Why Fertilizers ?

Plants need nutrients to grow which they absorb from the soil via the plant's root system. Fertilizers provide the major nutrients (nitrogen, phosphorus and potassium and important secondary elements) that plants need. Unless the nutrients are replenished, the soil's productive capacity declines with every harvest.

AC BROKERAGE S.R.O.

Provide you various options to help you grow up & improve your plants by its fertilizers & inspections services

AC BROKERAGE S.R.O.

AC BROKERAGE S.R.O.
Is Specialized In Fertilizers Supplies & Services.

AC BROKERAGE S.R.O.

Fertilizers Divided To Organic & Inorganic Fertilizer

AC BROKERAGE S.R.O

Is Concerned in Inorganic Fertilizer

(Nitrogen Fertilizer, Phosphorus & Potassium Fertilizer)

Fertilizer Methods

It depends on the Application forms :

Liquid Form

Solid Form

Liquid Forms

- **Starter Solution**
- **Application In Irrigation Water**
- **Direct Application To Soil / Injection**
- **Foliar Application**

Fertigation is a method of Liquid application fertilizer in which fertilizer is incorporated within the irrigation water by the drip system

Liquid fertilizers comprise anhydrous ammonia, aqueous solutions of ammonia, aqueous solutions of ammonium nitrate or urea. These concentrated products may be diluted with water to form a concentrated liquid fertilizer

Advantages of liquid fertilizer are its more rapid effect and easier coverage

Solid Forms

- **Broadcasting**
- **Placement**
- **Localized Placement**

About 90% of fertilizers are applied as solids. The most widely used solid inorganic fertilizers are urea, diammonium phosphate and potassium chloride.

Often solids are available as prills

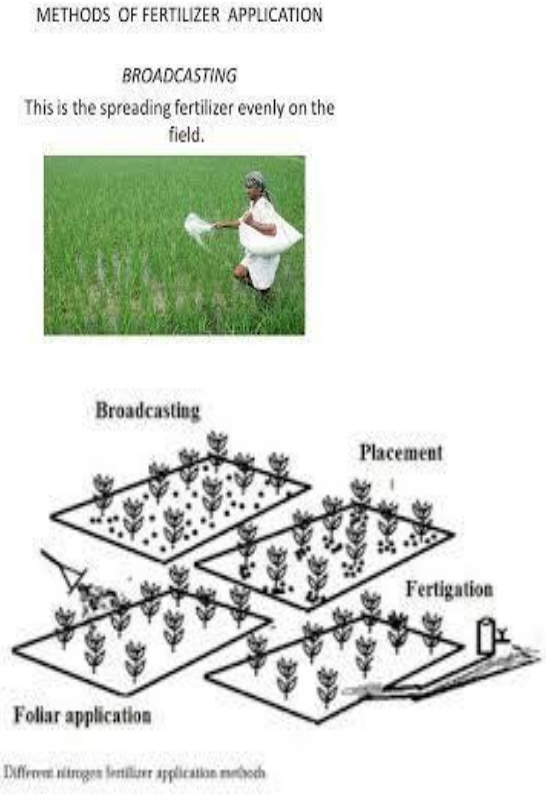

Fig. 5: Different nitrogen fertilizer application methods

Company Name produces different types of high quality granular fertilizers including :

Diammonium Phosphate DAP

Monoammonium Phosphate MAP

NP Different Grades

NPK Different Grades

Products	Chemical Specification	Physical Specification
DAP : Binary fertilizer consisting of two elements **Nitrogen** and **Phosphorus / Grade** 18-46-00	Total Nitrogen% ≥ 18	Particle Size (2.0-4.0mm)% ≥ 90
	Total Phosphorus Penta Oxide T P2O5% ≥ 46	Particle Size (below 1.0mm)% ≤1.0
	(Water Soluble)Phosphorus Penta Oxide% ≥ 40	
	Moisture% ≤ 1.5	

Products	Chemical Specification	Physical Specification
MAP :Binary fertilizer consisting of two elements Nitrogen and Phosphorus / Grade 11-52-00	Ammoniacal Nitrogen% ≥ 11	Particle Size (2.0-4.0mm)% ≥ 90
	Total Phosphorus Penta Oxide T P2O5% ≥ 52	Particle Size (below 1.0mm)% ≤ 1.0
	(Water Soluble)Phosphorus Penta Oxide% ≥ 47.5	
	(Water Soluble) Potassium Oxide% 0.0	
	Moisture% ≤ 1.5	

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NP : Binary fertilizer consisting of two elements Nitrogen and Phosphorus

