



UNITED REPUBLIC OF TANZANIA
MINISTRY OF AGRICULTURE
TANZANIA FERTILIZER REGULATORY AUTHORITY



**FERTILIZER REGISTER BOOK FOR REGISTERED FERTILIZERS AND
FERTILIZERS SUPPLEMENTS**

ISSUED BY THE EXECUTIVE DIRECTOR OF TANZANIA FERTILIZER
REGULATORY AUTHORITY (TFRA)

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Preamble

Tanzania Fertilizer Regulatory Authority (TFRA) has prepared Fertilizer Register Book (FRB) which shows the list of registered fertilizers in the United Republic of Tanzania. This list shows fertilizer and fertilizer supplements (FFS) which have been registered as per Fertilizer Act No.9 of 2009 and its Fertilizer Regulations of 2011. This FRB shows the trade name of fertilizer, nutrient content, registration number, year of registration and common use. This FRB intend to provide a technical assistance and assurance on the quality of fertilizer to all stakeholders involved in fertilizer industry which include among others administrators, fertilizer dealers, fertilizer inspectors, extension officers and farmers.

This FRB will provide assurance to the users that the fertilizer or fertilizer supplements listed have been tested or validated and registered by TFRA and on the other hand, FRB will be used as the enforcement tool for compliance.

Thus, FRB intends to provide information to stakeholders that the listed FFS in this book have been registered by TFRA after adhering to all the required standard and procedures as stated in the Act and Regulation. The use of this FRB is expected to contributed toward increase fertilizer investors, agricultural productivity, livelihood and hence ensure national food security.

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1. Definition of abbreviations

Al: Aluminium

B: Boron

Ca: Calcium

CaO: Calcium Oxide

Co: Cobalt

Cu: Copper

C/N: Carbon Nitrogen Ratio

DAP: Di ammonium Phosphate

Fe: Iron

FFS: Fertilizer and Fertilizer Supplements

FRB: Fertilizer Register Book

FV: Fluvic Acid

K: Potassium

K₂O: Potassium Oxide

Mg: Magnesium

MgO: Magnesium Oxide

Mn: Manganese

Mo: Molybdenum

MOP: Muriel of Potash or Potassium Chloride

Mg/L: Milligram per Litre

Me: Micro elements

N: Nitrogen

OM: Organic Matter

OC: Organic Carbon

P: Phosphorus

P₂O₅: Phosphorus Pentaoxide

PPM: Parts per million

S: Sulphur

SO₃: Sulphur Trioxide

TE: Trace Element

TFRA: Tanzania Fertilizer Regulatory Authority

Zn: Zinc

H₂O: Water



2. Definition of terms

"Director"	means	The Executive Director of the Tanzania Fertilizer Regulatory Authority appointed under section 7
"Fertilizer supplement"	means	any substance or mixture of substances, other than a fertilizer, that is manufactured, sold or represented for use in the improvement of the physical condition of soils or to aid plant growth or crop yields
"Inspector"	means	a person appointed or designated as an Inspector pursuant to section 33;
"Act"	Means	The Fertilizer Act No. 9 of 2009
"Authority"	means	The power or rights to give orders, make decisions and enforce obedience.
"Regulations"	Means	Fertilizer regulations, 2011
"Trade name"	Means	a name by which FFS is known in a trade
"Nutrient Content"	Means	Level of nutrient contained in fertilizer
"Registration Number"	Means	a number given to a registered fertilizer
"Registrant"	Means	a person who register trademark of a fertilizer
"Farmers"	Means	a person who involve in agricultural activities
"Efficacy"	Means	Performance of the registered fertilizer
"Quality"	Means	a standard fertilizer as measured against its performance
"Extension Officers"	Means	a person who led farmers to use good agricultural practices

3. Introduction

Tanzania Fertilizer Regulatory Authority (TFRA) is the Government Authority made under Section 3 of Fertilizer Act No.9 of 2009, mandated of regulating the manufacturing, exportations, marketing and use of fertilizer and fertilizer supplements in the country. This includes among others registering all fertilizer and fertilizer supplements.

Sections 8 and 9 of the Fertilizer Act No.9 of 2009 set out procedures for registration of FFS. Registration proceeds via assessing the suitability for use for the purpose of evaluating impacts to crops, soils, human health and the environment by carrying out laboratory analysis and efficacy trials. Trials are conducted for new fertilizers which contains new nutrients or microorganisms which had never been registered in Tanzania, for new formulations/blends which contain existing nutrients or already register nutrients prior to its registration it requires only laboratory analysis to test its conformity to the standards field evaluation should be optional.

Procedure for registration of fertilizer and fertilizer supplements are set out in The Fertilizer Regulations of 2011 regulations 3(1)(2)(3) and its amendments on The Fertilizer (amendments) Regulations, 2017 regulation 4. Section 15 of the Fertilizer Act No.9 of 2009 requires Publication and maintenance of register for all registered fertilizers.

4. Purpose

This FRB shows the list of registered FFS in the United Republic of Tanzania. The main purpose is to provide information to fertilizer stakeholders that the fertilizer listed in this FRB have been registered and are in compliances with relevant standards and regulations and on the other hand, FRB will be used as the enforcement tool for compliance.

5. Scope

This FRB comprise the list of all registered FFS which are eligible for use in United Republic of Tanzania and it will be used by all stakeholders includes administrators, decision makers, farmers, investors, researchers, extension officers and fertilizers dealers

6. Requirement for Registration of Fertilizer and Fertilizer Supplements

Requirement for registration of FFS are set out in fertilizer regulation of 2011 regulation 3, which require an applicant to submit to the Director in a form as set out in the First Schedule to the Fertilizer Regulations of 2011 and shall be accompanied by

- i. The information on the suitability of the fertilizer and fertilizer supplements as to its use including technical data sheet and directions;
- ii. A sample of the fertilizer, fertilizer supplements and certificate of analysis, if already issued;
- iii. A written declaration that the fertilizer and fertilizer supplements have or have not been banned or restricted in the country of origin;
- iv. Three copies of the label that is intended to be used for the fertilizer and fertilizer supplements to which the application relates and such other information as is necessary to determine the safety, merit and value of such fertilizer or fertilizer supplements
- v. Such other information or document as may be required by the Director; and
- vi. Where an application is made by an applicant who is not resident in Tanzania, the fertilizer and fertilizer supplements to which the application relates shall not be eligible for registration, unless the application is signed by an agent of the applicant who is permanently resident in Tanzania and to whom any notice or correspondence under the Act may be sent and such agent gives an undertaking to the Director.

7. Main features in a fertilizer register Book

The main features or information in a list of registered fertilizers are

- i. Registration Number
- ii. Nutrient Content
- iii. Year of Registration
- iv. Common Use

**The List of Registered Fertilizer and Fertilizer Supplements in the United Republic of Tanzania as per Fertilizers Act,
2009.**

S/NO	REGIST RATIO N NUMBE R	NUTRIENT CONTENT	YEAR OF REGISTRATI ON	COMMON USE
1	0001	46%N	2012	Vegetative
2	0002	18%N: 46%P ₂ O ₅	2012	Vegetative, Rooting
3	0003	11-12%N: 48-61%P ₂ O ₅	2016	Vegetative, Rooting
4	0004	26-27%N	2012	Vegetative, Flowering and Fruiting
5	0005	21%N + 24% S	2012	Vegetative, Fruiting, Oil formation, Increase Acid
6	0006	46%P ₂ O ₅	2012	Rooting
7	0007	60%K ₂ O	2012	Flowering
8	0008	25%N: 5%P ₂ O ₅ : 5%K ₂ O	2012	Vegetative, Rooting, flowering, and fruiting
9	0009	17%N: 17%P ₂ O ₅ : 17%K ₂ O	2012	Rooting, Vegetative, Flowering and Fruiting
10	0010	16%N: 16%P ₂ O ₅ : 16%K ₂ O	2012	Rooting, Vegetative, Flowering and Fruiting
11	0011	20%N: 10%P ₂ O ₅ : 10%K ₂ O	2012	Rooting, Vegetative, Flowering and Fruiting
12	0012	10%N: 18%P ₂ O ₅ : 24%K ₂ O	2012	Rooting, Vegetative, Flowering and Fruiting

