOSPHATE
8	5295-2017	BIO ORGANIC PHOSPHATE (BOP) FERTILIZER
9	5330	BIO FERTILIZER

List of Non-Mandatory Pakistan Standards of Fertilizers by PSQCA

Sr No	PS No	Name of Standard
1	1517-1981	POTASSIUM CHOLIRIDE (MURIATE OF POTASH) FERTILIZER GRADE
2	4991-2009	MONOAMMONIUM PHOSPHATE
3	5329-2014	PLANT GROWTH PROMOTING BACTERIA-FORTIFIED FERTILIZERS (PGPR-FF)
4	5336-2021 (2ND REV)	BIOACTIVE NUTRIENT FERTILIZER PRODUCTS (BNFF)
5	5341-2016	POTASSIUM NITRATE
6	5449-2020 (R)	SULPHUR (1ST REV)
7	5469-2020	LIQUID NUTRIENT SUPPLEMENT
8	1539-1982	ZINC SULPHATE (FERTILIZER GRADE)
9	1873-1987	NITROPHOS FERTILIZER
10	4750-2001	ZINC SULPHATE MONOHYDRATE ($ZnSO_4.H_2O$) (FERTILIZER GRADE)
11	5249-2013	BORAX (FERTILIZER)
12	229-1980	CAN
13	1670-1985	Gypsum

B. Notified by Government of the Punjab, Agriculture Department

Notifications of Notified Products

Sr. No.	Notification No. & Date	No. of Products
1	SOA(Ext) 1-70/2006 (FCO) dated 07.08.2007	19
2	SOA(Ext) 1-70/2006 (FCO) dated 13.03.2009	31
3	SOA(Ext) 1-70/2006 (FCO) dated 27.05.2009	1
4	SOA(Ext) 1-70/2006 (FCO) dated 14.04.2011	1
5	SOA(Ext) 1-70/2006 (FCO) dated 07.06.2011	4
6	SOA(Ext) 1-70/2012 (FCO) dated 17.06.2013	2 (amended out of 31)
7	SOA(Ext) 1-70/2012 (FCO) dated 26.08.2013	1 (amended out of 31)
8	SOA(Ext) 1-70/2012 (FCO) dated 05.09.2014	2 (amended out of 31)
9	AS (TF) 2-20/2015 dated 06.05.2017	1 (amended out of 31)
10	AS (TF) 2-9/2016 dated 10.01.2018	1
11	AS (TF) 2-10/2015 dated 10.08.2018	1

List of Products Notified for Registration under Punjab Fertilizer (Control) Order, 1973 Amended

(List of Active Products / Categories)

Sr No	Product Category	Notification No	Notification Date	Ref No
1	Zinc Sulphate Heptahydrate (21%)	SOA (Ext) 1-70/2006 (FCO)	07-08-2007	1
2	Zinc Sulphate Monohydrate (33%)	SOA (Ext) 1-70/2006 (FCO)	07-08-2007	2
3	Borax Di-Sodium Octaborate Tetrahydrate (20%)	SOA (Ext) 1-70/2006 (FCO)	07-08-2007	9
4	Borax Di-Sodium Tetraborate Decahydrate (10.5%)	SOA (Ext) 1-70/2006 (FCO)	07-08-2007	12
5	Chelatde Zinc as Zn-EDTA (5%)	SOA (Ext) 1-70/2006 (FCO)	07-08-2007	13
6	Single Super Phosphate (14% P_2O_5 Powder)	SOA (Ext) 1-70/2006 (FCO)	07-08-2007	15
7	Waste Compost (25%)	SOA (Ext) 1-70/2012 (FCO)	26-08-2013	16
8	Napthyle Acetic Acid (4.1-4.8 % W/V)	SOA (Ext) 1-70/2006 (FCO)	07-08-2007	17
9	Mepiquate Chloride (5% SL W/V)	SOA (Ext) 1-70/2006 (FCO)	07-08-2007	18
10	Cyclanilide + Mepiquate Chloride (2.15% + 8.4% w/w)	SOA (Ext) 1-70/2006 (FCO)	07-08-2007	19
11	Zinc Inorganic Liquid (10%)	SOA (Ext) 1-70/2006 (FCO)	13-03-2009	1
12	Multi Micronutrient Inorganic Solid (10.0%)	SOA (Ext) 1-70/2006 (FCO)	13-03-2009	13
13	Multi Micronutrient Inorganic Liquid (10.0%)	SOA (Ext) 1-70/2006 (FCO)	13-03-2009	14
14	Nitrogen (N) Liquid Fertilizer for fertigation (20%)	SOA (Ext) 1-70/2006 (FCO)	13-03-2009	19
15	Phosphorous (P) Liquid Fertilizer for fertigation (20%)	SOA (Ext) 1-70/2006 (FCO)	13-03-2009	20
16	Potash (K) Liquid Fertilizer for Fertigation (30%)	SOA (Ext) 1-70/2006 (FCO)	13-03-2009	21
17	Compound NPK Liquid for Fertigation (30%)	SOA (Ext) 1-70/2006 (FCO)	13-03-2009	22
18	Water Soluble NK for Drip irrigation (20%)	SOA (Ext) 1-70/2006 (FCO)	13-03-2009	24
19	Potassium Humate Solid (Humic Acid= 40% & K_2O=7%)	SOA (Ext) 1-70/2012 (FCO)	05-09-2014	i (Solid)
20	Potassium Humate Liquid (Humic Acid= 10% & K_2O=3.5%)	SOA (Ext) 1-70/2012 (FCO)	05-09-2014	i (Liquid)
21	Paclobutrazol (2.50%)	SOA (Ext) 1-70/2006 (FCO)	13-03-2009	30
22	Complex / blend of Plant Growth Regulator and Amino Acids (Biostimulent)	SOA (Ext) 1-70/2006 (FCO)	13-03-2009	31
23	Zinc Liquid Chelated (6%)	SOA (Ext) 1-70/2006 (FCO)	13-03-2009	2
24	Boron Inorganic Liquid (5%)	SOA (Ext) 1-70/2006 (FCO)	13-03-2009	11
25	NPK Liquid for Foliar Use (≥ 22% w/v) with ratio as (4:4:3)	AS (TF) 2-20/2015	6-May-2017	i
26	Multi Micronutrient Chelated solid (6%)	AS (TF) 2-9/2016	31-Oct-2018	i
27	Azotobacter and Azospirillum	SOA (Ext) 1-70/2006 (FCO)	07-06-2011	2
28	Phosphorous Solubilizing Bacteria (PSB)	SOA (Ext) 1-70/2006 (FCO)	07-06-2011	3
29	Plant Growth Promoting Rhizobacteria (PGPR)	SOA (Ext) 1-70/2006 (FCO)	07-06-2011	4
30	Amino Acid in Solid Form (minimum 40%)	SOA (Ext) 1-70/2012 (FCO)	17-06-2013	i
31	Amino Acid in Liquid Form (minimum 10%)	SOA (Ext) 1-70/2012 (FCO)	17-06-2013	ii
32	Zinc Sulphate (27%)	AS (TF) 2-9/2016	10-01-2018	i
33	Paclobutrazole (25% w/v)	AS (TF) 2-10/2015	10-08-2018	
34	Magnesium Sulphate (9.6%)	SOA (Ext) 1-70/2006 (FCO)	07-08-2007	3

List of Suspended Products Categories

Sr No	Product Category	Notification No	Notification Date	Ref No
1	Magnesium Sulphate (30.5%)	SOA (Ext) 1-70/2006 (FCO)	07-08-2007	4
2	Copper Sulphate (24%)	SOA (Ext) 1-70/2006 (FCO)	07-08-2007	5
3	Ferrous Sulphate (19%)	SOA (Ext) 1-70/2006 (FCO)	07-08-2007	6
4	Ammonium Molybedate (52%)	SOA (Ext) 1-70/2006 (FCO)	07-08-2007	7
5	Boric Acid (17%)	SOA (Ext) 1-70/2006 (FCO)	07-08-2007	8
6	Borax Disodium Tetraborate pentahydrate (14%)	SOA (Ext) 1-70/2006 (FCO)	07-08-2007	10
7	Borax Sodium Pentaborane Octahydrate (16%)	SOA (Ext) 1-70/2006 (FCO)	07-08-2007	11
8	Chelated Iron as Fe-EDTA (12%)	SOA (Ext) 1-70/2006 (FCO)	07-08-2007	14
9	Iron Chelated Liquid (4%)	SOA (Ext) 1-70/2006 (FCO)	13-03-2009	3
10	Iron Chelated Solid (5%)	SOA (Ext) 1-70/2006 (FCO)	13-03-2009	4
11	Manganese Inorganic Liquid (10%)	SOA (Ext) 1-70/2006 (FCO)	13-03-2009	5
12	Manganese Chelated Liquid (5%)	SOA (Ext) 1-70/2006 (FCO)	13-03-2009	6
13	Manganese Chelated Solid (6%)	SOA (Ext) 1-70/2006 (FCO)	13-03-2009	7
14	Cupper Inorganic Liquide (8%)	SOA (Ext) 1-70/2006 (FCO)	13-03-2009	8
15	Cupper Chelated Liquid (5%)	SOA (Ext) 1-70/2006 (FCO)	13-03-2009	9
16	Cupper Chelated solid (6%)	SOA (Ext) 1-70/2006 (FCO)	13-03-2009	10
17	Boron Chelated Liquid (2%)	SOA (Ext) 1-70/2006 (FCO)	13-03-2009	12
18	Multi micro nutrient Chelated Liquid 6%	SOA (Ext) 1-70/2006 (FCO)	13-03-2009	15
19	NPK solid for Foliar Use (8:8:6)	SOA (Ext) 1-70/2006 (FCO)	13-03-2009	17
20	Water Soluble NP for Drip irrigation (20%)	SOA (Ext) 1-70/2006 (FCO)	13-03-2009	23
21	Water Soluble PK for Drip irrigation (20%)	SOA (Ext) 1-70/2006 (FCO)	13-03-2009	25
22	Water Soluble NPK for Drip irrigation (30%)	SOA (Ext) 1-70/2006 (FCO)	13-03-2009	26
23	Chlormequart Chloride (50%)	SOA (Ext) 1-70/2006 (FCO)	13-03-2009	29
24	Rhizobium	SOA (Ext) 1-70/2006 (FCO)	07-06-2011	1