DAP Grades

16-20-00+13S

16-20-00+13S+TE

19-38-00+6S

12-46-00+5S

20-20-00+13S

13-40-00+7S

13-40-00+7S+TE

10.4-48-00+4MN

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NP Grade 16-20-00+13S

Chemical Specification	Physical Specification
Ammoniacal Nitrogen% ≥ 16	Particle Size (2.0-4.0mm)% ≥ 90
Total Phosphorus Penta Oxide T P2O5% ≥ 20	Particle Size (below 1.0mm)% ≤ 1.0
(Water Soluble)Phosphorus Penta Oxide% ≥ 17	
Sulfur S% ≥ 13	
Moisture% ≤ 1	

NP Grade 16-20-00+13S+TE

Chemical Specification	Physical Specification
Ammoniacal Nitrogen% ≥ 16	Particle Size (2.0-4.0mm)% ≥ 90
Total Phosphorus Penta Oxide T P2O5% ≥ 20	Particle Size (below 1.0mm)% ≤1.0
(Water Soluble)Phosphorus Penta Oxide% ≥ 17	
Sulfur S% ≥ 13	
Moisture% ≤ 1	
Zinc% ≥ 0.2	
Copper% ≥ 0.1	

NP : Binary fertilizer consisting of two elements Nitrogen and Phosphorus

DAP Grades

16-20-00+13S

16-20-00+13S+TE

19-38-00+6S

12-46-00+5S

20-20-00+13S

13-40-00+7S

13-40-00+7S+TE

10.4-48-00+4MN

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NP Grade 19-38-00+6S

Chemical Specification	Physical Specification
Total Nitrogen% ≥ 19	Particle Size (2.0-4.0mm)% ≥ 90
Total Phosphorus Penta Oxide T P2O5% ≥ 38	Particle Size (below 1.0mm)% ≤ 1.0
(Water Soluble)Phosphorus Penta Oxide% ≥ 33	
Sulfur S% ≥ 6.0	
Moisture% ≤ 2	

NP Grade 12-46-00+5S

Chemical Specification	Physical Specification
Ammoniacal Nitrogen% ≥ 12	Particle Size (2.0-4.0mm)% ≥ 90
Total Phosphorus Penta Oxide T P2O5% ≥ 46	
(Water Soluble)Phosphorus Penta Oxide% ≥ 42	Particle Size (below 1.0mm)% ≤ 1.0
Sulfur % ≥ 5	
Moisture% ≤ 1.5	

NP : Binary fertilizer consisting of two elements Nitrogen and Phosphorus

DAP Grades

16-20-00+13S

16-20-00+13S+TE

19-38-00+6S

12-46-00+5S

20-20-00+13S

13-40-00+7S

13-40-00+7S+TE

10.4-48-00+4MN

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NP Grade 20-20-00+13S

Chemical Specification	Physical Specification
Total Nitrogen% ≥ 20	Particle Size (2.0-4.0mm)% ≥ 90
Total Phosphorus Penta Oxide T P2O5% ≥ 20	Particle Size (below 1.0mm)% ≤ 1.0
(Water Soluble)Phosphorus Penta Oxide% ≥ 17	
Sulfur S% ≥ 13	
Moisture% ≤ 1	

NP Grade 13-40-00+7S

Chemical Specification	Physical Specification
Ammoniacal Nitrogen% ≥ 13	Particle Size (2.0-4.0mm)% ≥ 90
Total Phosphorus Penta Oxide T P2O5% ≥ 40	Particle Size (below 1.0mm)% ≤ 1.0
(Water Soluble)Phosphorus Penta Oxide% ≥ 36	
Sulfur % ≥ 7	
Moisture% ≤ 1.5	

NP : Binary fertilizer consisting of two elements Nitrogen and Phosphorus

DAP Grades

16-20-00+13S

16-20-00+13S+TE

19-38-00+6S

12-46-00+5S

20-20-00+13S

13-40-00+7S

13-40-00+7S+TE

10.4-48-00+4MN

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NP Grade 13-40-00+7S+TE

Chemical Specification		Physical Specification	
Ammoniacal Nitrogen%	≥ 13	Particle Size (2.0-4.0mm)%	≥ 90
Total Phosphorus Penta Oxide T P2O5%	≥ 40	Particle Size (below 1.0mm)%	≤ 1.0
(Water Soluble)Phosphorus Penta Oxide%	≥ 36		
Sulfur %	≥ 7		
Moisture%	≤ 1.5		
Zinc%	≥ 0.5		