13	0013	48-53%K ₂ O + 17-18%S	2015	reduce soil pH soil pH, Flowering and fruiting
14	0014	6%N: 24%P ₂ O ₅ : 20%K ₂ O + 1.5%Mg, 8%S, 0.25%B, Zn	2012	Rooting, Vegetative, Flowering and Fruiting, water and mineral transportation, Stalk elongation and plant vein
15	0015	5%N: 20%P ₂ O ₅ : 24%K ₂ O + 1%Mg, 10%S, 0.25%B, Zn	2012	Rooting, Vegetative, Flowering and Fruiting, reduce soil pH soil pH, stalk elongation and plant vein, water and mineral transportation
16	0021	1.5%Zn, 0.5%Mn	2012	stalk elongation and plant vein, fungal disease resistance
17	0022	9%N: 18%P ₂ O ₅ : 6%K ₂ O + 25%CaO, 2%MgO, 5%S, 0.1%B, 0.5%Zn	2018	Rooting, Vegetative, Flowering and Fruiting, soil pH regulator, stalk elongation and plant vein, water and mineral transportation
18	0023	11%N +15%MgO	2012	Vegetative, rise soil pH
19	0024	23%N: 10%P ₂ O ₅ : 5%K ₂ O	2012	Rooting, Vegetative, Flowering and Fruiting
20	0025	0.00002728% CaCl ₂ , 0.00002728% MgSO ₄ , 0.000798% Sulphate Castor Oil, 0.00596% Sodium Metasilicate, 1% Lignite Extract	2020	Vegetative, Flowering and Fruiting, soil pH regulation
21	0026	23%N: 21%P ₂ O ₅ : 0%K ₂ O + 4%S	2012	Rooting, Vegetative, Flowering and Fruiting, reduce soil pH soil pH
22	0027	22%N: 6%P ₂ O ₅ : 12%K ₂ O + 2%CaO, 3%S, 1%MgO, 0.2%B, 0.2%Zn	2012	Rooting, Vegetative, Flowering and Fruiting, soil pH regulator, water and mineral transportation, stalk elongation and plant vein,
23	0028	15.5%N + 26.5%CaO	2015	Vegetative, increase soil pH
24	0031	15%N: 9%P ₂ O ₅ : 20%K ₂ O + TE	2018	Rooting, Vegetative, Flowering and Fruiting

25	0032	8%N: 14%P ₂ O ₅ : 19%K ₂ O	2016	Rooting, Vegetative and Flowering and fruiting
26	0034	32%N: 10%P ₂ O ₅ : 8K ₂ O + TE	2016	Rooting, Vegetative and Flowering and fruiting
27	0035	15%N: 15%P ₂ O ₅ : 15%K ₂ O	2016	Rooting, Vegetative, Flowering and Fruiting
28	0036	52%P ₂ O ₅ : 34%K ₂ O	2016	Rooting and Flowering and fruiting
29	0038	50%K ₂ O + 3%H ₂ SO ₄	2016	Flowering and Fruiting, reduce soil pH soil pH
30	0039	15% MgO + 98% Mg (NO ₃) ₂	2016	Vegetative
31	0043	5.5%N: 0% P ₂ O ₅ : 1%K ₂ O + 0.05%B, 0.15%Zn, 0.5%Fe, 0.05%Cu, 0.3%Mn, 4.7% Amino Acids, 22%OM	2012	vegetative, Rooting, flowering and Fruiting, water and mineral transportation, stalk elongation and plant vein, fungal disease resistance, plant respiration, cell wall strengthening, soil drainage and aeration
32	0044	12%N: 10% P ₂ O ₅ : 8%K ₂ O + TE	2013	Rooting, Vegetative and Flowering and fruiting
33	0045	61.5%P ₂ O ₅ + 12.1% NH ₄	2013	Rooting and Vegetative
34	0050	0.3%Mg, 11%S, 21.5%Zn, 0.004%Cu	2016	Vegetative, reduce soil pH soil ph, stalk elongation and plant vein, cell wall strengthening
35	0053	18%N: 20%P ₂ O ₅ : 21%K ₂ O	2013	Rooting, Vegetative, Flowering and Fruiting
36	0054	0%N: 50%P ₂ O ₅ : 30%K ₂ O	2016	Rooting, flowering and fruiting
37	0055	14%N: 0% P ₂ O ₅ : 0.2%K ₂ O + 13%CaO, 2.5%Mg + TE	2013	Rooting, Vegetative, Flowering and Fruiting, Raise soil pH,
38	0056	CaCO ₃	2013	Soil conditioner (Reduce Acid)
39	0057	CaSO _{4.2H2O}	2013	Soil conditioner (Increase Acid)

40	0058	14%N: 11%P ₂ O ₅ : 33%K ₂ O	2013	Rooting, Vegetative, Flowering and fruiting
41	0059	27%N: 10%P ₂ O ₅ : 16%K ₂ O	2013	Rooting +Vegetative Flowering + Fruiting
42	0060	16%MgO + 12.5% S	2016	Vegetative and Fruiting, reduce soil pH soil pH
43	0061	15.5% N + 18.5% Ca	2013	Vegetative and Fruiting
44	0062	13%N: 46% K ₂ O	2015	Vegetative and Flowering
45	0063	13%N: 44%K ₂ O	2015	Vegetative, Flowering and Fruiting
46	0064	23%P ₂ O ₅ : 42%K ₂ O + 0.1%B, 0.5%Zn, FV	2013	Rooting, Flowering and Fruiting, stalk elongation and plant vein, water and mineral transportation
47	0065	43%P ₂ O ₅ : 28%K ₂ O + 2%MgO, 0.5%B, 0.2%Mn	2013	Rooting and Vegetative, flowering and fruiting, water and mineral transportation, Fungal disease resistance
48	0066	15%N: 15%P ₂ O ₅ : 15%K ₂ O	2016	Rooting, Vegetative and Flowering and fruiting
49	0067	19%N: 19%P ₂ O ₅ : 19%K ₂ O + 3%MgO + Me	2016	Rooting, Vegetative, flowering and fruiting, rise soil pH
50	0068	46%P ₂ O ₅ : 30%K ₂ O + 2%MgO, 0.2%B, FV	2016	Rooting, Vegetative and Fruiting and flowering, water and minerals transportation, rise soil pH
51	0069	11%N: 7%P ₂ O ₅ : 28%K ₂ O + 2%MgO + Me	2012	Rooting, Vegetative and Fruiting, rise soil pH
52	0070	12%N: 8%P ₂ O ₅ : 23%K ₂ O + 2%MgO + Me	2013	Rooting. Vegetative and Fruiting, Rise soil pH
53	0071	16%N: 8%P ₂ O ₅ : 16%K ₂ O + 8%MgO + Me	2013	Rooting, Vegetative and Fruiting and flowering, rise soil pH
54	0072	20%N: 9%P ₂ O ₅ : 20%K ₂ O + TE	2016	Rooting, Vegetative and Fruiting and flowering
55	0073	19%N: 19%P ₂ O ₅ : 19%K ₂ O + MgO + TE	2013	Rooting, Vegetative, Fruiting and flowering Rise soil pH

56	0074	18%N: 24%P ₂ O ₅ : 18%K ₂ O + TE	2013	Rooting, Vegetative, flowering and Fruiting
57	0076	6% Fe	2013	Plant respiration
58	0078	10%N: 20%P ₂ O ₅ + 25%CaO, 5%S, 0.5%Zn	2013	Rooting, vegetative, pH regulation and stalk elongation and plant vein
59	0079	15.4%N + 25.6%CaO, 0.3% B	2013	Vegetative, Fruiting, water and minerals transportation
60	0080	40%N + 5.5%S	2013	Vegetative and Fruiting, reduce soil pH soil pH and oil Formation
61	0081	14%N: 14%P ₂ O ₅ : 20%K ₂ O + MgO, 0.1% B	2013	Rooting, Vegetative, Flowering and Fruiting, rise soil pH and water and minerals transportation
62	0082	15%N: 9%P ₂ O ₅ : 20%K ₂ O + 3.8%S, 1.8%Mg, 0.02%B, 0.02%Mn, 0.02%Zn	2013	Rooting, Vegetative and Flowering and fruiting, reduce soil pH
63	0083	24%N + 10.7%CaO, 6%S	2016	vegetative, soil pH regulator, Fruiting
64	0084	20%N: 10%P ₂ O ₅ : 10%K ₂ O + 4Mg	2013	Rooting, Vegetative and Flowering and fruiting
65	0085	21%N: 21%P ₂ O ₅ : 21%K ₂ O	2015	Rooting, Vegetative and Flowering and fruiting,
66	0087	13% N, 44% K ₂ O, 0.5% CaO, 0.5% MgO	2018	Vegetative, flowering and fruiting, rise soil pH
67	0088	99% MgSO ₄	2018	Vegetative and Fruiting
68	0089	13%N: 2% P ₂ O ₅ :44% K ₂ O	2013	Rooting, Vegetative and Flowering
69	0090	19%N: 19%P ₂ O ₅ : 19%K ₂ O + 2%MgO + B + Me	2018	Vegetative, Rooting, Flowering and Fruiting, Rise soil pH, water and mineral transportation
70	0091	4-6% N: 19-21% P ₂ O ₅	2018	Rooting and Vegetative
71	0092	12%N: 10%P ₂ O ₅ : 8%K ₂ O	2013	Vegetative, Flowering and Fruiting, Rooting
72	0095	10%N: 10%P ₂ O ₅ : 24%K ₂ O	2016	Rooting, Vegetative, Flowering and Fruiting