GOVERNMENT OF THE PUNJAB
AGRICULTURE DEPARTMENT
Dated Lahore, the Aug 07, 07

NOTIFICATION

SOA (Ext) 1-70 / 2006 (FCO): Under the provisions of Clause 18, sub-clause (5) of Punjab Fertilizer (Control) Order, 1973 and in super session of this Department No. AO TO AS (TF) 2-24/07 dated 12.05.2007 the following products along with maximum permissible percentage of toxic heavy metals within the specific product are hereby notified for registration without field trials. The given percentages of aforementioned heavy metals in a specific product are in line with international standards:-

1. ZINC SULPHATE ($ZnSO_4.7H_2O$) 21%

Sr. No.	Characteristics	Requirement (%)
1.	Insoluble contents percent by weight, (Maximum)	1.0
2.	Total Zinc content percent by weight (Minimum)	21.0
3.	Magnesium (as Mg), percent by weight, (Maximum).	0.5
4.	Copper (as Cu), percent by weight, (Maximum)	0.1
5.	Lead (as Pb), percent by weight, (Maximum)	0.003
6.	Arsenic (as As), percent by weight (Maximum)	0.001
7.	Cadmium (as Cd), percent by weight (Maximum)	0.002
8.	Cobalt (as Co), percent by weight (Maximum)	0.002
9.	Mercury (as Hg), percent by weight (Maximum)	0.0002
10.	Nickle (as Ni), percent by weight (Maximum)	0.002

2. ZINC SULPHATE MONOHYDRATE ($ZnSO_4.H_2O$) 33%

Sr. No.	Characteristics	Requirement (%)
1.	Insoluble contents percent by weight (Maximum)	1.0
2.	Total Zinc content percent by weight (Minimum)	33.0
3.	Magnesium (as Mg), percent by weight, (Maximum)	0.5
4.	Copper (as Cu), percent by weight, (Maximum)	0.1
5.	Lead (as Pb), percent by weight, (Maximum)	0.003
6.	Arsenic (as As), percent by weight (Maximum)	0.001
7.	Cadmium (as Cd), percent by weight (Maximum)	0.002
8.	Cobalt (as Co), percent by weight (Maximum)	0.002
9.	Mercury (as Hg), percent by weight (Maximum)	0.0002
10.	Nickle (as Ni), percent by weight (Maximum)	0.002

3. MAGNESIUM SULPHATE 9.6%

Sr. No.	Characteristics	Requirement (%)
1.	Insoluble contents percent by weight, (Maximum).	1.0
2.	Total Magnesium (as Mg), percent by weight, (Minimum)	9.6
3.	Lead (as Pb), percent by weight, (Maximum)	0.003
4.	Arsenic (as As), percent by weight (Maximum)	0.001
5.	Cadmium (as Cd), percent by weight (Maximum)	0.002
6.	Cobalt (as Co), percent by weight (Maximum)	0.002
7.	Mercury (as Hg), percent by weight (Maximum)	0.0002
8.	Nickle (as Ni), percent by weight (Maximum)	0.002

4. MANGANESE SULPHATE ($MnSO_4.H_2O$) 30.5%

Sr. No.	Characteristics	Requirement
1.	Insoluble contents percent by weight (Maximum).	1.2
2.	Total Magnesium (as Mn), percent by weight, (Minimum)	30.5
3.	Magnesium (as Mg), percent by weight, (Maximum)	2.0
4.	Copper (as Cu), percent by weight, (Maximum)	0.1
5.	Lead (as Pb), percent by weight, (Maximum)	0.003
6.	Arsenic (as As), percent by weight (Maximum)	0.001
7.	Cadmium (as Cd), percent by weight (Maximum)	0.002
8.	Cobalt (as Co), percent by weight (Maximum)	0.002
9.	Mercury (as Hg), percent by weight (Maximum)	0.0002
10.	Nickle (as Ni), percent by weight (Maximum)	0.002

5. COPPER SULPHATE ($CuSO_4.5H_2O$) 24%

Sr. No.	Characteristics	Requirement
1.	Insoluble contents percent by weight (Maximum)	1.0
2.	Total Copper (as Cu), percent by weight, (Minimum)	24.0
3.	Lead (as Pb), percent by weight, (Maximum)	0.003
4.	Arsenic (as As), percent by weight (Maximum)	0.001
5.	Cadmium (as Cd), percent by weight (Maximum)	0.002
6.	Cobalt (as Co), percent by weight (Maximum)	0.002
7.	Mercury (as Hg), percent by weight (Maximum)	0.0002
8.	Nickle (as Ni), percent by weight (Maximum)	0.002

6. FERROUS SULPHATE ($FeSO_4$) 19%

Sr. No.	Characteristics	Requirement (%)
1.	Insoluble contents percent by weight (Maximum)	1.0
2.	Total Iron (as Fe^{**}), content percent by weight (Minimum)	19.0
3.	Ferric (Fe^{**}), content percent by weight, (Maximum)	0.5
4.	Lead (as Pb), percent by weight, (Maximum)	0.003
5.	Arsenic (as As), percent by weight (Maximum)	0.001
6.	Cadmium (as Cd), percent by weight (Maximum)	0.002
7.	Cobalt (as Co), percent by weight (Maximum)	0.002
8.	Mercury (as Hg), percent by weight (Maximum)	0.0002
9.	Nickle (as Ni), percent by weight (Maximum)	0.002

7. **AMMONIUM MOLYBEDATE (Mo) 52%**

Sr. No.	Characteristics	Requirement (%)
1.	Insoluble contents percent by weight (Maximum)	1.0
2.	Total Molybdenum (as Mo), percent by weight (Minimum)	52.0
3.	Lead (as Pb), percent by weight, (Maximum)	0.003
4.	Arsenic (as As), percent by weight (Maximum)	0.001
5.	Cadmium (as Cd), percent by weight (Maximum)	0.002
6.	Cobalt (as Co), percent by weight (Maximum)	0.002
7.	Mercury (as Hg), percent by weight (Maximum)	0.0002
8.	Nickle (as Ni), percent by weight (Maximum)	0.002

8. **BORIC ACID (H_3BO_3) 17%**

Sr. No.	Characteristics	Requirement (%)
1.	Insoluble contents percent by weight (Maximum)	1.0
2.	Total Boron (as B), content percent by weight (Minimum)	17.0
3.	Lead (as Pb), percent by weight, (Maximum)	0.003
4.	Arsenic (as As), percent by weight (Maximum)	0.001
5.	Cadmium (as Cd), percent by weight (Maximum)	0.002
6.	Cobalt (as Co), percent by weight (Maximum)	0.002
7.	Mercury (as Hg), percent by weight (Maximum)	0.0002
8.	Nickle (as Ni), percent by weight (Maximum)	0.002

9. **BORAX (DISODIUM OCTABORATE TETRAHYDRATE) 20%**

Sr. No.	Characteristics	Requirement (%)
1.	Insoluble contents percent by weight (Maximum)	1.0
2.	Total Boron content percent by weight (Minimum)	20.0
3.	Lead (as Pb), percent by weight, (Maximum)	0.003
4.	Arsenic (as As), percent by weight (Maximum)	0.001
5.	Cadmium (as Cd), percent by weight (Maximum)	0.002
6.	Cobalt (as Co), percent by weight (Maximum)	0.002
7.	Mercury (as Hg), percent by weight (Maximum)	0.0002
8.	Nickle (as Ni), percent by weight (Maximum)	0.002

10. **BORAX (DISODIUM TETRABORATE PENTAHYDRATE) 14%**

Sr. No.	Characteristics	Requirement (%)
1.	Insoluble contents percent by weight (Maximum)	1.0
2.	Total Boron content percent by weight (Minimum)	14.0
3.	Lead (as Pb), percent by weight, (Maximum)	0.003
4.	Arsenic (as As), percent by weight (Maximum)	0.001
5.	Cadmium (as Cd), percent by weight (Maximum)	0.002
6.	Cobalt (as Co), percent by weight (Maximum)	0.002
7.	Mercury (as Hg), percent by weight (Maximum)	0.0002
8.	Nickle (as Ni), percent by weight (Maximum)	0.002