NP Grade 10.4-48-00+4MN

Chemical Specification		Physical Specification	
Ammoniacal Nitrogen%	≥ 10.4	Particle Size (2.0-4.0mm)%	≥ 90
Total Phosphorus Penta Oxide T P2O5%	≥ 48	Particle Size (below 1.0mm)%	≤ 1.0
(Water Soluble)Phosphorus Penta Oxide%	≥ 43.5		
Sulfur %	≥ 1		
Moisture%	≤ 1.5		
Manganese%	≥ 4		

NPK : Ternary fertilizer consisting of three elements Nitrogen, Phosphorus and Potassium NPK Grades :

14-14-14+11.5S

15-15-15+10S

12-30-12

12-30-12+TE

16-16-8+13S

10-28-15+5S

10-28-15+5S+TE

8-16-30

9-24-13+3MgO

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NPK Grade 14-14-14+11.5S

Chemical Specification		Physical Specification
Ammoniacal Nitrogen%	≥ 14	Particle Size (2.0-4.0mm)% ≥ 90
(Total) Phosphorus Penta Oxide%	≥ 14	Particle Size (below 1.0mm)% ≤ 1.0
(Water Soluble) Phosphorus Penta Oxide%		
(Water Soluble) Potassium Oxide%		
Sulfur %	≥ 11.5	
Moisture%	≤ 1.5	

NPK Grade 15-15-15+10S

Chemical Specification		Physical Specification
Total Nitrogen%	≥15	Particle Size (2.0-4.0mm)% ≥ 90
(Total) Phosphorus Penta Oxide%	≥15	Particle Size (below 1.0mm)% ≤ 1.0
(Water Soluble) Phosphorus Penta Oxide%	≥13	
(Water Soluble) Potassium Oxide%	≥15	
Sulfur%	≥10	
Moisture%	≤ 1	

NPK : Ternary fertilizer consisting of three elements Nitrogen, Phosphorus and Potassium NPK Grades :

14-14-14+11.5S

15-15-15+10S

12-30-12

12-30-12+TE

16-16-8+13S

10-28-15+5S

10-28-15+5S+TE

8-16-30

9-24-13+3MgO

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NPK Grade 12-30-12

Chemical Specification	Physical Specification
Ammoniacal Nitrogen% ≥ 12	Particle size (2.0-4.0mm) ≥ 90
(Total) Phosphorus Penta Oxide% ≥ 30	Particle Size (below 1.0mm)% ≤ 1.0
(Water Soluble) Phosphorus Penta Oxide% ≥ 25	
(Water Soluble) Potassium Oxide% ≥ 12	
Moisture% ≤ 1.5	

NPK Grade 12-30-12+TE

Chemical Specification	Physical Specification
Ammoniacal Nitrogen% ≥ 12	Particle size (2.0-4.0mm) ≥ 90
(Total) Phosphorus Penta Oxide% ≥ 30	Particle Size (below 1.0mm)% ≤ 1.0
(Water Soluble) Phosphorus Penta Oxide% ≥ 25	
(Water Soluble) Potassium Oxide% ≥ 12	
Moisture% ≤ 1.5	
Zinc% ≥ 0.2	
Copper% ≥ 0.1	

NPK : Ternary fertilizer consisting of three elements Nitrogen, Phosphorus and Potassium NPK Grades :

14-14-14+11.5S

15-15-15+10S

12-30-12

12-30-12+TE

16-16-8+13S

10-28-15+5S

10-28-15+5S+TE

8-16-30

9-24-13+3MgO

AC BROKERAGE S.R.O.

NPK Grade 16-16-8+13S

Chemical Specification		Physical Specification
Ammoniacal Nitrogen%	≥ 16	Particle size (2.0-4.0mm) ≥ 90
(Total) Phosphorus Penta Oxide%	≥ 16	Particle Size (below 1.0mm)% ≤ 1.0
(Water Soluble) Phosphorus Penta Oxide%	≥ 13	
(Water Soluble) Potassium Oxide%	≥ 8	
Sulfur %	≥ 13	
Moisture%	≤ 1.5	

NPK Grade 10-28-15+5S

Chemical Specification		Physical Specification
Ammoniacal Nitrogen%	≥ 10	Particle size (2.0-4.0mm) ≥ 90
(Total) Phosphorus Penta Oxide%	≥ 28	Particle Size (below 1.0mm)% ≤ 1.0
(Water Soluble) Phosphorus Penta Oxide%	≥ 24	
(Water Soluble) Potassium Oxide%	≥ 15	
Sulfur %	≥ 5	
Moisture%	≤ 1.5	