73	0096	15% N: 36% P ₂ O ₅ : 0% K ₂ O	2016	Vegetative and Rooting
74	0097	31%N: 0%P ₂ O ₅ : 7K ₂ O + 2% MgO + TE + FV	2016	Vegetative, Rooting, Flowering and Fruiting, Rise soil pH
75	0098	6%N: 18%P ₂ O ₅ : 37% K ₂ O +2% MgO + TE + FV	2016	Vegetative, Rooting, rise soil pH, Flowering and Fruiting
76	0099	5%N + 0.1%B, 0.75%Zn, 0.1%Fe, 0.1%Cu 0.5%Mn, 0.02%Mo, 0.01%Co, 40%OM, 10% Amino Acids	2015	Vegetative, water and minerals transportation, stalk elongation and plant vein, plant respiration, cell wall strengthening, fungal disease resistance, Nitrogen balance, soil drainage and aeration,
77	00100	7%N + 14.4% Amino Acids	2016	Vegetative and Water retention
78	00101	3% N: 10% P ₂ O ₅ + 1%B, 0.5%Mo, 3% Amino Acids	2021	Vegetative, Rooting, Nitrogen balance,
79	0102	22%N: 6%P ₂ O ₅ : 12%K ₂ O	2014	Rooting, Vegetative, Flowering and fruiting
80	0103	4.5% N: 1% P ₂ O ₅ : 1%K ₂ O + 25% Fluvic Acids, 25%Humic Extract, 45%OM	2018	Vegetative, Rooting, Flowering and Fruiting, Water retention
81	0104	4%N: 3%P ₂ O ₅ : 3%K ₂ O	2016	Vegetative, Flowering and Fruiting, Rooting
82	0105	10%N: 18%P ₂ O ₅ : 24%K ₂ O + 7S	2016	Vegetative, Flowering and Fruiting, Rooting, Reduce soil pH
83	0106	5%N: 5%P ₂ O ₅ : 40%K ₂ O + 0.25%MgO + TE	2016	Vegetative, Rooting, Flowering and fruiting, Rise soil pH
84	0107	22%N: 21%P ₂ O ₅ : 17%K ₂ O	2016	Vegetative, Flowering and Fruiting, Rooting
85	0108	24%N: 24%P ₂ O ₅ : 18%K ₂ O + TE	2016	Rooting and Vegetative, Flowering and Fruiting
86	0110	4.8%N + 4.9%Mg + 4.9%B + 9.9%Zn	2014	Vegetative, Flowering and Fruiting, stalk elongation and plant vein, Rise soil pH

87	0111	0%N: 30%P ₂ O ₅ : 5%K ₂ O + 2.5%Mg + 3.1%Zn	2016	Vegetative, Flowering and Fruiting, Rise soil pH, Rooting, stalk elongation and plant vein
88	0112	Biofix-Legume Inoculant	2016	Rooting, Nodule formation, N-fixation
89	0113	7%N + 49% Humic acid	2016	Vegetative, improve water retention
90	0114	14%N: 28%P ₂ O ₅ : 18%K ₂ O + TE	2020	Rooting, Vegetative, Flowering and fruiting
91	0115	19%N: 19%P ₂ O ₅ : 19%K ₂ O + TE	2020	Vegetative, Rooting, Flowering and Fruiting
92	0116	12%N: 10%P ₂ O ₅ : 8%K ₂ O + TE	2014	Vegetative, Rooting, Flowering and Fruiting
93	0117	1.5%N: 1.5%P ₂ O ₅ : 3.5%K ₂ O + 25% Organic Matter	2020	Rooting, Vegetative, Flowering and fruiting, soil drainage and aeration
94	0118	Rhizobia Bacteria	2020	Rooting, Nodule formation, N-fixation
95	0119	10%N: 5%P ₂ O ₅ : 40%K ₂ O + TE	2016	Vegetative, Flowering and Fruiting, Rooting
96	0120	25%N: 5%P ₂ O ₅ : 5%K ₂ O + 5%S	2020	Vegetative, Flowering and Fruiting, Rooting, Reduce soil pH
97	0121	2.1%N: 3.6%K ₂ O	2017	Vegetative, Flowering
98	0122	16%N: 10%P ₂ O ₅ : 8%K ₂ O	2017	Vegetative, Rooting, Flowering
99	0123	16%N:	2017	Vegetative
100	0124	40%N + 7%S	2020	Vegetative, Fruiting, Oil formation and reduce soil pH
101	0125	15% B	2015	water and minerals transportation
102	0126	24%N + 15%S	2016	Vegetative and Fruiting and reduce soil pH
103	0127	4%N: 3%P ₂ O ₅ : 2%K ₂ O	2016	Vegetative, Rooting, Flowering
104	0128	51%K20 + 18%S +1%CI	2020	Flowering and fruiting, Oil formation, reduce soil pH, disease resistance and tolerance

105	0129	70%Zn	2020	stalk elongation and plant vein
106	0130	Bacillus, Rhizobium		Rooting and Vegetative, Nodule formation N- fixation
107	0131	15%B	2016	water and mineral transportation
108	0132	6%N: 18%P ₂ O ₅ : 37%K ₂ O + 2%MgO, ME, FV	2015	Vegetative, Flowering and Fruiting, rooting, rise soil pH
109	0133	17%N: 21%P ₂ O ₅ : 11%K ₂ O	2015	Vegetative, Rooting, and Flowering
110	0134	13.44% N: 7.55% P ₂ O ₅ : 4.84%K ₂ O	2016	Vegetative, Rooting, Flowering and Fruiting
111	0135	0.6%Mg, 0.2%B, 0.4%Zn, 0.2%Fe, 0.9%Cu,	2015	Rooting, vegetation, plant respiration, stalk elongation and plant vein, Cell wall strengthening, water and minerals transportation
112	0136	97.56% Calcium Carbonate	2016	Soil conditioner (Reduce Acid)
113	0137	13%N: 46%K ₂ O	2016	Vegetative, Flowering and fruiting
114	0138	8%N: 50%P ₂ O ₅ : 8%K ₂ O + 2 %MgO, ME, FV	2016	Vegetative, Rooting, rise soil pH, Flowering and Fruiting
115	0139	31%N: 8%P ₂ O ₅ : 7%K ₂ O + 2 %MgO, B, ME	2021	Vegetative, Rooting, water and minerals transportation, Flowering and Fruiting, rise soil pH
116	0140	19%N: 19%P ₂ O ₅ : 19%K ₂ O + 2%MgO, ME, FV	2016	Vegetative, Rooting, Flowering and Fruiting, rise soil pH
117	0141	48% CaCO ₃ , 38% MgCO ₃ , 67% ECCE	2021	Soil conditioner
118	0142	20%N: 20%P ₂ O ₅ : 20%K ₂ O	2017	Vegetative, Rooting, Flowering
119	0143	30%N: 10%P ₂ O ₅ : 10%K ₂ O	2016	Vegetative, Rooting, Flowering
120	0144	10%N: 10%P ₂ O ₅ : 40%K ₂ O	2016	Vegetative, Rooting, Flowering
121	0145	10%N: 52%P ₂ O ₅ : 10%K ₂ O	2021	Vegetative, Rooting, Flowering

122	0146	24%N: 24%P ₂ O ₅ : 18%K ₂ O	2021	Vegetative, Rooting, Flowering
123	0147	26%N: 8%P ₂ O ₅ : 17%K ₂ O + 2%MgO	2021	Vegetative, Rooting, Flowering and fruiting
124	0148	19%N: 19%P ₂ O ₅ : 19%K ₂ O	2021	Vegetative, Rooting, Flowering
125	0149	0%N: 51.5%P ₂ O ₅ : 34%K ₂ O	2021	Rooting, Flowering and fruiting
126	0150	8%N: 24%P ₂ O ₅ : 16%K ₂ O + 5%S, 0.1%B, 0.5%Zn	2021	Rooting, Vegetative, Flowering and fruiting, water and minerals transportation, stalk elongation and plant vein, reduce soil pH
127	0151	28%P ₂ O ₅ + 36%CaO	2021	Rooting, Fruiting and rise soil pH
128	0152	28%P ₂ O ₅ + 36%CaO	2021	Rooting, fruiting and rise soil pH
129	0153	0%N: 0.7%P ₂ O ₅ : 0.5%K ₂ O + 5%Ca, 0.5% Mg	2016	Rooting, rise soil pH, Flowering and Fruiting
130	0154	32% N: 10%P ₂ O ₅ : 8%K ₂ O	2016	Vegetative, Rooting, Flowering
131	0155	14%K ₂ O + 17%CaO, 6%MgO, 47.8%SO ₃	2016	Flowering and Fruiting, soil pH regulator
132	0156	14%K ₂ O + 17%CaO, 6%MgO, 47.8%SO ₃	2016	Flowering and Fruiting, soil pH regulator
133	0160	49.3% Protein + 3.1 Soluble Carbohydrate	2021	Vegetative
134	0161	2.45%N: 0.76%P ₂ O ₅ : 2.66%K ₂ O + 13%CaO, 1.01%B	2021	Vegetative, Rooting, rise soil pH, water and minerals transportation, Flowering and Fruiting
135	0162	12%N: 10%P ₂ O ₅ : 8%K ₂ O + TE	2016	Vegetative Rooting, Flowering and fruiting
136	0163	2%N: 10%P ₂ O ₅ : 01%K ₂ O + TE	2016	Vegetative Rooting, Flowering and fruiting
137	0164	16%Mg + 13%S	2016	Fruiting, Oil formation, Reduce Soil pH