11. **BORAX (SODIUM PENTABORATE OCTAHYDRATE) 16%**

Sr. No.	Characteristics	Requirement (%)
1.	Insoluble contents percent by weight (Maximum)	1.0
2.	Total Boron content percent by weight (Minimum)	16.0
3.	Lead (as Pb), percent by weight, (Maximum)	0.003
4.	Arsenic (as As), percent by weight (Maximum)	0.001
5.	Cadmium (as Cd), percent by weight (Maximum)	0.002
6.	Cobalt (as Co), percent by weight (Maximum)	0.002
7.	Mercury (as Hg), percent by weight (Maximum)	0.0002
8.	Nickle (as Ni), percent by weight (Maximum)	0.002

12. **BORAX (DISODIUM TETRABORATE DECAHYDRATE) 10.5%**

Sr. No.	Characteristics	Requirement (%)
1.	Insoluble contents percent by weight (Maximum)	1.0
2.	Total Boron content percent by weight (Minimum)	10.5
3.	Lead (as Pb), percent by weight, (Maximum)	0.003
4.	Arsenic (as As), percent by weight (Maximum)	0.001
5.	Cadmium (as Cd), percent by weight (Maximum)	0.002
6.	Cobalt (as Co), percent by weight (Maximum)	0.002
7.	Mercury (as Hg), percent by weight (Maximum)	0.0002
8.	Nickle (as Ni), percent by weight (Maximum)	0.002

CHELATED MICRONUTRIENTS

13. **CHELATED ZINC AS Zn-EDTA 5%**

Sr. No.	Characteristics	Requirement (%)
1.	Appearance: Free flowing Crystalline / Powder/Granular	
2.	Zinc content (expressed as Zn), percent by weight minimum in the form of Zn-EDTA	5.0
3.	Lead (as Pb), percent by weight	0.003
4.	Arsenic (as As), percent by weight (Maximum)	0.001
5.	Cadmium (as Cd), percent by weight (Maximum)	0.002
6.	Cobalt (as Co), percent by weight (Maximum)	0.002
7.	Mercury (as Hg), percent by weight (Maximum)	0.0001
8.	Nickle (as Ni), percent by weight (Maximum)	0.002

14. **CHELATED IRON AS Fe-EDTA 12%**

Sr. No.	Characteristics	Requirement (%)
1.	Appearance: Free flowing Crystalline / Powder	
2.	Iron content (expressed as Fe), percent by weight minimum in the form of Fe-EDTA	12.0
3.	Lead (as Pb), percent by weight	0.003
4.	Arsenic (as As), percent by weight (Maximum)	0.001
5.	Cadmium (as Cd), percent by weight (Maximum)	0.002
6.	Cobalt (as Co), percent by weight (Maximum)	0.002
7.	Mercury (as Hg), percent by weight (Maximum)	0.0001
8.	Nickle (as Ni), percent by weight (Maximum)	0.002

- Method of preparation / chelation shall be provided by the applicant alongwith Application for registration

15. SINGLE SUPER PHOSPHATE (14% P_2O_5 Powder)

Sr. No.	Characteristics	Requirement (%)
1.	Water + Citrate soluble phosphate (P_2O_5) percent by weight (Minimum)	14.0
2.	Sulphur as (SO_4^-), Minimum	34.0
3.	Moisture percent by weight, (Maximum)	10.0
4.	Arsenic (as As), percent by weight (Maximum)	0.001
5.	Cadmium (as Cd), percent by weight (Maximum)	0.002
6.	Cobalt (as Co), percent by weight (Maximum)	0.002
7.	Mercury (as Hg), percent by weight (Maximum)	0.0001
8.	Nickle (as Ni), percent by weight (Maximum)	0.002

16. WASTE COMPOST / MANURE

Sr. No.	Characteristics	Requirement (%)
1.	Organic Matter (minimum)	40.0
2.	Nitrogen as N (minimum)	0.6
3.	Phosphorous as P2O5	0.5
4.	Potassium as K2O (minimum)	0.084
5.	Lead (Pb) maximum	0.0001
6.	Nickle (Ni) maximum	0.0001
7.	Cadmium (Cd) maximum	0.0001
8.	Chromium (Cr) maximum	0.300
9.	Arsenic (as As), percent by weight (Maximum)	0.0006

17. NAPTHYLE ACETIC ACID (4.1– 4.8% w/v)

Sr. No.	Specifications	
1.	Appearance	A clean bright solution usually not more intensely colored than N/20 Iodine but may be slightly brownish or greenish
2.	pH	Between 6.0 & 8.0
3.	Density (20°C g/ml)	1.025 g
4.	Odour	Not more than very slight
5.	Nekal Bx	About 3% w/v

18. MEPIQUATE CHLORIDE (5% SL w/v)

Sr. No.	Specifications	
1.	Appearance	A white viscous liquid
2.	pH	4.0
3.	Density (20°C g/ml)	1.05
4.	Odour	Not more than very slight
5.	Suspensibility	71%

19. CYCLANILIDE + MEPIQUATE CHLORIDE (2.15% + 8.4% w/w)

Sr. No.	Specifications	
1.	Appearance	A white viscous liquid
2.	pH	4.0 – 4.5
3.	Density (20°C g/ml)	1.05
4.	Odour	Not more than very slight
5.	Suspensibility	71%

The following are also notified for information/observance of all stakeholders:-

- All sort of fertilizer material for foliar application including NPK will not be standardized/registered. However, the existing compound products registered for foliar / soil application may sell out their existing stocks upto 31 Dec 07.

- The fertilizer products on single nutrient base have been recommended , whereas , the farmers intending to use more than one nutrients can prepare a tank mix of the products as per their requirements.

- The manufacturing units for the waste compost/manure must be equipped with magnets to detect/separate heavy metals from the solid waste.

SECRETARY TO GOVERNMENT OF THE PUNJAB, AGRICULTURE DEPARTMENT

NO. & DATE EVEN:

Copy forwarded for information & necessary action to the :-

1. Chief Secretary, Government of the Punjab, Lahore
2. Principal Secretary to Chief Minister, Punjab, Lahore
3. Secretary to Governor, Punjab, Lahore
4. Secretary, Government of the Punjab, Law and Parliamentary Affairs Department, Lahore
5. Secretary, Government of the Punjab, Industries, Commerce & Investment Department, Government of the Punjab, Lahore.
6. Director General Agri. (Ext. & AR) Punjab, Lahore
7. Director General Agri. (Research) AARI, Faisalabad
8. Director, Rapid Soil Fertility Survey & Soil Testing Institute, Punjab, Lahore
9. Director of Agriculture, Adaptive Research, Lahore
10. Director General, National Agricultural Research Center, Islamabad
11. Directors of the Research Institutes designated for conducting trials.
12. Superintendent Government Printing Press Lahore with the request to publish this Notification in the next extra-ordinary gazette of the Punjab.

(AFTAB AHMAD SHEIKH)
SECTION OFFICER (EXTENSION)

Director Extn. Soil Fertility Survey
Agri. Punjab Lahore.
Receipt No. 1954
Date. 19-03-09

GOVERNMENT OF THE PUNJAB
AGRICULTURE DEPARTMENT
Dated Lahore, the 13.3.09

NOTIFICATION

SOA(Ext.)1-70/2006(FCO): Under the provisions of Clause 18 sub-clause (5) of Punjab Fertilizer (Control) Order, 1973 and in continuation of this department No. SOA(Ext.)1-70/2006(FCO) dated 7th August, 2007 the following products along with contents of active ingredients and permissible concentration of toxicates are hereby notified for registration.

CATEGORY / PRODUCT / CHARACTERISTICS	Requirements (%)
A. SINGLE ELEMENT FORMULATIONS	
1. Zinc Inorganic (Liquid)	
Insoluble contents percent by weight, (Less than)	1.00
Total Zinc content percent by weight (Minimum)	10.00
Magnesium (as Mg), percent by weight, (Maximum)	0.25
Lead (as Pb), percent by weight, (Maximum)	0.002
Arsenic (as As), percent by weight (Maximum)	0.0005
Cadmium (as Cd), percent by weight (Maximum)	0.001
Cobalt (as Co), percent by weight (Maximum)	0.001
Mercury (as Hg), percent by weight (Maximum)	0.0001
Nickle (as Ni), percent by weight (Maximum)	0.001
2. Zinc Liquid (Chelated)	
Insoluble contents percent by weight, (Less than)	1.00
Total Zinc chelated content percent by weight (Minimum)	6.00
Magnesium (as Mg), percent by weight, (Maximum)	0.125
Lead (as Pb), percent by weight, (Maximum)	0.001
Arsenic (as As), percent by weight (Maximum)	0.002
Cadmium (as Cd), percent by weight (Maximum)	0.0005
Cobalt (as Co), percent by weight (Maximum)	0.0005
Mercury (as Hg), percent by weight (Maximum)	0.00005
Nickle (as Ni), percent by weight (Maximum)	0.0005
3. Iron Chelated (Liquid)	
Insoluble contents percent by weight, (Less than)	1.00
Total Iron chelated content percent by weight (Minimum)	4.00
Ferric (as Fe^{+++}), percent by weight, (Maximum)	0.50
Lead (as Pb), percent by weight, (Maximum)	0.0006
Arsenic (as As), percent by weight (Maximum)	0.0002
Cadmium (as Cd), percent by weight (Maximum)	0.0004
Cobalt (as Co), percent by weight (Maximum)	0.0004
Mercury (as Hg), percent by weight (Maximum)	0.0001
Nickle (as Ni), percent by weight (Maximum)	0.0004
4. Iron Chelated (Solid)	
Insoluble contents percent by weight, (Less than)	1.00
Total Iron chelated content percent by weight (Minimum)	5.00
Ferric (as Fe^{+++}), percent by weight, (Maximum)	0.125
Lead (as Pb), percent by weight, (Maximum)	0.0008
Arsenic (as As), percent by weight (Maximum)	0.0003
Cadmium (as Cd), percent by weight (Maximum)	0.0005
Cobalt (as Co), percent by weight (Maximum)	0.0005
Mercury (as Hg), percent by weight (Less than)	0.0001
Nickle (as Ni), percent by weight (Maximum)	0.0005