NPK : Ternary fertilizer consisting of three elements Nitrogen, Phosphorus and Potassium NPK Grades :

14-14-14+11.5S

15-15-15+10S

12-30-12

12-30-12+TE

16-16-8+13S

10-28-15+5S

10-28-15+5S+TE

8-16-30

9-24-13+3MgO

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NPK Grade 10-28-15+5S+TE

Chemical Specification		Physical Specification	
Ammoniacal Nitrogen%	≥ 10	Particle size (2.0-4.0mm)	≥ 90
(Total) Phosphorus Penta Oxide%	≥ 28	Particle Size (below 1.0mm)%	≤ 1.0
(Water Soluble) Phosphorus Penta Oxide%	≥ 24		
(Water Soluble) Potassium Oxide%	≥ 15		
Sulfur %	≥ 5		
Moisture%	≤ 1.5		
Zinc%	≥ 0.2		
Copper%	≥ 0.1		

NPK Grade 8-16-30

Chemical Specification		Physical Specification	
Ammoniacal Nitrogen%	≥ 8	Particle size (2.0-4.0mm)	≥ 90
(Total) Phosphorus Penta Oxide%	≥ 16	Particle Size (below 1.0mm)%	≤ 1.0
(Water Soluble) Phosphorus Penta Oxide%	≥ 13.5		
(Water Soluble) Potassium Oxide%	≥ 30		
Moisture%	≤ 1.5		

NPK : Ternary fertilizer consisting of three elements Nitrogen, Phosphorus and Potassium NPK Grades :

14-14-14+11.5S

15-15-15+10S

12-30-12

12-30-12+TE

16-16-8+13S

10-28-15+5S

10-28-15+5S+TE

8-16-30

9-24-13+3MgO

AC BROKERAGE S.R.O.

NPK Grade 9-24-13+3MgO

Chemical Specification		Physical Specification
Ammoniacal Nitrogen%	≥ 9	Particle size (2.0-4.0mm) ≥ 90
(Total) Phosphorus Penta Oxide%	≥ 23	Particle Size (below 1.0mm)% ≤ 1.0
(Water Soluble) Phosphorus Penta Oxide%	≥ 20	
(Water Soluble) Potassium Oxide%	≥ 13	
Magnesium Oxide %	≥ 3	
Moisture%	≤ 1.5	

NPK Grade10-20-20+7S

Chemical Specification		Physical Specification
Ammoniacal Nitrogen%	≥ 10	Particle size (2.0-4.0mm) ≥ 90
(Total) Phosphorus Penta Oxide%	≥ 20	Particle Size (below 1.0mm)% ≤ 1.0
(Water Soluble) Phosphorus Penta Oxide%	≥ 17	
(Water Soluble) Potassium Oxide%	≥ 20	
Sulfur %	≥ 7	
Moisture%	≤ 1.5	

NPK : Ternary fertilizer consisting of three elements Nitrogen, Phosphorus and Potassium NPK Grades :

14-14-14+11.5S

15-15-15+10S

12-30-12

12-30-12+TE

16-16-8+13S

10-28-15+5S

10-28-15+5S+TE

8-16-30

9-24-13+3MgO

AC BROKERAGE S.R.O.

NPK Grade 10-20-20+7S+TE

Chemical Specification		Physical Specification
Ammoniacal Nitrogen%	≥ 10	Particle size (2.0-4.0mm) ≥ 90
(Total) Phosphorus Penta Oxide%	≥ 20	Particle Size (below 1.0mm)% ≤ 1.0
(Water Soluble) Phosphorus Penta Oxide%	≥ 17	
(Water Soluble) Potassium Oxide%	≥ 20	
Sulfur %	≥ 7	
Moisture%	≤ 1.5	
Zinc%	≥ 0.2	
Copper%	≥ 0.1	

NPK Grade 10-26-26

Chemical Specification		Physical Specification
Total Nitrogen%	≥ 10	Particle size (2.0-4.0mm) ≥ 90
(Total) Phosphorus Penta Oxide%	≥ 26	Particle Size (below 1.0mm)% ≤ 1.0
(Water Soluble) Phosphorus Penta Oxide%	≥ 22.1	
(Water Soluble) Potassium Oxide%	≥ 26	
Moisture%	≤ 1.5	

NPK : Ternary fertilizer consisting of three elements Nitrogen, Phosphorus and Potassium NPK Grades :