138	0165	15%N: 10%P ₂ O ₅ : 35%K ₂ O + TE	2016	Vegetative, Rooting, Flowering and fruiting
139	0166	20%N: 5%P ₂ O ₅ : 18%K ₂ O + Zn, B	2016	Vegetative, Rooting, Flowering and fruiting, water and minerals transportation, stalk elongation and plant vein
140	0167	18%N: 6%P ₂ O ₅ : 12%K ₂ O	2018	Vegetative, Rooting, Flowering
141	0168	11%N: 8%P ₂ O ₅ : 6%K ₂ O + TE	2018	Vegetative, Rooting, Flowering
142	0170	46 % N + 5% Zn	2018	Vegetation, stalk elongation and plant vein
143	0171	9%N: 5%P ₂ O ₅ : 8%K ₂ O	2018	Vegetative, Rooting, Flowering
144	0172	33% N	2018	Vegetative
145	0173	14%N: 09%P ₂ O ₅ : 04%K ₂ O	2018	Vegetative, Rooting, Flowering
146	0174	7.3% Titanic Sulphate, 1.2% Citric acid, 0.3% Tartaric acid, 4.2% Ammonia water, 1% Acticide	2018	Vegetative, strengthening plant stress tolerance
147	0176	15%N: 10%P ₂ O ₅ : 34%K ₂ O + TE	2018	Vegetative, Rooting, Flowering
148	0177	23%N: 10%P ₂ O ₅ : 05%K ₂ O + 2%MgO +3%S + 0.3%Zn	2018	Vegetative, Rooting, Flowering and fruiting, stalk elongation and plant vein, soil pH regulator
149	0178	20%N: 20%P ₂ O ₅ : 20%K ₂ O + TE	2016	Vegetative, Rooting, Flowering
150	0179	28%N: 14%P ₂ O ₅ : 14%K ₂ O + TE	2018	Vegetative, Rooting, Flowering
151	0180	14%N: 23%P ₂ O ₅ : 14%K ₂ O + 5%S +1% B ₂ O ₃	2018	Vegetative, Rooting, Flowering and fruiting, water and minerals transportation, reduce soil pH
152	0181	2.2% Aromatic Nitrogen	2021	Vegetative
153	0182	14%N: 25%P ₂ O ₅ : 13%K ₂ O + TE	2018	Vegetative, Rooting, Flowering
154	0183	13%N: 52%P ₂ O ₅ : 05%K ₂ O + TE	2018	Vegetative, Rooting, Flowering

155	0184	24%N: 18%P ₂ O ₅ : 18%K ₂ O + TE	2018	Vegetative, Rooting, Flowering
156	0185	31%N: 11%P ₂ O ₅ : 11%K ₂ O + TE	2018	Vegetative, Rooting, Flowering
157	0186	15%N: 12%P ₂ O ₅ : 31%K ₂ O	2018	Vegetative, Rooting, Flowering
158	0187	19%N: 38%P ₂ O ₅ : 0%K ₂ O + 7%S	2018	Vegetative, Rooting, Flowering and fruiting, reduce soil pH
159	0188	13%N: 10%P ₂ O ₅ : 13%K ₂ O	2018	Vegetative, Rooting, Flowering
160	0189	8%N: 32% P ₂ O ₅ : 4%K ₂ O	2018	Vegetative, Rooting, Flowering
161	0190	0%N: 50%P ₂ O ₅ : 35%K ₂ O	2018	Vegetative, Rooting, Flowering
162	0174	28%N: 14% P ₂ O ₅ : 14%K ₂ O	2018	Vegetative, Rooting, Flowering
163	0192	14%N: 11%P ₂ O ₅ : 33%K ₂ O + TE	2018	Vegetative, Rooting, Flowering
164	0193	27%N: 10%P ₂ O ₅ : 16%K ₂ O +TE	2018	Vegetative, Rooting, Flowering
165	0194	2%K ₂ O + Organic Nutrients	2018	Flowering,
166	0195	1%N: 0%P ₂ O ₅ :2%K ₂ O + Organic Nutrients	2018	Vegetative, Rooting, Flowering and fruiting, soil drainage and aeration
167	0196	24%N: 6%P ₂ O ₅ : 12%K ₂ O	2018	Vegetative, Rooting, Flowering and fruiting
168	0197	11.6%K ₂ O + 12.1%CaO, 3.6%Mg, 19.2% S	2018	Rooting, Vegetative, Flowering and Fruiting, soil pH regulator.
169	0198	16%N: 32%P ₂ O ₅ : 16%K ₂ O	2017	Vegetative, Rooting, Flowering
170	0199	16%N: 8%P ₂ O ₅ : 25%K ₂ O	2018	Vegetative, Rooting, Flowering
171	0200	24%N: 24%P ₂ O ₅ : 18%K ₂ O + TE	2018	Vegetative, Rooting, Flowering
172	0201	Bacterial and Algae Extract	2018	Stimulate growth process
173	0202	15%N: 22.5%CaO	2018	Vegetative, Fruiting and rise soil pH
174	0203	Bacterial and Algae Extract	2017	Stimulate growth process

175	0204	Extract of See Weed and Blue Green Algae	2017	Stimulate growth process and produce blue green pigment in plant
176	0205	Extract of See Weed and Blue Green Algae	2017	Stimulate growth process and produce blue green pigment in plant
177	0206	30% Sea Weed Extract, 4g/L Cu + Zn + Mo + B, 12%N: 20%P ₂ O ₅ : 20%K ₂ O	2017	Rooting, Vegetative, Flowering and Fruiting, water and minerals transportation, Nitrogen, balance, stalk elongation and plant vein, cell wall strengthening, plant stress tolerance
178	0207	8%N: 8%P ₂ O ₅ : 6%K ₂ O	2017	Vegetative, Rooting, Flowering and fruiting
179	0208	5%N: 10%P ₂ O ₅ : 3%K ₂ O + 1%Zn 1%Fe, 1.5%Mn,	2017	Vegetative, Rooting, stalk elongation and plant vein, plant respiration, fungal disease resistance, Flowering and fruiting
180	0209	24%N: 24%P ₂ O ₅ : 18%K ₂ O + 1.5%Mg	2017	Vegetative, Rooting, Flowering and fruiting
181	0211	5%N: 50%P ₂ O ₅ : 30%K ₂ O	2017	Vegetative, Rooting, Flowering
182	0213	12%N + 5%Mg, 15% CaO	2017	Vegetative, fruiting and rise soil pH
183	0214	14%N: 25%P ₂ O ₅ : 13%K ₂ O + 3.2%Mg, 12.5%S, 1.8% Zn	2017	Vegetative, Rooting, stalk elongation and plant vein, soil pH regulator, Flowering and fruiting
184	0215	O%N: 30%P ₂ O ₅ : 40%K ₂ O + TE	2017	Rooting, Flowering and fruiting
185	0216	36%K ₂ O + 25% S	2017	Flowering, Fruiting and Oil formation
186	0217	10%N: 50%P ₂ O ₅ : 10%K ₂ O	2017	Vegetative, Rooting, Flowering and fruiting
187	0218	40% N	2017	Vegetative
188	0219	8.5%N + 4%B, 4% Zn, 40%C, 13.5% Amino Acid	2017	vegetative, water and minerals transportation, stalk elongation and plant vein, plant growth and respiration
189	0220	18%N: 44%P ₂ O ₅	2017	Rooting and Vegetative

190	0221	15%N: 20%P ₂ O ₅ : 50%K ₂ O	2017	Vegetative, Rooting, Flowering
191	0222	10%N: 50%P ₂ O ₅ : 10%K ₂ O	2017	Vegetative, Rooting, Flowering
192	0223	38%CaO + 0.6%Mg	2017	Fruiting, vegetative, and rise soil pH
193	0224	25%CaO + 9.5%Mg	2017	Fruiting, vegetative, and rise soil pH
194	0225	0.1%Mg, 0.4%S, 0.3%B, 0.3%Zn, 0.4%Fe, 0.1%Mn	2017	Vegetative, water and minerals transportation, stalk elongation and plant vein, plant respiration, fungal disease resistance,
195	0226	5.6%N: 19.5%P ₂ O ₅ : 5%K ₂ O + TE	2017	Rooting, vegetative, flowering
196	0227	4.9%Zn + 17% Organic Matter	2017	stalk elongation and plant vein, soil drainage and aeration
197	0228	12%N: 24%P ₂ O ₅ : 12%K ₂ O + 2%MgO, 5%S, 0.007%Zn 0.2%Fe,	2017	Rooting, Vegetative, Flowering and Fruiting, plant respiration, stalk elongation and plant vein, soil pH regulator
198	0229	Streptomyces sp, Lactobacillus sp, Rhizobium sp	2017	Rooting+ Nodule formation, N-fixation
199	0230	Streptomyces sp, Lactobacillus sp, Rhizobium sp	2017	Rooting+ Nodule formation, N-fixation
200	0231	19%N: 19%P ₂ O ₅ : 10%K ₂ O	2017	Vegetative, Rooting, Flowering
201	0232	8.5% S	2017	Fruiting and Oil formation
202	0233	1.1%N: 0.13%P ₂ O ₅ : 3.9%K ₂ O +0.58%CaO, 0.48%Mg, 0.38%S, 29.45% Organic Matter	2017	Rooting, Vegetative, soil drainage and aeration, soil pH regulator Flowering and Fruiting
203	0235	51.5%P ₂ O ₅ : 34%K ₂ O	2017	Rooting, flowering and fruiting
204	0236	0.5%B, 051%Zn, 0.31%(6-BA)	2017	water and mineral transportation, stalk elongation and plant vein
205	0237	0.62%IBA	2017	Root formation
206	0238	0.4% Cytokinin	2017	Root formation