5. Manganese Inorganic (Liquid)	
Insoluble contents percent by weight, (Less than)	1.00
Total Manganese content percent by weight (Minimum)	10.00
Lead (as Pb), percent by weight, (Maximum)	0.001
Arsenic (as As), percent by weight (Maximum)	0.0003
Cadmium (as Cd), percent by weight (Maximum)	0.0006
Cobalt (as Co), percent by weight (Maximum)	0.0006
Mercury (as Hg), percent by weight (Maximum)	0.0006
Nickle (as Ni), percent by weight (Maximum)	0.0006
6. Manganese Chelated (Liquid)	
Insoluble contents percent by weight, (Less than)	1.00
Total Manganese chelated content percent by weight (Minimum)	5.00
Lead (as Pb), percent by weight, (Maximum)	0.0005
Arsenic (as As), percent by weight (Maximum)	0.0002
Cadmium (as Cd), percent by weight (Maximum)	0.0003
Cobalt (as Co), percent by weight (Maximum)	0.0003
Mercury (as Hg), percent by weight (Maximum)	0.00003
Nickle (as Ni), percent by weight (Maximum)	0.0003
7. Manganese Chelated (Solid)	
Insoluble contents percent by weight, (Less than)	1.00
Total Manganese chelated content percent by weight (Minimum)	6.00
Lead (as Pb), percent by weight, (Maximum)	0.0005
Arsenic (as As), percent by weight (Maximum)	0.0002
Cadmium (as Cd), percent by weight (Maximum)	0.0003
Cobalt (as Co), percent by weight (Maximum)	0.0003
Mercury (as Hg), percent by weight (Maximum)	0.00003
Nickle (as Ni), percent by weight (Maximum)	0.0003
8. Copper Inorganic (Liquid)	
Insoluble contents percent by weight, (Less than)	1.00
Total Copper content percent by weight (Minimum)	8.00
Lead (as Pb), percent by weight, (Maximum)	0.001
Arsenic (as As), percent by weight (Maximum)	0.0003
Cadmium (as Cd), percent by weight (Maximum)	0.0007
Cobalt (as Co), percent by weight (Maximum)	0.0007
Mercury (as Hg), percent by weight (Maximum)	0.00001
Nickle (as Ni), percent by weight (Maximum)	0.0007
9. Copper Liquid (Chelated)	
Insoluble contents percent by weight, (Less than)	1.00
Total Copper (as Cu) chelated content percent by weight (Minimum)	5.00
Lead (as Pb), percent by weight, (Maximum)	0.0006
Arsenic (as As), percent by weight (Maximum)	0.0002
Cadmium (as Cd), percent by weight (Maximum)	0.0004
Cobalt (as Co), percent by weight (Maximum)	0.0004
Mercury (as Hg), percent by weight (Maximum)	0.00001
Nickle (as Ni), percent by weight (Maximum)	0.0004
10. Copper Solid (Chelated)	
Insoluble contents percent by weight, (Less than)	1.00
Total Copper (as Cu) chelated content percent by weight (Minimum)	6.00
Lead (as Pb), percent by weight, (Maximum)	0.0007
Arsenic (as As), percent by weight (Maximum)	0.0003
Cadmium (as Cd), percent by weight (Maximum)	0.0005
Cobalt (as Co), percent by weight (Maximum)	0.0005
Mercury (as Hg), percent by weight (Maximum)	0.00005

Nickle (as Ni), percent by weight (Maximum)	0.005
B. MULTI MICRONUTRIENT FORMULATIONS	
11. Boron Inorganic (Liquid)	
Insoluble contents percent by weight, (Less than)	1.00
Total Boron content percent by weight (Minimum)	5.00
Magnesium (as Mg), percent by weight, (Maximum)	0.25
Lead (as Pb), percent by weight, (Maximum)	0.002
Arsenic (as As), percent by weight (Maximum)	0.0005
Cadmium (as Cd), percent by weight (Maximum)	0.001
Cobalt (as Co), percent by weight (Maximum)	0.001
Mercury (as Hg), percent by weight (Maximum)	0.0001
Nickle (as Ni), percent by weight (Maximum)	0.001
12. Boron Chelated (Liquid)	
Insoluble contents percent by weight, (Less than)	1.00
Total Boron chelated content percent by weight (Minimum)	2.00
Magnesium (as Mg), percent by weight, (Maximum)	0.125
Lead (as Pb), percent by weight, (Maximum)	0.001
Arsenic (as As), percent by weight (Maximum)	0.002
Cadmium (as Cd), percent by weight (Maximum)	0.0005
Cobalt (as Co), percent by weight (Maximum)	0.0005
Mercury (as Hg), percent by weight (Maximum)	0.00005
Nickle (as Ni), percent by weight (Maximum)	0.0005
13. Multi Micronutrient Inorganic (Solid)	
Insoluble contents percent by weight, (Less than)	1.00
Total of all micronutrient content percent by weight (Minimum) (individual nutrient contents minimum 1%)	10.00
Lead (as Pb), percent by weight, (Maximum)	0.002
Arsenic (as As), percent by weight (Maximum)	0.0005
Cadmium (as Cd), percent by weight (Maximum)	0.001
Cobalt (as Co), percent by weight (Maximum)	0.001
Mercury (as Hg), percent by weight (Maximum)	0.0001
Nickle (as Ni), percent by weight (Maximum)	0.001
14. Multi Micronutrient Inorganic (Liquid)	
Insoluble contents percent by weight, (Less than)	1.00
Total of all micronutrient content percent by weight (Minimum) (Individual nutrient contents minimum 1%)	10.00
Lead (as Pb), percent by weight, (Maximum)	0.002
Arsenic (as As), percent by weight (Maximum)	0.0005
Cadmium (as Cd), percent by weight (Maximum)	0.001
Cobalt (as Co), percent by weight (Maximum)	0.001
Mercury (as Hg), percent by weight (Maximum)	0.0001
Nickle (as Ni), percent by weight (Maximum)	0.001
15. Multi Micronutrient Chelated (Liquid)	
Insoluble contents percent by weight, (Less than)	1.00
Total Zn, Fe & B chelated content percent by weight (Minimum)	6.00
Lead (as Pb), percent by weight, (Maximum)	0.001
Arsenic (as As), percent by weight (Maximum)	0.0002
Cadmium (as Cd), percent by weight (Maximum)	0.0005
Cobalt (as Co), percent by weight (Maximum)	0.0005
Mercury (as Hg), percent by weight (Maximum)	0.00005
Nickle (as Ni), percent by weight (Maximum)	0.0005
16. Multi Micronutrient Chelated (Solid)	
Insoluble contents percent by weight, (Less than)	1.00
Total Zn, Fe & B chelated content percent by weight (Minimum)	6.00