14-14-14+11.5S

15-15-15+10S

12-30-12

12-30-12+TE

16-16-8+13S

10-28-15+5S

10-28-15+5S+TE

8-16-30

9-24-13+3MgO

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NPK Grade 12-12-17+2MgO

Chemical Specification		Physical Specification
Ammoniacal Nitrogen%	≥ 12	Particle size (2.0-4.0mm) ≥ 90
(Total) Phosphorus Penta Oxide%	≥ 12	Particle Size (below 1.0mm)% ≤ 1.0
(Water Soluble) Phosphorus Penta Oxide%	≥ 10.2	
(Water Soluble) Potassium Oxide%	≥ 17	
Magnesium Oxide % %	≥ 2	
Moisture%	≤ 1.5	

NPK Grade 8-19-28+4S

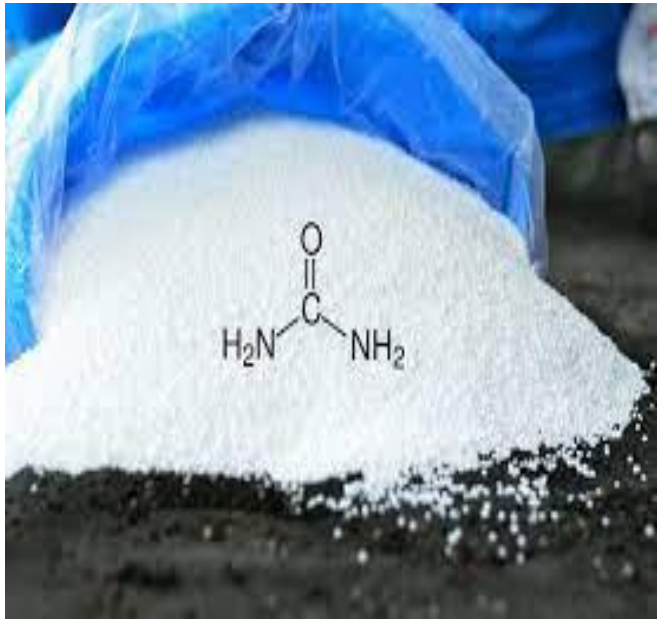
Chemical Specification		Physical Specification
Total Nitrogen%	≥ 8	Particle size (2.0-4.0mm) ≥ 90
(Total) Phosphorus Penta Oxide%	≥ 19	Particle Size (below 1.0mm)% ≤ 1.0
(Water Soluble) Phosphorus Penta Oxide%	≥ 16	
(Water Soluble) Potassium Oxide%	≥ 28	
Sulfur %	≥ 4	
Moisture%	≤ 1.5	

UREA

Urea is the most important nitrogenous fertilizer in the country because of its high N content (46%N). Besides its use in the crops, it is used as a cattle feed supplement to replace a part of protein requirements

It has also numerous industrial uses notably for production of plastics. Although urea often offers farmers the most nitrogen for the lowest price on the market, special steps must be taken when applying urea to the soil to prevent the loss of nitrogen through a chemical reaction.

Chemical Specification	Physical Specification
Moisture % by weight, ≤ 1.0	Particle size, Minimum 90% of the material be retained on 1 mm and 2.8 mm IS sieve.
Total N % by weight (on dry basis) ≥ 46.0	
Biuret % by weight, ≥ 1.5	
Neem oil content soluble in Benzene,% by weight, ≤ 0.035	



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NPK

NPK complex fertilizers produced are DAP based grades. At present two grades Grade I - 10:26:26 and Grade II - 12:32:16 are produced.

NPK complexes are bagged in quality tested HDPE bags to prevent ingress of moisture to avoid cause caking.

Technical specifications	NPK-10:26:26	NPK-12:32:16	Zincated-NPK-12:32:16	Ammonium Phosphate Sulphate (20-20- 0-13)
Moisture % by weight, maximum	≤ 1.5	≤ 1.5	≤ 1.5	≤ 1.0
Total N % by weight, minimum	≥ 10.0	≥ 12.0	≥ 12.0	-
Ammoniacal N % by weight, minimum	≥ 7.0	≥ 9.0	≥ 9.0	≥ 18.0
Available phosphorus (as P_2O_5) % by weight, minimum	≥ 26.0	≥ 32.0	≥ 32.0	≥ 20.0
Water soluble phosphates (as P_2O_5) % by weight, minimum	≥ 22.5	≥ 27.5	≥ 27.5	-
Water soluble potash (as K_2O) % by weight, minimum	≥ 26.0	≥ 16.0	≥ 16.0	-
Water soluble phosphorus (as P_2O_5), percent by weight, minimum	-	-	-	≥ 17.0
Zinc (as Zn) per cent by weight, minimum	-	-	≥ 0.5	-
Total Nitrogen (ammoniacal + urea), percent by weight, minimum	-	-	-	≥20.0
Sulphate Sulphur (as S), percent by weight minimum	-	-	-	≥ 13.0
Particle size	≥ 90 percent of the material shall be retained between 1mm and 4 mm IS sieve.	≥ 90 percent of the material shall be retained between 1mm and 4 mm IS sieve.	≥ 90 percent of the material shall be retained between 1mm and 4 mm IS sieve.	≥ 90 percent of the material shall be retained between 1mm and 4 mm IS sieve.