207	0239	0.005%CaO, 0.007%Mg, 1.62%Zn 22%Fe, 0.001% Cu, 0.24%Mn,	2017	Vegetative, Fruiting, plant respiration, fungal disease resistance, cell wall strengthening
208	0240	18%K ₂ O + 0.2% B	2017	Flowering and fruiting, water and minerals transportation
209	0241	10%CaO, 0.2%B, 6% Amino acid	2017	Vegetative, Fruiting, water and minerals transportation, rise soil pH
210	0242	3%N + 9% B, 30% OM	2017	Vegetative, water and minerals transportation, soil drainage and aeration
211	0243	1.5%Zn, 0.5%Mn	2017	stalk elongation and plant vein, fungal disease resistance
212	0244	6.5%Cu	2017	Cell wall strengthening
213	0245	1%Zn, 0.5%B, 2%Fe, 0.5%Cu, 1%Mn	2017	stalk elongation and plant vein, plant respiration, water and mineral transportation, fungal disease resistance,
214	0246	8%N: 9%P ₂ O ₅ : 13%K ₂ O	2017	Vegetative, Rooting, Flowering
215	0247	3%N: 2%K ₂ O	2017	Vegetative, Flowering and fruiting
216	0248	30%P ₂ O ₅	2017	Rooting,
217	0249	30% Humic acid + 10% Ascorbic acid	2017	Rooting, Lower Soil pH and water retention
218	0250	1.4%N: 0.3%P ₂ O ₅ : 0.7%K ₂ O +2.5%OM	2017	Rooting, Vegetative, Flowering and fruiting, soil drainage and aeration
219	0251	2.5%Cu	2017	cell wall strengthening
220	0252	2.35%N: 4.44%P ₂ O ₅ : 1.75%K ₂ O + TE	2017	Vegetative, Rooting, Flowering and Fruiting
221	0255	30%N: 10%P ₂ O ₅ : 10%K ₂ O + TE	2017	Vegetative, Rooting, Flowering
222	0256	15%N: 5%P ₂ O ₅ : 35%K ₂ O + TE	2017	Vegetative, Rooting, Flowering
223	0257	28%N: 8%P ₂ O ₅ : 9%K ₂ O + TE	2017	Vegetative, Rooting, Flowering
224	0258	12%N: 10%P ₂ O ₅ : 10%K ₂ O + TE	2017	Vegetative, Rooting, Flowering

225	0259	5%N: 7.5% P ₂ O ₅ : 5%K ₂ O + 5%Mg 5%S, 5%B, 5%Zn, 0.1%Fe, 0.1%Cu, 0.1%Mn, 0.1%Mo	2017	Rooting, Vegetative, Flowering and Fruiting, water and minerals transportation, Nitrogen balance, stalk elongation and plant vein, cell wall strengthening, plant respiration, reduce soil pH
226	0260	O%N: 29.5%P ₂ O ₅ : 5%K ₂ O+ 2.7%MgO + 3.1%Zn	2017	Rooting, Vegetative, Flowering and Fruiting, Rise the soil pH, stalk elongation and plant vein
227	0261	Conc. Zinc micronutrient	2017	stalk elongation and plant vein
228	0262	10.9%B	2017	water transport and mineral transportation
229	0263	33% Cu	2017	cell wall strengthening
230	0264	18%N: 6%P ₂ O ₅ : 9%K ₂ O	2017	Rooting, Vegetative, Flowering
231	0265	28%N: 8%P ₂ O ₅ : 9%K ₂ O + 4%B	2017	Rooting, Vegetative, Flowering and fruiting, water and mineral transportation
232	0266	11%N: 7%P ₂ O ₅ : 7%K ₂ O	2014	Rooting, Vegetative, Flowering
233	0267	25%N	2014	Vegetative,
234	0268	5%N: 25%P ₂ O ₅	2014	Rooting, Vegetative
235	0269	2%K ₂ O + Organic nutrients	2016	flowering and fruiting, soil drainage and aeration
236	0270	3%N: 15%P ₂ O ₅ +10%Zn	2018	Rooting and Vegetative, stalk elongation and plant vein
237	0271	5%N: 0% P ₂ O ₅ : 5%K ₂ O +25%OM + TE	2018	Vegetative, Rooting, flowering and fruiting, soil drainage and aeration
238	0272	0.5%B, 4%Zn,4%Fe, 0.5%Cu 2%Mn	2018	water and mineral transportation, stalk elongation and plant vein, plant respiration, cell wall strengthening, Fungal disease resistance
239	0273	30%K ₂ O	2018	Flowering and fruiting

240	0274	1.6%N: 0.5%P ₂ O ₅ : 0.5%K ₂ O + 60%OM	2018	Rooting, Vegetative, Flowering and fruiting, soil drainage and aeration
241	0275	11%N: 22%P ₂ O ₅ : 21%K ₂ O +4%S, 1%B +0.1%zn	2018	Rooting, Vegetative, Flowering and Fruiting, reduce soil pH, water and minerals transportation, stalk elongation and plant vein
242	0276	10%N: 18%P ₂ O ₅ : 24%K ₂ O + 7%CaO, 0.5%MgO, 7%S,0.1%B	2018	Rooting, Vegetative, Flowering and Fruiting, pH regulation, water and minerals transportation
243	0277	27%N: 10%P ₂ O ₅ : 0%K ₂ O + 15%CaO	2018	Rooting, Vegetative, Flowering and Fruiting
244	0278	8%N: 17%P ₂ O ₅ : 2%K ₂ O	2018	Vegetative, Rooting, Flowering
245	0279	08%N: 05%P ₂ O ₅ : 30K ₂ O	2018	Vegetative, Rooting, Flowering
246	0280	31%N: 10%P ₂ O ₅ : 8%K ₂ O + TE	2018	Vegetative, Rooting, Flowering
247	0281	Brady rhizobium, Japonicum	2018	Rooting, Nodule formation, N-fixation
248	0283	15%N: 30%P ₂ O ₅ :15%K ₂ O + 1% MgO + TE	2018	Rooting, Vegetative, Flowering and Fruiting, rise soil pH
249	0284	30%N: 10%P ₂ O ₅ : 10%K ₂ O + 0.7%MgO + TE	2018	Rooting, Vegetative, Flowering and Fruiting, rise soil pH
250	0285	10%N: 10%P ₂ O ₅ : 40%K ₂ O + 1% MgO + TE	2018	Rooting, Vegetative, Flowering and Fruiting, rise soil pH
251	0286	12%N: 45%P ₂ O ₅ + 5% S + 1% Zn	2018	Rooting, Vegetative, reduce the soil pH, stalk elongation and plant vein
252	0287	0.05%Fulvic Acid	2018	Lower Soil pH, Root growth, Fix Phosphate
253	0288	10%N + 17%CaO, 14%Mg,0.1%B	2018	Vegetative, Rise soil pH, fruiting
254	0289	30% Humic acid + 10% Ascorbic acid	2018	Lower Soil pH, water retention
255	0290	30% Zn + 30% Cu	2018	stalk elongation and plant vein, cell wall elongation

256	0291	7%N: 7% P ₂ O ₅ : 7% K ₂ O	2018	Rooting, Vegetative, flowering and fruiting
257	0292	19.87%N: 11.74%P ₂ O ₅ : 11.11%K ₂ O + 0.001%Zn, 0.04%Fe + 0.009%Cu, 0.026%Mn	2018	Rooting, Vegetative, flowering and fruiting, stalk elongation and plant vein, plant respiration, cell wall strengthening, fungal disease resistance
258	0293	3.67%N: 2.25%P ₂ O ₅ : 0.7%K ₂ O + 0.3%Ca, 0.07%Mg	2018	Rooting, Vegetative, flowering and fruiting, rise soil pH
259	0294	2.93%N + 6.99%Mn	2019	Vegetative, Fungal disease resistance
260	0295	29%P ₂ O ₅ + 21.6%K ₂ O	2018	Rooting, Flowering
261	0296	3%N + 29%P ₂ O ₅	2019	Vegetative, Rooting
262	0297	10%B	2019	water and mineral transportation
263	0298	0.02%K ₂ O + 0.01%CaO + 0.06%Na	2019	Flowering and Fruiting, pH regulator
264	0299	0.06%N: 0.01%P ₂ O ₅ : 0.15%K ₂ O + 0.03%CaO	2019	Rooting, Vegetative, Flowering and fruiting
265	0300	2.5%N: 0.3%P ₂ O ₅ : 0.12%K ₂ O + TE	2021	Vegetative, Rooting, Flowering
266	0301	0.15%Zn, 0.5%Fe, 0.05%Cu	2019	stalk elongation and plant vein, plant respiration, cell wall strengthening
267	0302	18%N: 20%P ₂ O ₅ : 21%K ₂ O + TE	2019	Rooting, Vegetative, Flowering and fruiting
268	0303	12%N: 12%P ₂ O ₅ : 12%K ₂ O + TE	2019	Rooting, Vegetative, Flowering and fruiting
269	0304	6%Fe	2019	Plant respiration
270	0305	4.1%MgO , 1.12%B, 2.9%Zn 5.4%Fe, 0.67%Cu, 2.83%Mn, 0.048%Mo	2019	Rise soil pH, water and mineral transportation, Plant respiration, cell wall strengthening, fungal disease resistance, nitrogen balance
271	0306	0%N: 45%P ₂ O ₅ : 55%K ₂ O	2019	Rooting, vegetative, Flowering and fruiting