Lead (as Pb), percent by weight, (Maximum)	0.001
Arsenic (as As), percent by weight (Maximum)	0.0002
Cadmium (as Cd), percent by weight (Maximum)	0.0005
Cobalt (as Co), percent by weight (Maximum)	0.0005
Mercury (as Hg), percent by weight (Maximum)	0.00005
Nickle (as Ni), percent by weight (Maximum)	0.0005
C. MACRONUTRIENTS AND THEIR MIXTURE	
17. NPK solid for Foliar Use	
Insoluble contents percent by weight, (Less than)	1.00
Total N, P_2O_5 & K_2O content percent by weight (Minimum) respectively	8-8-6
Biuret percent by weight, (Maximum)	0.5
Chloride (as Cl), percent by weight, (Maximum)	1.00
Sodium (as NaCl), percent by weight, (Maximum)	1.00
18. NPK liquid for Foliar Use	
Insoluble contents percent by weight, (Less than)	1.00
Total N, P_2O_5 & K_2O content percent by weight (Minimum) respectively	8-8-6
Biuret percent by weight, (Maximum)	0.5
Chloride (as Cl), percent by weight, (Maximum)	1.00
Sodium (as NaCl), percent by weight, (Maximum)	1.00
19. Nitrogen (N) liquid fertilizer for fertigation	
Insoluble contents percent by weight, (Less than)	1.00
Total Nitrogen (N) content percent by weight (Minimum)	20.00
Biuret percent by weight, (Maximum)	0.50
20. Phosphorus (P) liquid fertilizer for fertigation	
Insoluble contents percent by weight, (Less than)	1.00
Total Phosphate (as P_2O_5) content percent by weight (Minimum)	20.00
21. Potash (K) liquid fertilizer for fertigation	
Insoluble contents percent by weight, (Less than)	1.00
Total Potassium content percent by weight (Minimum)	30.00
Sodium (as NaCl), percent by weight, (Maximum)	1.00
22. Compound of NPK liquid for fertigation	
Insoluble contents percent by weight, (Less than)	1.00
Total N, P_2O_5 & K_2O content percent by weight (Minimum)	30.00
Biuret percent by weight, (Maximum)	0.50
Sodium (as NaCl), percent by weight, (Maximum)	1.00
23. Water soluble NP for drip irrigation	
Insoluble contents percent by weight, (Less than)	1.00
Total N & P_2O_5 content percent by weight (Minimum)	20.00
Biuret percent by weight, (Maximum)	0.50
24. Water soluble NK for drip irrigation	
Insoluble contents percent by weight, (Less than)	1.00
Total N & K_2O content percent by weight (Minimum)	20.00
Biuret percent by weight, (Maximum)	0.50
Sodium (as NaCl), percent by weight, (Maximum)	1.00
25. Water soluble PK for drip irrigation	
Insoluble contents percent by weight, (Less than)	1.00
Total P_2O_5 & K_2O content percent by weight (Minimum)	20.00
Sodium (as NaCl), percent by weight, (Maximum)	1.00
26. Water soluble NBK for drip irrigation	
Insoluble contents percent by weight, (Less than)	1.00
Total N, P_2O_5 & K_2O content percent by weight (Minimum)	30.00
Biuret percent by weight, (Maximum)	0.5
Sodium (as NaCl), percent by weight, (Maximum)	1.00

D. HUMATES / HUMIC ACIDS	
27. Humic acid solid	
Humic Acid content percent by weight (Minimum)	50.00
Colour	Brown to Black
Molecular weight	5000 – 100000
Ph	6 – 10
28. Humic acid liquid	
Humic Acid content percent by weight (Minimum)	8.00
Colour	Light brown to light black
Molecular weight	5000 – 100000
pH	6 – 10
E. PLANT GROWTH REGULATORS (PGRs)	
29. Chlormequart Chloride	
Chlormequart Chloride	50.00
30. Paclobutrazol	
Paclobutrazol	2.50
31. Complex / blend of Plant Growth Regulators and Amino acids. On label manufacturers are required to conspicuously declare the active ingredients, their ratio, mode of action, specific crop and its growth stage at which to be applied.	

The following terms and conditions are also notified for compliance by all the applicants of registration:

1. All the proposed standard of foliar and fertigation products are declared as crop supplement and required to be mentioned prominently on the label.
2. In foliar and fertigation products active ingredients as gm/liter shall be mentioned prominently on the label.
3. The composition of Plant Growth Regulator (PGR) shall be prominently elaborated on label along with concentration, target crop and growth stage to be recommended.
4. Already issued Provisional licences of different products, the concentration and ratio of active ingredients shall have to be amended as per notified product within ninety days after issuance of notification.
5. Container / packing size shall also be modified as and when Agriculture Department will notify the dose of specific product.
6. The product recipe over and above this minimal standard will go in to Standard Scrutiny Committee which may recommend it for notification by the Government of the Punjab, Agriculture Department.
7. The Standards Scrutiny Committee (SSC) shall meet to consider applications for registration of over and above recipes given as minimum standards within 30days of receipt of application.
8. The standard fertilizer means, the mixture or single nutrient of fertilizers whether of solid or liquid fertilizer shall conform to the standards set out in the notification issued by the Government of the Punjab, Agriculture Department.
9. Minimum standard shall mean the minimum guaranteed concentration as per minimum standard notified by the Government of the Punjab, Agriculture Department.
10. Any fertilizer shall meet concentration set out in registration certificate as minimum standard .

SECRETARY TO GOVERNMENT OF THE PUNJAB
AGRICULTURE DEPARTMENT, LAHORE

NO. & DATE EVEN:

Copy forwarded for information & necessary action to the:

1. Chief Secretary, Government of the Punjab, Lahore
2. Principal Secretary to Chief Minister, Punjab, Lahore
3. Secretary to Governor, Punjab, Lahore
4. Secretary, Government of the Punjab, Law and Parliamentary Affairs Deptt. Lahore
5. Secretary, Government of the Punjab, Industries, Commerce & Investment Deptt., Lahore
6. Director General Agri. (Ext. AR) Punjab, Lahore
7. Director General Agri. (Research), AARI, Faisalabad
8. Director Rapid Soil Fertility Survey & Soil Testing Institute, Punjab, Lahore
9. Director of Agriculture, Adaptive Research, Lahore
10. Director General, National Agricultural Research Center, Islamabad
11. Superintendent Government Printing Press Lahore with the request to public this Notification in the next extra-ordinary gazette of the Punjab

SECTION OFFICER (EXTENSION)

CC:
PS to Secretary Agriculture

Mr. Shaheen

Director Rapid Soil Fertility Survey
No. 3856
Dated 8-6-09
Punjab Lahore

SSP

GOVERNMENT OF THE PUNJAB,
AGRICULTURE DEPARTMENT
Dated Lahore, the 27-5-2009.

NOTIFICATION

NO. SOA (EXT) 1-70/2006 (FCO): Under the provisions of clause 18 of the Punjab Fertilizers (Control) Order, 1973 (amended) following minimum requirements are standardized / notified for adequate processing and proper manufacturing of SSP (14% P_2O_5).

1. PRODUCTION METHOD

i. Finely ground phosphate rock → mixed with sulphuric acid, (0.6 kg H_2SO_4 for 1 kg rock).
   - Mixer with cutters for homogenized mixing of rock and acid (already diluted to 70%) or
   - In cone mixer the water may be added separately along with sulphuric acid.

ii. Product is removed from mixer or den and placed as batch of each date.

iii. Curing → requires 2 – 3 weeks. Depend on raw material and condition of manufacturing.

iv. Granulation if required.

2. INFRASTRUCTURE

i. Acid Dilution System
   a. Storage tanks of acid.
   b. Acid cooling system.
   c. Storage of diluted acid.
   d. Record of acid purchased.

ii. Connection of Acid Supply to Mixer or den and process involved
   a. Den or mixer to mix acid with grinded rock phosphate.
   b. Presence of cutter in the mixer to mix / rotate rock within den for homogenous mixing with acid.
   c. Curing space for batches of rock mixed with acid for completion of reaction.

iii. Exhaust system properly attached with reaction mixer or den to save worker and environment from harmful fumes of acid and reaction process.

3. QUALITY ASSURANCE

i. Method of analysis with required equipment, chemical and glassware

   a. Titration Method: PSI No. 67:1976(UDC 631.85)

   - Equipment → Balance, Burette, Conical flasks, pipettes, Burner, volumetric flask (100+500 or 250 ml).
   - Chemicals→ Ammonium Nitrate, Nitric Acid and Ammonium Molybedate, Citric Acid, Sodium Hydro- Oxide, Sulphuric Acid, Thalic Acid and Phenolphthalein.

   b. Spectrophotometeric Method: Tandon, H.L.S. 1993 Methods of analysis of soils, plants, waters and fertilizer.

   - Equipment→ same as i(a) with addition of Spectrophotometer
   - Chemical→ Antamony Tartrate, Ammonium Molybedate, Ammonium Vanadate, Nitric Acid, Potassium dihydrogen phosphate.

ii. Chemist would be at least B.Sc. (Chemistry).

DOCUMENTATION / RECORD MAINTENANCE

i. Inventory of rock phosphate
ii. Inventory of SSP prepared.
iii. Inventory of staff
iv. Analysis record of rock phosphate and prepared SSP

5. MISCELLANEOUS

i. SSP 14% P_2O_5 would be packed in blue color bags for its discrimination from SSP 18% P_2O_5.
ii. No compromise would be made regarding the quality of products and in case of any lapse in quality the management of manufacturing plant would also be held responsible.
iii Already registered manufacturers / plants would fulfill the bare minimum requirement of plant and laboratory (equipment, glass-wears and chemicals) within 60 days.
iv. Inventory of production would be maintained by the manufacturers of SSP and supplied to Director General Agri. (Ext. & AR) on daily basis.

SECRETARY TO GOVERNMENT OF THE PUNJAB
AGRICULTURE DEPARTMENT, LAHORE

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4. Secretary, Government of the Punjab, Law and Parliamentary Affairs Deptt, Lahore
5. Secretary, Government of the Punjab, Industries, Commerce & Investment Deptt., Lahore
6. Director General Agri. (Ext. AR) Punjab, Lahore
7. Director General Agri. (Research), AARI, Faisalabad
8. Director Rapid Soil Fertility Survey & Soil Testing Institute, Punjab, Lahore
9. Director of Agriculture, Adaptive Research, Lahore
10. Director General, National Agricultural Research Center, Islamabad
11. Superintendent Government Printing Press Lahore with the request to public this Notification in the next extra-ordinary gazette of the Punjab

SECTION OFFICER (EXTENSION)

CC:
PS To Secretary Agricultural

NO: 17660 /Tech/F-3 Dt: Fsd;the 24/6/09

Copy forwarded to the Director, Rapid Soil Fertility Survey and Soil Testing Institute, Lahore for information and further necessary action.