NPK

NPK complex fertilizers produced are DAP based grades. At present two grades Grade I - 10:26:26 and Grade II - 12:32:16 are produced.

Typical composition of DAP/NPK complex grades (by weight)

Technical specifications &Ingredients	DAP	NPK-10:26:26	NPK-12:32:16
Moisture	0.9	0.8	0.85
Urea	3.09	1.5	1.63
Muriate of Potash	-	43.98	26.88
Filler (silica sand)	8.48	3.6	7.96
Diammonium phosphate	87.53	50.04	62.68

Secondary/micro nutrients

Particulars	DAP	NPK-10:26:26	NPK-12:32:16
Sulphur as S	0.48	0.88	0.66
Iron as Fe	0.31	0.4	0.25
Aluminum as Al	0.32	0.52	0.18
Calcium as Ca	0.12	0.11	0.09
Magnesium as Mg	0.26	0.34	0.31
Zinc as Zn (ppm)	103	98	88
Copper as Cu	55	32	27

Atomic Weight

Element	Atomic Weight
C	12
H	1
O	16
N	14
P	31
K	39
Ca	40
S	32
Cl	35

Conversion Factors

Elements	Conversion Factors
P to P_2O_5	2.29
P_2O_5 to P	0.44
K to K_2O	1.2
K_2O to K	0.83

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NP

An Ammonium Phosphate Sulphate Fertilizer. Besides two macro-nutrients (Nitrogen and Phosphorus), it provides Sulphur-the fourth most important nutrient.

AC BROKERAGE S.R.O.

NP Grade 20:20:0:13

Technical specifications	NP Grade 20:20:0:13
Moisture % by weight, maximum	≤ 1.5
Total Nitrogen, percent by weight, minimum	≥ 20.0
Ammoniacal Nitrogen, percent by weight, minimum	≥ 18.0
Nitrogen in the form of urea, percent by weight, maximum	≤ 2.0
Neutral Ammonium Citrate soluble Phosphates(as P_2O_5), percent by weight, minimum	≥ 20.0
Water soluble phosphates (as P_2O_5), percent by weight, minimum	≥ 17.0
Sulphate Sulphur (as S), percent by weight minimum	≥ 13.0
Particle size	≥ 90 percent of material shall be retained between 1mm and 1mm IS sieve.

DAP

It is the most popular phosphatic fertilizer because of its high analysis and good physical properties.

The composition of DAP is N-18% and P2O5 -46%.

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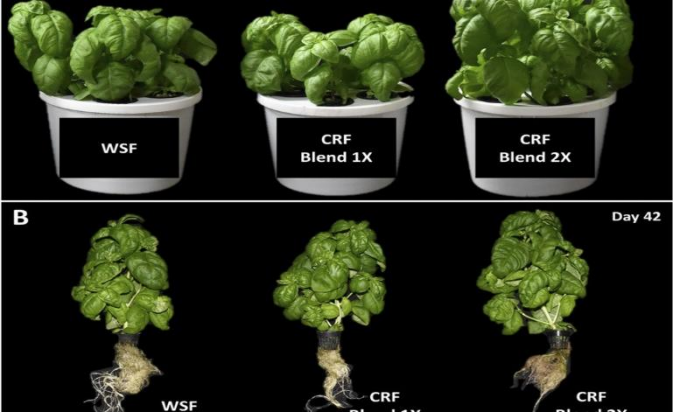
DAP Grade 18-46-0

Technical specifications	DAP Grade 18-46-0
Moisture % by weight, maximum	≤ 2.5
Total Nitrogen, percent by weight, minimum	≥ 18
Ammoniacal Nitrogen, percent by weight, minimum	≥ 15.5
Available Phosphorus (as P_2O_5)% by weight, minimum	≥ 46.0
Water Soluble Phosphorus (as P2O5)% by weight, minimum	≥ 39.5
Particle size	≥ 90 percent of material shall be retained between 1mm and 1mm IS sieve.