272	0307	2%MgO, 1.5%B, 4%Zn, 4%Fe, 0.5%Cu, 3%Mn, 0.05%Mo	2019	Rise soil pH, water and mineral transportation, Plant respiration, cell wall strengthening, fungal disease resistance, nitrogen balance
273	0308	12%N: 12%P ₂ O ₅ : 44%K ₂ O + 3%MgO + TE	2020	Rooting, Vegetative, Flowering and Fruiting, Rise the soil pH
274	0309	24%N: 24%P ₂ O ₅ : 14%K ₂ O	2020	Rooting, Vegetative, Flowering
275	0310	32%N: 10%P ₂ O ₅ : 20%K ₂ O + 20%S, 2%B 2%Zn, 2.8%Fe, 3.7%Cu, 2.7%Mn, 2%Mo, 2.8%Co	2020	Rooting, Vegetative, Flowering and fruiting, reduce soil pH, water and mineral transportation, stalk elongation and plant vein, Plant respiration, cell wall strengthening, fungal disease resistance, Nitrogen balance,
276	0311	16%N: 10%P ₂ O ₅ : 22%K ₂ O	2020	Rooting, Vegetative, Flowering
277	0312	12.17%K ₂ O + 71.07 % Humic acid	2020	Improve health of Seedling and reduce soil pH plant rooting
278	0313	24%N: 24%P ₂ O ₅ : 18%K ₂ O + 4%Mg, 4%S, TE	2020	Rooting, Vegetative, Flowering and Fruiting, pH regulator
279	0314	12%N: 45%P ₂ O ₅ : 20%K ₂ O + 2%CaO, 4%Mg, TE	2020	Rooting, Vegetative, Flowering and Fruiting, rise soil pH
280	0315	15%N: 10%P ₂ O ₅ : 45%K ₂ O + 4%Mg, 4%S, TE	2020	Rooting, Vegetative, Flowering and Fruiting soil pH regulator
281	0316	12%N +18%CaO, 3%Mg, 1%B, 2% Amin acid	2020	Vegetative, Flowering, rise soil pH
282	0317	19%N: 19%P ₂ O ₅ : 19%K ₂ O + Mg + TE	2020	Vegetative, rooting, Flowering and Fruiting
283	0318	12%N: 6%K ₂ O + 40%SO ₃	2020	Vegetative, flowering and fruiting, Reduce soil pH, Oil formation
284	0319	15%N: 24%P ₂ O ₅ : 12%K ₂ O	2020	Rooting, Vegetative, Flowering
285	0320	20%N: 20%P ₂ O ₅ : 18%K ₂ O + TE	2020	Rooting, Vegetative, Flowering
286	0321	5.65%N: 0.9%P ₂ O ₅ : 4.61%K ₂ O	2020	Rooting, Vegetative, Flowering

287	0322	20%N: 5%P ₂ O ₅ : 35%K ₂ O	2020	Rooting, Vegetative, Flowering
288	0323	23%K ₂ O + 11%MgO	2020	Flowering and fruiting, rise soil pH
289	0324	15%N: 10%P ₂ O ₅ : 45%K ₂ O	2020	Vegetative, Rooting, Flowering
290	0325	31%N: 11%P ₂ O ₅ : 15%K ₂ O	2021	Vegetative, Rooting, Flowering
291	0326	15%N: 10%P ₂ O ₅ : 45%K ₂ O + 4%MgO, 4%S,	2020	Rooting, Vegetative, soil pH regulator, Flowering and fruiting
292	0327	12%N: 12%P ₂ O ₅ : 12%K ₂ O	2020	Rooting, Vegetative, Flowering
293	0328	12%N	2020	Vegetative
294	0329	15%N: 15%P ₂ O ₅ : 15%K ₂ O + TE	2020	Vegetative, Rooting, Flowering
295	0330	19%N: 19%P ₂ O ₅ : 10%K ₂ O	2020	Vegetative, Rooting, Flowering
296	0332	2.3% N + 18.6% C/N, 42.8% OC, 38% OM,	2020	Rooting, Vegetative, Flowering and fruiting, soil drainage and aeration
297	0333	2% N: 0.1% P ₂ O ₅ : 4% K ₂ O + 8 g/l Mg, 20 g/l Amino Acid, 200 g/l Organic Matter, 8 g/l Humic Acid, 120 g/l Organic Sugar	2020	Rooting, Vegetative, Flowering and fruiting, Water retention, soil drainage and aeration, plant growth and pant respiration, reduce soil pH
298	0334	1.7% N + 2.1% MgO, 2.07% B, 0.02% Mo, 2.84% H ₂ SO ₃	2020	Vegetative, pH regulator, Flowering, H ₂ O and Mineral Transportation, Nitrogen balance
299	0335	38%N: 5%P ₂ O ₅ : 5%K ₂ O	2020	Vegetative, Rooting, Flowering
300	0336	13%N: 40%P ₂ O ₅ : 13%K ₂ O + TE	2020	Vegetative, Rooting, Flowering
301	0337	8%N: 2%P ₂ O ₅ : 8%K ₂ O	2020	Vegetative, Rooting, Flowering
302	0338	2%N: 11%P ₂ O ₅ : 11%K ₂ O	2020	Vegetative, Rooting, Flowering
303	0339	12%N: 18%P ₂ O ₅ : 12%K ₂ O	2021	Vegetative, Rooting, Flowering
304	0340	12%N: 18%P ₂ O ₅ : 12%K ₂ O	2021	Vegetative, Rooting, Flowering

305	0341	5%N: 5%P ₂ O ₅ : 45%K ₂ O + TE	2021	Vegetative, Rooting, Flowering
306	0342	14.8%N: 8.87%P ₂ O ₅ : 15.86%K ₂ O + 1.93% S	2021	Vegetative, Rooting, Flowering and fruiting, reduce soil pH
307	0343	19%N: 10%P ₂ O ₅ : 8%K ₂ O	2021	Vegetative, Rooting, Flowering
308	0344	15%N: 4.4%P ₂ O ₅ : 1.8%K ₂ O	2021	Vegetative, Rooting, Flowering
309	0345	10%N: 18%P: 24%K +0.5%Mg, 7%S, 0.012%Bo, 3%Xca	2021	Vegetative, Rooting, Flowering, pH regulator, H ₂ O and Mineral Transportation, Fruiting
310	0346	20%N: 20%P: 20%K + 100ppm Zn, 800ppm Fe, 140ppm Cu,150ppm Mn	2021	Rooting, Vegetative and Flowering, H ₂ O and Mineral Transportation, Plant respiration, cell wall strengthening and stalk elongation and plant veins, Resist fungal disease
311	0347	16.2%Zn	2021	stalk elongation and plant vein
312	0348	2.9%N	2021	Vegetative
313	0349	17%N:14%P:34%K +0.03%B, 0.06%Zn,0.01%Fe,0.05%Cu, 0.05%Mn, 0.001%Mo, 0.007%Amino Acid	2021	Vegetative, Rooting, Flowering, H ₂ O and Mineral Transportation
314	0351	19%N: 19%P ₂ O ₅ : 19%K ₂ O	2021	Rooting, Vegetative, Flowering
315	0352	11%Mo	2021	N-balance
316	0353	1.50% 1-Dodecane Sulfonic acid sodium salts	2021	Enhance H ₂ O solubility
317	0354	14%N: 9%P: 5%K +2%Mg	2021	Vegetative, Rooting, Flowering, Increasing Soil pH
318	0355	40%N + 6%S	2021	Vegetative, Fruiting, Oil formation, reduce soil pH Soil pH
319	0356	6.98%N: 3.88%P: 13.96%K	2021	Vegetative, Rooting, Flowering
320	0357	19%N: %P ₂ O ₅ + 6.24%S, 0.12%B	2021	Vegetative, Rooting and Flowering and Fruiting