DIRECTOR AGRICULTURE(RESEARCH)
FOR D.G.A(R) AARI FAISALABAD.

3232
11-6-11

GOVERNMENT OF THE PUNJAB
AGRICULTURE DEPARTMENT
Dated Lahore, the 7.6.2011

NOTIFICATION

SOA (Ext.) 1-70/2006 (FCO). Under the provisions of Clause 18 sub-clause (5) of Punjab Fertilizer (Control) Order, 1973 the following specifications of Bio-fertilizers/Inoculants along with given standard requirements are hereby notified for registration.

1. Specifications for Rhizobium

Sr.	Characteristics	Requirement
1.	Base	Carrier based or liquid based(to be specified)
2.	Viable cells count	Colony Farming Unit (CFU) minimum 10^7 cells/g of carrier material or 10^7 cell/ml of liquid material
3.	Contamination Level	No Contamination at 10^5 dilution
4.	pH	6.5 - 8.5
5.	Particles size in case of carrier based material	All material shall pass through 0.15 - 0.212 mm IS sieve
6.	Moisture percent by weight, maximum in case of carrier based	20 - 40%
7.	Shelf life	90 days and within last 15 days of expiry date the viable cells count shall not be less than one million cells/g and one million cells/ml for carrier based and liquid based product, respectively.
8.	Efficiency character	There should be 50% increase in dry wt of nodules in treated plants

2. Specifications for Azotobacter and Azospirillum

Sr.	Characteristics	Requirement
1.	Base	Carrier based or liquid based(to be specified)
2.	Viable cells count	CFU minimum 10^7 cells/g of carrier material or 10^7 cell/ml of liquid material
3.	Contamination Level	No Contamination at 10^5 dilution
4.	pH	6.5 - 8.5
5.	Particles size in case of carrier based material	All material shall pass through 0.15 - 0.212 mm IS sieve
6.	Moisture percent by weight, maximum in case of carrier based	20 - 40%
7.	Shelf life	90 days and within last 15 days of expiry date the viable cells count shall not be less than one million cells/g and one million cells/ml for carrier based and liquid based product, respectively.
8.	Efficiency character	The strain should be capable of fixing at least 10mg of nitrogen per g of carbon source consumed

14/06

3. Specifications for Phosphorus Solubilizing Bacteria(PSB)

Sr.	Characteristics	Requirement
1.	Base	Carrier based or liquid based(to be specified)
2.	Viable cells count	CFU minimum 10^7 cells/g of carrier material or 10^7 cell/ml of liquid material
3.	Contamination Level	No Contamination at 10^5 dilution
4.	pH	6.5 - 8.5
5.	Particles size in case of carrier based material	All material shall pass through 0.15 - 0.212 mm IS sieve
6.	Moisture percent by weight, maximum in case of carrier based	20 - 40%
7.	Shelf life	90 days and within last 15 days of expiry date the viable cells count shall not be less than one million cells/g and one million cells/ml for carrier based and liquid based product, respectively.
8.	Efficiency character	The strain should have phosphate solublizing capacity in the range of minimum 20%(out of total 500 ppm P2O5 minimum 100 ppm should be solubilized) when tested spectrophotometrically. In terms of Zone formation minimum 5mm solubilization zone in prescribed medial having at least 3mm thickness.

4. Specifications for Plant Growth Promoting Rhizobacteria (PGPR)

Sr.	Characteristics	Requirement
1.	Base	Carrier based or liquid based(to be specified)
2.	Viable cells count	CFU minimum 10^7 cells/g of carrier material or 10^7 cell/ml of liquid material
3.	Contamination Level	No Contamination at 10^5 dilution
4.	pH	6.5 - 8.5
5.	Particles size in case of carrier based material	All material shall pass through 0.15 - 0.212 mm IS sieve
6.	Moisture percent by weight, maximum in case of carrier based	20 - 40%
7.	Shelf life	90 days and within last 15 days of expiry date the viable cells count shall not be less than one million cells/g and one million cells/ml for carrier based and liquid based product, respectively.
8.	Efficiency character	The inoculants should be capable of prom0oting root growth by at least 10%.

The following explanations, terms and conditions are also notified for compliance by all the applicants of registration.

1. "Biofertilizer" Biofertilizer means the product containing carrier based (solid or liquid) living mecroorganisms which are agriculturally useful in terms of nitrogen fixation, phosphorous solubilization, nutrient mobilization or plant growth promotion to increase the productivity of the soil and/or crop.
2. Requirements – A product will be of appropriate quality if it fulfills its promise of functional performance within the given circumstances of its normal use and matches the manufacturer's claim.
3. The proposed standard Bio-Fertilizers and inoculants are declared as "crop supplements" and shall not be called or offered as substitute of fertilizers
4. The standard specifications of each Bio-Fertilizers and inoculants shall be labeled prominently on the bag or packing / container.
5. In case of carrier based Bio-Fertilizers, the carrier shall be duly specified.
6. In case of Plant Growth Promoting Rhizobacteria (PGPR) the target crop as well as growth stage of crop / plant shall be indicated clearly in the application for registration and on the label as well.

SECRETARY TO GOVERNMENT OF THE PUNJAB
AGRICULTURE DEPARTMENT

NO. & DATE EVEN:

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2. Principal Secretary to Chief Minister, Punjab, Lahore.
3. Secretary to Governor, Punjab, Lahore.
4. Secretary, Government of the Punjab, Law and Parliamentary Affairs Deptt. Lahore.
5. Secretary, Government of the Punjab, Industries, Commerce & Investment Deptt., Lahore.
6. Director General Agri. (Ext. AR) Punjab, Lahore.
7. Director General Agri. (Research), AARI, Faisalabad.
8. Director Rapid Soil Fertility Survey & Soil Testing Institute, Punjab, Lahore.
9. Director of Agriculture, Adaptive Research, Lahore.
10. Director General, National Agricultural Research Center, Islamabad.
11. Directors of Research Institutes designated for conducting trials. / Faisalabad.
12. Superintendent Government Printing Press Lahore with the request to publish this Notification in the next extra-ordinary gazette of the Punjab.

SECTION OFFICER (EXTENSION)

CC:

PS to Secretary Agriculture

GOVERNMENT OF THE PUNJAB
AGRICULTURE DEPARTMENT
Dated Lahore, the 26.8.2013

NOTIFICATION

SOA (Ext.) 1-70/2012(FCO): In continuation of this Department's earlier Notification of No. SOA (EXT)1-70/2006(FCO), dated 26.1.2008, the permissible percentage of toxic heavy metals for the Waste Compost is hereby amended as per following for registration without field trials.

16. WASTE COMPOST

Sr.#	Characteristics	Requirement(%)
1	Organic Matter (minimum)	25
2	Carbon to Nitrogen ratio (C:N)	<20:1
3	Cation Exchange Capacity (CEC)	>60 me $100g^{-1}$
4	Lead (Pb) maximum	0.0001
5	Nickle (Ni) maximum	0.0001
6	Cadmium (Cd) maximum	0.0001
7	Chromium (Cr) maximum	0.300
8	Arsenic (as As) percent by weight (maximum)	0.0006

Note: 1. Organic Matter containing product shall be called as compost only and the words "manure" shall be eliminated from the already notified standard.
2. The compost shall be odor less.
3. Soil shall not be used as filler in the compost.

SECRETARY TO GOVERNMENT OF THE PUNJAB
AGRICULTURE DEPARTMENT

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3. Secretary, Government of the Punjab, Industries, Commerce & Investment Deptt., Lahore.
4. Director General Agri. (Ext. AR) Punjab, Lahore.
5. Director General Agri. (Research), AARI, Faisalabad.
6. Director Rapid Soil Fertility Survey & Soil Testing Institute, Punjab, Lahore.
7. Director of Agriculture, Adaptive Research, Lahore.
8. Director General, National Agricultural Research Center, Islamabad.
9. Directors of Research Institutes designated for conducting trials.

SECTION OFFICER (EXTENSION)

CC:

1. PS to Secretary Agriculture
2. PA to Additional Secretary (Task Force), Agri. Deptt.

GOVERNMENT OF THE PUNJAB
AGRICULTURE DEPARTMENT
Dated: 17.06.2013

NOTIFICATION

NO.SOA(EXT)1-70/2012(FCO). In continuation of this department's earlier notification No. SOA(EXT)1-70/2006(FCO) dated 13.3.2009, as per decision of the meeting held on 13.12.2012, of Standard Scrutiny Committee following specifications of Amino Acid are hereby approved for registration without field trials under Punjab Fertilizer (Control) Order, 1973 (amended)..

i. Amino Acid in solid form (Minimum) = 40%
ii. Amino Acid in liquid form (Minimum) = 10%

SECRETARY TO GOVT. OF THE PUNJAB
AGRICULTURE DEPARTMENT

NO. &DATE EVEN:

A copy is forwarded for information and further necessary action to the:

1. PS to Chief Secretary Punjab
2. P|S to Minister for Agriculture
3. PS to Secretary, Industries, Commerce and Investment Deptt; Lahore
4. Vice Chancellor, University of Agriculture, Faisalabad.
5. Director General Agriculture (Ext & AR), Punjab Lahore
6. Director General Agriculture (Res), AARI, Faisalabad.
7. Chairman, Crop Life Pakistan, Karachi.
8. Chairman, PCPA, Lahore.