WATER SOLUBLE FERTILIZERS (WSF)

WSF are fertilizers that can be dissolved in water and added or leached out of the soil easily

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WSF Advantage:

Based on integration technology of water and fertilizer, synchronous supply can be achieved,not only saving water and fertilizer, but also increasing fertilizer use efficiency up to more than 60%.

FCO Specifications of 100% water soluble fertilizers

Technical specifications	Urea Phosphate 17:44:0	Sulphate Of potash 0:0:50	Urea Phosphate with SOP 18:18:18	Calcium Nitrate	Potassium Nitrate (13:0:45)	Mono Potassium Phosphate (0:52:34)	Mono Ammonium Phosphate (12:61:0)
Moisture per cent by weight, maximum	≤ 0.5	≤ 1.5	≤ 0.5	-	≤ 0.5	≤ 0.5	≤ 0.5
Total Nitrogen (all in urea form), percent by weight, minimum	≥ 17.0	-	-	-	-	-	-
Water soluble phosphorus (as P_2O_5),percent by weight minimum	≥ 44.0	-	-	-	-	≥ 52.0	≥ 61.0
Matter insoluble in water, pe cent by weight, maximum	≤ 0.5	-	-	≤ 1.5	≤ 0.5	-	≤ 0.5
Water soluble potassium (as K_2O), percent by weight, minimum	-	≥ 50	≥ 18.0	-	-	≥ 34.0	-
Sulphate Sulphur (as S), percent by weight, minimum	-	≥ 17.5	≥ 6.1	-	-	-	-
Total chlorides (as Cl), percent by weight, (on dry basis), maximum	-	≤ 2.5	-	-	-	-	-
Sodium as NaCl, percent by weight, maximum	-	≤ 2.0	-	-	-	≤ 0.5	≤ 0.5
Total chlorides (as Cl), percent by weight, maximum	-	≤ 2.5	-	-	≤ 1.5	-	-
Urea nitrogen percent by weight, minimum	-	-	≥ 18.0	-	-	-	-
Nitrate Nitrogen (ammoniacal and Nitrate form) percent by weight, minimum	-	-	-	≥ 15.5	-	-	-
Nitrate Nitrogen as N, percent by weight, minimum	-	-	-	≥ 14.5	-	-	-
Water soluble calcium (as Ca) percent by weight minimum	-	-	-	≥ 18.5	-	-	-
Total Nitrogen (all in Nitrate form) percent by weight, minimum	-	-	-	-	≥ 13.0	-	-
Water soluble potassium (as K2s/sub>O) percent by weight, minimum	-	-	-	-	≥ 45.0	-	-
Sodium as (Na) percent by weight, maximum	-	-	-	-	≤ 1.0	-	-
Ammoniacal nitrogen percent by weight, minimum	-	-	-	-	-	-	≥ 12.0
Water Soluble phosphorus (as P_2O_6) percent by weight, minimum	-	-	≥ 18.0	-	-	-	-

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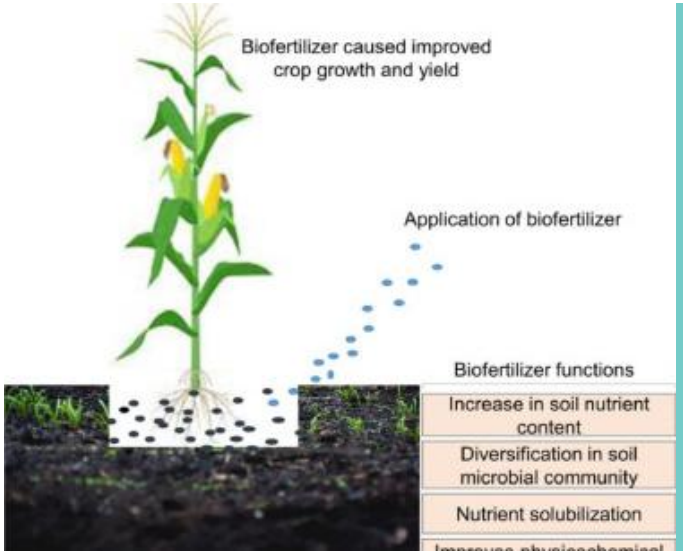

BIO Fertilizers

Biofertilizers are the substance that contains microbes, which helps in promoting the growth of plants and trees by increasing the supply of essential nutrients to the plants. It comprises living organisms which include mycorrhizal fungi, blue-green algae, and bacteria