321	0358	0.55%N:0.04%P,0.02%K + 6.30 Humic acid, 97.80%Organic Matter,48.80% Humic acid on dry matter	2017	Rooting, Vegetative, Flowering and fruiting, Water retention, soil drainage and aeration, plant growth and plant respiration, reduce soil pH
322	0359	33.5%Zn	2021	stalk elongation and plant veins
323	0360	6.5%Ca: 0.05%B: 15%Fulvic acid	Jul-21	Fruiting, H ₂ O and Mineral Transportation, H ₂ O retention
324	0361	15%Na	Jul-21	pH regulator
325	0362	35%N:1%P:1%K	Jul-21	Vegetative, Rooting, Flowering
326	0363	46%N: 0.1%Zn	Jul-21	Vegetative, stalk elongation and plant veins
327	0364	13%N:24%P ₂ O ₅ :12%K ₂ O +3%S: 2%MgO	Sep-21	Vegetative, Rooting, Flowering, pH regulator, stalk elongation and plant veins
328	0365	17%N:29%P ₂ O ₅ : 6%K ₂ O +0.5%S:0.2%Zn	Sept-2021	Vegetative, Rooting, Flowering, reduce soil pH Soil pH, stalk elongation and plant veins
329	0366	22%N:6% P:12%K	Sept-2021	Vegetative, Rooting, Flowering
330	0367	7%N:7%P:40%K+ 1%MgO	Nov 2021	Vegetative, Rooting, Flowering, Increasing Soil pH
331	0368	12%N:12%P:17%K	Dec-2021	Vegetative, Rooting and Flowering
332	0369	10%N :25%P	Dec-2021	Vegetative, Rooting
333	0370	15.5%N: 26% CaO	Dec-2021	Vegetative, Increase Soil pH
334	0371	50%K ₂ O + 17.5%S	Dec-2021	Flowering and reduce soil pH
335	0372	13%N:46%K	Dec-2021	Vegetative and Flowering
336	0373	45%CaO	Dec-2021	Fruiting, Increase Soil pH
337	0374	10.2%N +0.2%B:1%Cu:0.02%Mn :4%Zn	Dec-2021	Vegetative, H ₂ O and Mineral Transportation, Resist fungal disease, cell wall strengthening, Cell division and stalk elongation and plant veins

338	0375	8%N +1%S: 0.05%Mn: 0.05%Zn:0.10%Fe.	Dec-2021	Vegetative, pH regulator, Resist fungal disease, Cell division and plant metabolism
339	0376	12.1%B	Dec-2021	H ₂ O and Mineral Transportation and Enzyme production
340	0377	14.5%N	Dec-2021	Vegetative
341	0378	2.6%Mn	Dec-2021	Resist fungal disease, Cell division and plant metabolism
342	0379	18.5%CaO	Dec-2021	Fruiting
343	0380	9.8%N:21%P:36.7%K:1.9%Mn:0.7%Fe:0.7%B:1.1%Zn:1.9%Cu:2.5%Mo	Dec-2021	Rooting, Vegetative and Flowering, Resist fungal disease, Respiration, cell wall strengthening, H ₂ O and Mineral Transportation and stalk elongation and plant veins N-balance
344	0381	13%N:24%P ₂ O ₅ :10%K ₂ O	Jan-2022	Rooting, Vegetative and Flowering
345	0382	1.1%N: 39.6%P ₂ O ₅ : 0.11%K ₂ O.	Feb-22	Rooting, Vegetative and Flowering
346	0383	15%N: 9%P ₂ O ₅ : 20%K ₂ O + 8.5%S, 0.02%B, 0.06%Zn	Feb-22	Rooting, Vegetative and Flowering, pH regulator, H ₂ O and Mineral Transportation and stalk elongation and plant veins
347	0384	1.38%Zn: 1.37%Fe: 1.67%Mn	Feb-22	stalk elongation and plant veins, Plant respiration and plant cell division
348	0385	3%N:	Feb-22	Vegetative
349	0386	15.2%N:	Feb-22	Vegetative
350	0387	11.2%N: 10.2%P: 11.8%K	Feb-22	Rooting, Vegetative and Flowering
351	0388	14.80%N, 20.40%P ₂ O ₅ ,18.80%K ₂ O, 1.9%S,1.30%Mg,0.12%Zn,0.14%B,0.7%Fe,0.14%Mn,0.023%Cu,0.02%Mo	Feb-22	Rooting, Vegetative, Flowering, pH regulator, stalk elongation and plant veins and H ₂ O and Mineral Transportation
352	0389	12%N: 46%P ₂ O ₅ + 5%S, 0.5%Zn	Mar-22	Vegetative, Rooting, reduce soil pH soil pH and stalk elongation and plant veins

353	0390	15%N: 3%P ₂ O ₅ : 5%K ₂ O + 0.3%MgO, 20%S	Mar-22	Rooting, Vegetative, Flowering and pH regulator
354	0391	30%N: 0%P: 1%K +2.5%MgO, 18.5%SO ₃	Mar-22	Vegetative, Flowering, pH regulator, Oil formation
355	0392	16.98%N: 8.9%P ₂ O ₅ : 12.35%K ₂ O.	Apr-22	Rooting, Vegetative and Flowering
356	0393	3.98%N: 3.6%P ₂ O ₅ : 2.4%K ₂ O	Apr-22	Rooting, Vegetative and Flowering
357	0394	24%N: 24%P ₂ O ₅ : 18%K ₂ O + 0.9%MgO	Apr-22	Rooting, Vegetative, Flowering pH regulator
358	0395	50.5 mg/L N: 9.70mg/L P: 1670mg/L K + 0.83mg/L Mg	May-22	Rooting, Vegetative, Flowering, Increase Soil pH
359	0396	0.9%N: 0.43%P ₂ O ₅ : 3.25%K ₂ O + 0.45%Ca, 1.04%Mg	May-22	Rooting, Vegetative, Flowering, Fruiting, Increase Soil pH
360	0397	18.3%N: 21.4%P ₂ O ₅ : 41.6%K ₂ O	May-22	Rooting, Vegetative and Flowering
361	0398	0.65%N: 45% K ₂ O	May-22	Vegetative and Flowering
362	0399	25.2%N: 22.7%P: 17.5% K	May-22	Rooting, Vegetative and Flowering
363	0400	9.9%N: 21.5% P: 44.7% K	May-22	Rooting, Vegetative and Flowering
364	0401	26.6%K ₂ O + < 0.3%Cl	Jun-22	Flowering
365	0402	47.4%K ₂ O + < 0.15%Cl	Jun-22	Flowering
366	0403	140g/L N: 60g/L P + 470mg/L B, 684mg/L Zn, 1005g/L Fe, 510mg/L Cu, 510g/L Mn, 59mg/L Mo	Jun-22	Rooting, Vegetative and Flowering
369	0406	23 %N: 23 %P: 23 %K + 0.01 %B, 0.01 %Zn, 0.05 %Fe, 0.0006 %Cu, 0.03 %Mn, 0.004 %Mo.	Jun-22	Rooting, Vegetative, Flowering, pH regulator, stalk elongation and plant veins and H ₂ O and Mineral Transportation
370	0407	23 %N: 4 %P: 36 %K	Jun-22	Vegetative, Rooting,
371	0408	31 %K + 17.5 %Ca, 52.81 %S, 0.5 %Zn, 2.1%Fe, 0.03 %Cu	Jun-22	Flowering, Fruiting, reduce soil pH soil pH and stalk elongation and plant veins
379	0409	10%N: 18%P ₂ O ₅ : 24%K ₂ O + 9%SO ₃	Jun-22	Vegetative, Flowering, pH regulator, Oil formation

380	0410	+ 11%Fe	Jun-22	synthesis of Chlorophyll, Increase greenish of Leaves
381	0411	+ 32%Mn	Jun-22	Increase Pink coloration in the Flower, Increase stiffness of the flower
382	0412	+ 39.6%Mo	Jun-22	manufacturing of Organic and Inorganic Pigments in flowering plant
383	0413	10%N: 15%P ₂ O ₅ : 10%K ₂ O	Jul-22	Rooting, Vegetative, Flowering, Increase Soil pH
384	0414	3.0%N: 14.30%P ₂ O ₅ : 18.6%K ₂ O + 0.10%B, 0.10%Mn, 0.01%Mo	Jul-22	Rooting, Vegetative, Flowering, Fruiting, Increase Soil pH
385	0415	3%N: 20%P ₂ O ₅ + 5%CaO, 0.10%B, 0.10%Mo	Jul-22	Rooting, Vegetative and Flowering
386	0416	25%K ₂ O + 42%SO ₃	Jul-22	Flowering, Oil formation, Increase Soil pH
387	0417	8%N + 5%MgO, 10%CaO	Jul-22	Vegetative, Fruiting pH regulator
388	0418	26.0%N + 0.50%B, 0.05%Zn	Jul-22	Vegetative activate photosynthesis process
389	0419	28%Ca + 1%B.	Jul-22	Fruiting, activate photosynthesis process
390	0420	10%N: 5%P ₂ O ₅ : 40%K ₂ O+2%MgO,0.02%Zn, 0.01%B,0.00%Fe, 0.01% Mn, 0.00%Mo	Jul-22	Flowering, activate photosynthesis process
391	0421	11%N: 40%P: 11%K + 2%MgO, 0.002%Zn, 0.01%B,0.02%Fe, 0.01%Mn, 0.001%Mo	Jul-22	Rooting, Vegetative, Flowering pH regulator, Rooting, Vegetative, Flowering, Increase Soil pH activate photosynthesis process
392	0422	17% N: 17% P: 17% K + 0.4% Zn	Jul-22	Rooting, Vegetative, Flowering, pH regulator, Rooting, Vegetative, Flowering, Increase Soil pH
393	0423	18%N: 38%P: 0%K + 2%Ca, 0.1%Mg, 1.5%S, 0.1%B, 0.1%Zn	Jul-22	Flowering, Fruiting, reduce soil pH soil pH and stalk elongation and plant veins, activate photosynthesis process