SECTION OFFICER (EXTENSION)

CC:

1. P.S. to Special Secretary, Agriculture Department.
2. PA to Additional Secretary (Admn)
3. PA to Additional Secretary (Planning)
4. PA to Additional Secretary (Task Force)

dated: 19-6-13

3642

21/6/13

GOVERNMENT OF THE PUNJAB
AGRICULTURE DEPARTMENT
Dated Lahore, The 5th Sept. 2014

NOTIFICATION

No.SOA (Ext)1-70/2012(FCO): In continuation of this department's earlier Notification No.SOA(Ext)1-70/2006(FCO), dated 17.06.2009, the following specifications of Potassium Humate / Humic acids are hereby approved for registration:

i. **Product Specifications**

Category / Product / Characteristics	Requirements (%)
Potassium Humate (Solid)	
Potassium (K_2O) (Minimum)	7.00
Humic Acid contents percent by weight (Minimum)	40.00
Colour	Brown to Black
Molecular weight	5000 - 100000
pH	6 - 9
Potassium Humate (Liquid)	
Potassium (K_2O) (Minimum)	3.50
Humic Acid contents percent by weight (Minimum)	10.00
Colour	Light Brown - Light Black
Molecular weight	5000 - 100000
pH	6 - 9

ii. **Raw Material**
- Lignite/ Leonardite (55-60%)
- Commercial potassium hydroxide
- Water (in case of liquid product)

iii. **Infrastructure**
- Storage tank for Potassium Hydro-oxide
- Stainless steel mixer tank (with capacity of 1.5 ton in case of solid & 1500 liters in case of liquid)
- Evaporator
- Granulator
- Agitator (in case of liquid product)

iv. **Quality Assurance System**

Lab. Apparatus
- Electronic analytical balance
- pH meter
- Oven
- Glass apparatus

v. **Method of Analysis**
- Humic acid by Gravimetric Method
- Potash by Flamephotometric method

vi. **Recommended Dose**
- The recommended dose is 20 kgs per hectare in solid form.
- The recommended dose is 10 liters per hectare in liquid form.

vii. **Packing**
- 8 Kg bag in solid form
- 4 Liters bottle in liquid form

viii. **Labeling**: The product shall be labeled as per provisions of FCO / label approved by the Provincial Scrutiny Committee.

Note: Following further information shall be printed conspicuously on the label:

i It is a soil conditioner and can increase yield upto 10% only.
ii It is not replacement / substitute of the fertilizers.
iii It contains Potassium & Humic Acid only.

ix. **Price:** As notified / fixed from time to time in consultation with controller of fertilizer.

x. **Output / Production:** Monthly production shall be conveyed to the department regularly.

xi. **Production Capacity:** Minimum 1000 kg per day in solid and 1000 liter per day in case of liquid form.

xii. **Firms Registration:** Firm should be registered as per companies' ordinance 1984 / concerned Registration Authorities Rules.

xiii. **Sales Tax Registration:** Having GST is mandatory.

SECRETARY TO GOVERNMENT OF THE PUNJAB
AGRICULTURE DEPARTMENT

NO & DATE EVEN:

A copy is forwarded for information and further necessary action to the:-

1. PS to Chief Minister, Punjab.
2. PS to Minister for Agriculture.
3. PS to Secretary, Industries, Commerce and Investment Deptt., Lahore.
4. Vice Chancellor, University of Agriculture, Faisalabad.
5. Director General Agri. (Research), AARI, Faisalabad.
6. Director General Agri. (Ext & AR), Punjab, Lahore.
7. Chairman, Crop Life Pakistan, Karachi
8. Chairman, PCPA, Lahore

5/9/14.
SECTION OFFICER (EXTENSION)

cc:

1. PS to Secretary, Agriculture Department.
2. PA to Additional Secretary (Task Force) Agriculture Department.
3. PA to Additional Secretary (Admn) Agriculture Department.
4. PA to Additional Secretary (Planning) Agriculture Department.

GOVERNMENT OF THE PUNJAB
AGRICULTURE DEPARTMENT
Dated Lahore, May 6, 2017

NOTIFICATION

No.AS (TF)2-20/2015: Under the provisions of clause 18, sub-clause (5) of Punjab Fertilizer (Control) Order, 1973, the specifications of NPK liquid for foliar use at Sr.No. 18 of this department's earlier Notification No.SOA (Ext)1-70/2006(FCO), dated 13.03.2009, are hereby revised and notified as under for registration:

Input / Product Specifications of NPK Liquid for Foliar Use (≥ 22% w/v)

i. Product Specifications

NPK solid for Foliar Use	Requirement (%)
Insoluble contents percent by weight	< 1.00
Total N, P_2O_5 & K_2O content percent by weight (Minimum) respectively	≥ 22 *
Biuret percent by weight, (Maximum)	0.5
Chloride (as Cl), percent by weight, (Maximum)	1.00
Sodium (as NaCl), percent by weight, (Maximum)	1.00

* NPK with ratio as 4:4:3 respectively

ii. Raw Material

- Potassium Nitrate / Ammonium Nitrate / Nitric Acid / Urea
- Phosphoric Acid
- Potassium Hydroxide
- Water

iii. Infrastructure

- Stainless steel reactor with agitator (2000 L capacity)

iv. Quality Assurance System

Lab. Apparatus

- Flame Photometer
- Ammonium ppt Method
- Kjeldhals Apparatus

- Electronic analytical balance
- Glass apparatus

v. **Method of Analysis**
- Flame Photometer Method for potassium analysis
- Ammonium ppt Method for phosphorous analysis
- Kjeldhals Method for nitrogen analysis

vi. **Recommended Dose**
- As per requirement for foliar application

vii. **Packing**
- 1, 2, 10, 25, 50, 200 liter

viii. **Labeling:** The product shall be labeled as per provisions of FCO / label approved by the Provincial Scrutiny Committee.

ix. **Price:** As notified / fixed from time to time in consultation with controller of fertilizer.
x. **Output / Production:** Monthly production shall be conveyed to the department regularly.
xi. **Production Capacity:** 2000 L per day
xii. **Firms Registration:** Firm should be registered as per companies ordinance 1984 / concerned Registration Authorities Rules.
xiii. **Sales Tax Registration.** Having GST is mandatory.
xiv. NOC of the consultant regarding plant machinery and environment department shall be mandatory.

SECRETARY TO GOVERNMENT OF THE PUNJAB
AGRICULTURE DEPARTMENT 06 May '17

NO & DATE EVEN:

A copy is forwarded for information and further necessary action to the:-

1. PS to Secretary, Industries, Commerce and Investment, Punjab.
2. Vice Chancellor, University of Agriculture, Faisalabad
3. Director General Agri. (Research), AARI, Faisalabad
4. Director General Agri. (Ext & AR), Punjab, Lahore
5. Director, Soil Fertility Punjab, Lahore
6. Chairman, Crop Life Pakistan, Karachi
7. Chairman, PCPA, Lahore
8. Manager, Government Printing Press, Punjab, Lahore.

Assistant Director (Task Force)

CC:
1. PO to Secretary, Agriculture Department, Punjab
2. PA to Additional Secretary (Task Force)
3. PS to Additional Secretary (Admn)
4. PA to Additional Secretary (Planning)

GOVERNMENT OF THE PUNJAB
AGRICULTURE DEPARTMENT
Dated Lahore, January10, 2018

NOTIFICATION

No.AS(TF)2-9/2016: under the provisions of clause 18, sub-clause (5) of Punjab Fertilizer (Control) Order, 1973 and in partial modification in the clause viii of this department's earlier Notification of even number dated 05.04.2017, the following specifications of Zinc Sulphate (Zn 27%) are hereby notified for registration:

Zinc Sulphate (Zn 27%)

i. Product Specifications

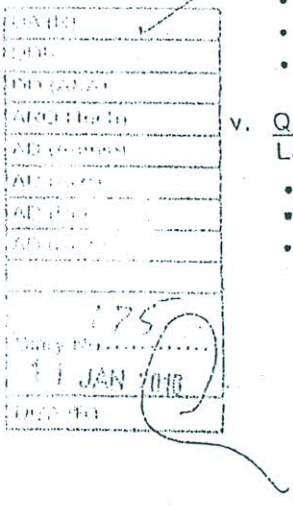
Sr. No.	Characteristics	Requirement (%)
1.	Insoluble contents percent by weight, (Maximum)	1.0
2.	Water soluble Zinc content percent by weight (Minimum)	27.0
3.	Magnesium (as Mg), percent by weight, (Maximum).	0.5
4.	Copper (as Cu), percent by weight, (Maximum)	0.1
5.	Lead (as Pb), percent by weight, (Maximum)	0.003
6.	Arsenic (as As), percent by weight (Maximum)	0.001
7.	Cadmium (as Cd), percent by weight (Maximum)	0.002
8.	Cobalt (as Co), percent by weight (Maximum)	0.002
9.	Mercury (as Hg), percent by weight (Maximum)	0.0002
10.	Nickle (as Ni), percent by weight (Maximum)	0.002

ii. Formula
$ZnSO_4.5H_2O$

iii. Raw Material
- Zinc ash (Zn 65%)
- Sulphuric Acid (98%)
- Water

iv. Infrastructure
- Acid storage tank
- Acid Resistant Reactor
- Stainless steel agitator
- Settler tank made of acid resistant material
- Vapor Scrubbing System
- Evaporator
- Hydro-separator
- Drying unit
- Filter press

v. Quality Assurance System
Lab. Apparatus
- Atomic Absorption Spectrophotometer / Colorimeter
- Electronic analytical balance
- Glass apparatus



vi. Method of Analysis
- Atomic Absorption Spectrophotometery / Colorimetric method

vii. Recommended Dose
- The recommended dose is 7.5 Kg/acre

viii. Packing
- In 3 Kg (minimum) plastic inner bags.