394	0424	13%N: 26%P: 13%K + 2%Ca, 1%Mg, 0.1%B, 0.2%Zn, 0.2%Mn	Jul-22	Flowering, Fruiting, pH regulator, stalk elongation and plant veins and H ₂ O and Mineral Transportation, activate photosynthesis process
395	0425	22%N: 3.79%P: 12%K+ 4%Ca, 0.5%Mg, 3%S, 0.2%B, 0.4%Zn	Jul-22	Flowering, Fruiting, pH regulator, stalk elongation and plant veins and H ₂ O and Mineral Transportation
396	0426	11%N: 23%P: 22%K+ 1.5%Ca, 0.2%Mg, 2%S, 0.1%B, 0.1%Zn	Jul-22	Vegetative, Rooting, Flowering, Fruiting, pH regulator, stalk elongation and plant veins and H ₂ O and Mineral Transportation
397	0427	12%N: 25%P: 12%K + 4%Ca, 0.2%Mg, 3%S, 0.1%B, 0.2% Zn	Jul-22	Vegetative, Rooting, Flowering, Fruiting, pH regulator, stalk elongation and plant veins and H ₂ O and Mineral Transportation
398	0428	6%N: 2%P: 4%K	Jul-22	Vegetative, Rooting and Flowering
400	0430	17%N: 2%K + 20%CaO, 4%MgO, 0.02%B, 0.03%Cu, 0.06%Fe,0.03%Mn, 0.02%Mo, 0.02%Zn	Jul-22	Vegetative, Rooting, Flowering, Fruiting, pH regulator, stalk elongation and plant veins and H ₂ O and Mineral Transportation
401	0431	10%N: 5%P ₂ O ₅ : 40%K ₂ O + 0.01%B, 0.01%Zn, 0.05%Fe,0.006%Cu, 0.03%Mn, 0.004%Mo	Jul-22	Flowering, Fruiting, pH regulator, stalk elongation and plant veins and H ₂ O and Mineral Transportation
402	0432	20%N: 10%P ₂ O ₅ : 15%K ₂ O + 9.97%CaO, 0.55%MgO	Jul-22	Flowering, Fruiting, pH regulator, stalk elongation and plant veins and H ₂ O and Mineral Transportation
403	0433	10%N:10%P ₂ O ₅ : 20%K ₂ O+13%CaO, 1%MgO, 4%S, 0.5%B, 1%Zn	Jul-22	Flowering, Fruiting, pH regulator, stalk elongation and plant veins and H ₂ O and Mineral Transportation, activate photosynthesis process
404	429	0.5%B, 4%Zn, 4%Fe, 0.5%Cu, 2%Mn	Agost-22	Vegetative, Flowering, pH regulator, Resist fungal disease, Cell division and plant metabolism
406	435	18%N: 16%P ₂ O ₅ : 16%K ₂ O	Agost-22	Rooting, Vegetative and Flowering
407	436	0%N: 45%P: 25%K	Agost-22	Rooting and Flowering

408	437	23%N: 21%P ₂ O ₅ : 17%K ₂ O	Agost-22	Vegetative, Rooting and Flowering
409	438	9%N: 16%P ₂ O ₅ : 35%K ₂ O	Agost-22	Vegetative, Rooting and Flowering
410	439	229.5 mg/kg Zn, 34.4mg/kg Cu, 1.2 mg/kg Mo	Sep-22	Chlorophill Formation, Catalyst in growth process,Stimulate photosynthesis and respiration process, Enzymes activator
411	440	40.8% N	Sep-22	Vegetative
412	441	23.7 %N: 23.4 %P ₂ O ₅ : 19.1% K ₂ O	Sep-22	Vegetative, Rooting and Flowering
413	442	21%N: 19%P: 30%K + 1% Cu, 0.09%Mo	Sep-22	Vegetative, Rooting and Flowering,Catalyst in growth process, Nitrogen Fixation
414	443	5 %N: 3 %P ₂ O ₅ : 6 %K ₂ O + 5 %S, 0.2 %B, 0.25 %Zn, 0.01 %Cu, 0.01 %Mo	Sep-22	Vegetative, H ₂ O and Mineral Transportation, Resist fungal disease, cell wall strethening, Cell division and stalk elongation and plant veins
415	444	8.6 g/kg N: 24.7 g/kg P: 91.9 g/kg K	Sep-22	Vegetative, Rooting and Flowering
416	445	10 %P: 30 %K + 10 %Ca, 0.28 %Mg, 0.08 %Fe, 0.11 %Mn, 0.08 %Al, 4% Na, 3% Si	Sep-22	Rooting,Vegetative, H ₂ O and Mineral Transportation, Resist fungal disease, cell wall strethening, Cell division and stalk elongation and plant veins
417	446	23 %N: 15 %P ₂ O ₅ : 15 %K ₂ O	Sep-22	Vegetative, Rooting and Flowering
418	447	4.39 %N: 5.14 %P ₂ O ₅ : 18.43 %K ₂ O	Sep-22	Vegetative, Rooting and Flowering
419	434	240 g/L N: 240 g/L P ₂ O ₅ : 180g/L K ₂ O + 750g/L Fe, 300 g/L Mn	Oct-22	Vegetative, Rooting and Flowering,Chlorophyll Formation, Hasten germinationa and maturation
420	448	32 %N	Oct-22	Promotes rapid growth, formation and protein sythesis
421	449	5.3 %N: 18.8 %P205: 21.2 %K2O + 0.03 %CaO, 0.01 %MgO, 0.6 %ZnO	Oct-22	Vegetative, Rooting and Flowering,resistance to seedling disease and stiffness
422	450	K >10 ppm, Mg < 5 ppm, Ca < 5 ppm, Mn < 5 ppm	Oct-22	Flowering, drought resistance and disease, increase stalk and straw strength
423	451	9 %N: 8 %P2O5 + 13 %Ca, 0.01 %B, 0.01 %Zn, 0.02% Cu, 0.01 %Mn	Oct-22	Vegetative, Rooting, straw stiffness and disease resistance to seedling. Transportation and cell division, enzyme activation,Hastern germination and maturation
424	452	1.5 %Zn, 2 %Fe, 0.5 %Mn	Oct-22	Enzyme activation, chrophyll formation,Hastern germination and maturation

425	453	3%N: 15%P2O5 + 3%CaO, 6 %B, 7 %Zn, 1 %Mn, 0.1 % Mo	Oct-22	Vegetative, Rooting, straw stiffness and disease resistance to seedling. Transportation and cell division, enzyme activation, Hastern germination and maturation, N-fixation
426	454	10 %N: 18 %P: 24 %K + 0.5 %MgO, 7%S, 0.12 %B	Oct-22	Vegetative, Rooting, Flowering, regulate uptake other nutrients, oil formatio, impart dark green colour transportation and cell division,
427	455	10 %N: 18 %P: 24 %K + 3 %CaO, 0.5%MgO, 7 %S, 0.12%B	Oct-22	Vegetative, Rooting, Flowering, straw stiffness and disease resistance to seedling, regulate uptake other nutrients, oil formation, impart dark green colour transportation and cell division,
428	456	10.14 %N: 5.08 %P2O5: 40 %K + 102 ppm B, 210ppm Zn, 207 ppm Fe, 51 ppm Cu, 203 ppm Mn, 8ppm Mo,	Nov-22	Vegetative, Rooting, Flowering, Transportation and cell division, enzyme activation, Chlorophyll Formation, enzyme activation, Hastern germination and maturation, N-fixation
429	458	24 %N: 24 %P2O5: 18 % K ₂ O + 10 %Mg	Nov-22	Vegetative, Rooting, Flowering, straw stiffness and disease resistance to seedling and Regulate uptake of other nutrients
430	459	10 %N: 20 %P ₂ O ₅ : 45 % K ₂ O + 10 %Mg	Nov-22	Vegetative, Rooting, Flowering, straw stiffness and disease resistance to seedling and Regulate uptake of other nutrients
431	460	16%N: 42 %P ₂ O ₅ + 2 %Ca, 1.5% S	Nov-22	Vegetative, Flowering, straw stiffness and disease resistance to seedling, oil formation and pH regulator
432	462	40 %N + 6.5 %S	Nov-22	Vegetative,oil formation and pH regulator
433	463	24 %N: 24 %K ₂ O + 1 %Ca, 0.2 %Mg, 4 %S, 0.1 %B, 0.1 %Zn, 0.1 %Mn	Nov-22	Vegetative, Flowering, straw stiffness and disease resistance to seedling, regulate uptake other nutrients, oil formation, impart dark green colour transportation and cell division,
434	466	23 %N: 23 %P ₂ O ₅ : 23 %K ₂ O + 0.02 %B, 0.05 %Zn, 0.1%Fe, 0.05%Cu, 0.05%Mn	Nov-22	Vegetative, Rooting, Flowering, Transportation and cell division, enzyme activation, Chlorophyll Formation, enzyme activation, Hastern germination and maturation, N-fixation