ix. Labeling: The product shall be labeled as per provisions of FCO / label approved by the Provincial Scrutiny Committee.

x. Price: As notified / fixed from time to time in consultation with controller of fertilizer.

xi. Output / Production: Monthly production shall be conveyed to the department regularly.

xii. Production Capacity: Minimum 1000 Kg per day

xiii. Firms Registration: Firm should be registered as per companies' ordinance 1984 / concerned Registration Authorities Rules.

xiv. Sales Tax Registration: Having GST is mandatory.

xv. NOC of the consultant regarding plant machinery and environment department shall be mandatory

SECRETARY TO GOVERNMENT OF THE
PUNJAB
AGRICULTURE DEPARTMENT

NO & DATE EVEN:

A copy is forwarded for information and further necessary action to the:-

1. PS to Secretary, Industries, Commerce and Investment Deptt., Lahore
2. Vice Chancellor, University of Agriculture, Faisalabad
3. Director General Agri. (Research), AARI, Faisalabad
4. Director General Agri. (Ext & AR), Punjab, Lahore
5. Chairman, Crop Life Pakistan, Karachi
6. Chairman, PCPA, Lahore
7. Manager, Government Printing Press, Punjab, Lahore

Assistant Director (Task Force)

cc:
1. PO to Secretary, Agriculture Department, Punjab
2. PA to Additional Secretary (Task Force)
3. PA to Additional Secretary (Admn.)
4. PS to Additional Secretary (Planning)

No. 1930 /Tech Dated: 16.01.2018

A copy is forwarded to the Director, Rapid Soil Fertility Survey and Soil Testing Institute, Lahore for information and further necessary action.

Director Agriculture (Research)
For DIRECTOR GENERAL AGRI. (RESEARCH)

GOVERNMENT OF THE PUNJAB
AGRICULTURE DEPARTMENT,
Dated Lahore, August 10, 2018

NOTIFICATION

NO. AS(TF)2-10/2015: Under the provisions of clause-18, sub-clause(5) of Punjab Fertilizer (Control) Order, 1973 and in continuation of this department's earlier Notification No.SOA(Ext)1-70/2006(FCO), dated 07.08.2007, the following specifications of Paclobutrazole (25%) are hereby notified for registration:

Paclobutrazole (25% w/v)

Product Specifications

- Paclobutrazole = 25% w/v

i. **Quality Assurance System**
Lab. Apparatus
- Gas Chromatography
- Weighing Balance

ii. **Method of Analysis**
- Gas Chromatography

iii. **Recommended Dose**
- 40 ml per plant for mango
- 25 ml per plant for other fruiting plants

iv. **Packing**
- 500 ml & 1000 ml

v. **Labeling**: The product shall be labeled as per provisions of FCO / label approved by the Provincial Scrutiny Committee.

vi. **Price**: As notified / fixed from time to time in consultation with controller of fertilizer.

vii. **Output / Production**: Monthly production shall be conveyed to the department regularly.

viii. **Production Capacity:** imported

ix. **Firms Registration:** Firm should be registered as per companies ordinance 1984 / concerned Registration Authorities Rules.

x. **Sales Tax Registration:** Having GST is mandatory.

xi. NOC of the consultant regarding plant machinery and environment department shall be mandatory.

SECRETARY TO GOVERNMENT OF THE PUNJAB
AGRICULTURE DEPARTMENT

P.T.O

NO & DATE EVEN:

A copy is forwarded for information and further necessary action to the:-

1. Vice Chancellor, University of Agriculture, Faisalabad
2. Director General Agri. (Research), AARI, Faisalabad
3. Director General Agri. (Ext & AR), Punjab, Lahore
4. Director Soil Fertility, Punjab, Lahore
5. Chairman, Crop Life Pakistan, Karachi
6. Chairman, PCPA, Lahore
7. Manager Government Printing Press, Punjab, Lahore
8. PS to Additional Secretary (Task Force)

Assistant Director (Task Force)

No. 9658-66 / Dated Lahore, the 20/8/18

Copy is forwarded for information and necessary action to the:

1. Agricultural Chemists, Soil and Water Testing Laboratory for Research, Lahore, Faisalabad, Multan, Bahawalpur, Sargodha, D.G Khan, Gujranwala and Rawalpindi.
2. Agricultural Chemist Provincial Reference Fertilizer Testing Laboratory, Raiwind

Director
Soil Fertility Punjab,
Lahore

7204
06-11-18

GOVERNMENT OF THE PUNJAB
AGRICULTURE DEPARTMENT
Dated Lahore, October 31, 2018

NOTIFICATION

NO. AS(TF)2-9/2016: Under the provisions of clause-18, sub-clause(5) of Punjab Fertilizer (Control) Order, 1973 and in partial modification of fertilizer standard at serial No. 16 of this department's earlier Notification No.SOA(Ext)1-70/2006(FCO), dated 13.03.2009, following specifications of Multi Micronutrient Chelated (Solid) 6% are hereby notified for registration:

Multi Micronutrient Chelated (Solid) 6%

i. Product Specifications

Multi Micronutrient Chelated (Solid) 6%	Requirement (%)
Insoluble contents percent by weight, (Less than)	1.00
Total Zn, Fe, Mn & Cu chelated content percent by weight (Min.)	**6.00**
Lead (as Pb), percent by weight, (Maximum)	0.001
Arsenic (as As), percent by weight (Maximum)	0.0002
Cadmium (as Cd), percent by weight (Maximum)	0.0005
Cobalt (as Co), percent by weight (Maximum)	0.0005
Mercury (as Hg), percent by weight (Maximum)	0.00005
Nickle (as Ni), percent by weight (Maximum)	0.0005

ii. Raw Material

- Zinc Sulphate
- Ferrous Sulphate
- Copper Sulphate
- Manganese Sulphate
- EDTA

iii. Infrastructure

- Acid Resistant Reactor (5000 L capacity)
- Stainless steel agitator (2000 Kg capacity)
- Settler tank made of acid resistant material (10 x 10 x 05 Ft^3 capacity)
- Vapor Scrubbing System
- Evaporator
- Hydro-separator
- Drying unit (2000 Kg Capacity)

iv. Quality Assurance System

Lab. Apparatus

- Atomic Absorption Spectrophotometer
- Electronic analytical balance
- Glass apparatus

v. Method of Analysis

- Atomic Absorption Spectrophotometery

vi. Recommended Dose

- The recommended dose is 5 Kg/acre

vii. **Packing**
- In 5 Kg plastic inner bags.

viii. **Labeling**: The product shall be labeled as per provisions of FCO / label approved by the Provincial Scrutiny Committee.

ix. **Price**: As notified / fixed from time to time in consultation with controller of fertilizer.

x. **Output / Production**: Monthly production shall be conveyed to the department regularly.

xi. **Production Capacity:** Minimum 1000 Kg per day

xii. **Firms Registration:** Firm should be registered as per companies ordinance 1984 / concerned Registration Authorities Rules.

xiii. **Sales Tax Registration:** Having GST is mandatory.

xiv. NOC of the consultant regarding plant, machinery and environment department shall be mandatory.

SECRETARY TO GOVERNMENT OF THE PUNJAB
AGRICULTURE DEPARTMENT

NO & DATE EVEN:

A copy is forwarded for information and further necessary action to the:-

1. PS to Secretary, Industries, Commerce and Investment Deptt., Lahore
2. Vice Chancellor, University of Agriculture, Faisalabad
3. Director General Agri. (Research), AARI, Faisalabad
4. Director General Agri. (Ext & AR), Punjab, Lahore
5. Director Soil Fertility. Punjab, Lahore
6. Chairman, Crop Life Pakistan, Karachi
7. Chairman, PCPA, Lahore
8. Manager Government printing press, Punjab, Lahore

Assistant Director (Task Force)

CC:

1. PO to Secretary Agriculture, Govt. of Punjab
2. PS to Additional Secretary (Task Force)
3. PA to Additional Secretary (Admn.)
4. PA to Additional Secretary (Planning).

No. 11758-67/Tech Dated Lahore, the 08-11-2018

Copy is forwarded for favour of information and compliance to the:

1. Agricultural Chemists (SF), Soil and Water Testing Laboratory for Research, Lahore, Faisalabad, Multan, Bahawalpur, Sargodha, D.G Khan, Gujranwala and Rawalpindi.
2. Agricultural Chemist Provincial Reference Fertilizer Testing Laboratory, Raiwind.

Director
Soil Fertility Punjab,
Lahore