BIO Fertilizer	Description	Beneficiary Crops
Phosphate Solubilizing Micro Organism	Several soil bacteria and fungi possess the ability to bring insoluble phosphates into soluble forms by secreting organic acids.	They can be applied to and recommended for all crops
Rhizobium	It is the most important nitrogen fixing organism. It live symbiotically in the root nodules of leguminous plants and supply nitrogen to the plant through nitrogen fixation. Besides, supplying nitrogen to the crop, nitrogen fixed by legume - Rhizobia association would also leave residual nitrogen for the succeeding crops.	Groundnut, Soybean, Red-gram, Green-gram, Black-gram, Lentil, Cow pea, Bengal-gram and Fodder legumes
Azotobacter	It is non symbiotic nitrogen fixing bacteria The Azotobacter performs well if the soil organic matter content is high.	Recommended for non leguminous crops like Paddy, Wheat, Millets, Cotton, Tomato, Cabbage, Mustard, Safflower and Sunflower.
Acetobacter	It is a symbiotic bacteria capable of fixing atmospheric nitrogen by living within the sugar plant. They are found in all parts of plant body.	Suitable for sugarcane cultivation.
Potassium Mobilizing Biofertilizer (KMB)	Potassium (K) availability in soil is also influenced by microbial activities in the rhizosphere which releases K from the non-exchangeable reserve. These microorganisms are commonly known as potassium solubilizing bacteria or potassium dissolving bacteria. The most important potassium solubilizing bacteria are silicate bacteria such as Bacillus mucilaginous, B. edaphicus, B. glucanolyticus and B. circulans.	
Zinc Solubilizing Biofertilizer (ZSB)	Some microbes have efficiency to solubilize zinc from the insoluble form by secretion of some organic acids, and these are known as zinc solubilizing bacteria are mainly belongs to genus of Bacillus.	
NPK Liquid Consortia	Consortium of Rhizobium, Azotobacter and Acetobacter, PSB and KMB is prepared for Nitrogen, Phosphorus and potassium to the crops.	

SECONDARY AND MICRONUTRIENTS

Calcium (Ca), magnesium (Mg), and sulfur (S) are essential plant nutrients for corn production. They are called secondary macronutrients because plants require them in smaller amounts than primary macronutrients (nitrogen, phosphorus, and potassium)

13 Nutrients are Called Secondary Nutrients (Micronutrients) :

- -Carbon (C)
- -Calcium (Ca)
- -Sulfur (S)
- -Copper (Cu)
- -Oxygen (O2)
- -Hydrogen (H)
- -Magnesium (Mg)
- -Manganese (Mn)
- -Molybdenum (Mo)
- -Iron (Fe)
- -Zinc(Zn)
- -Boron (B)
- -Chlorine (Cl)

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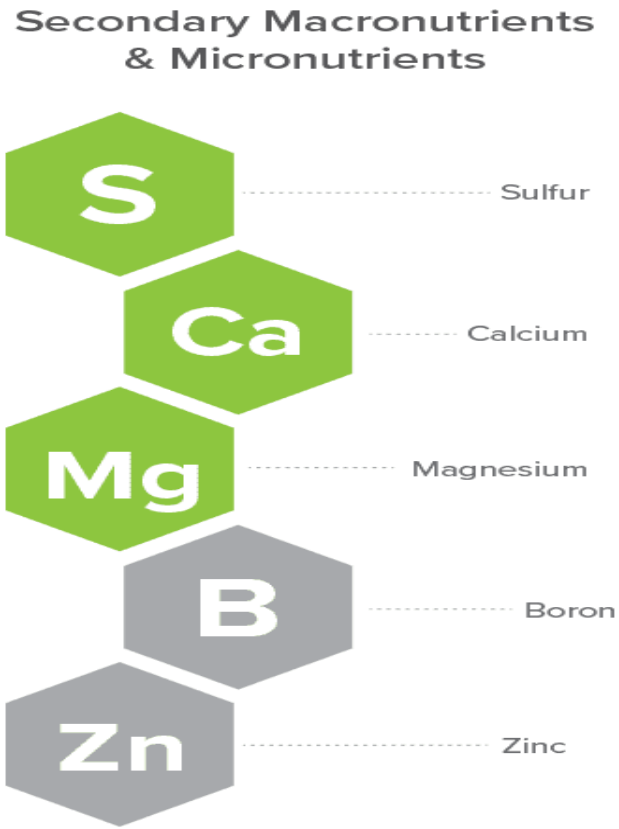
Zinc Sulphate Mono- hydrate (ZnSO4. H2O)

Technical specifications	(ZnSO4. H2O)
Matter- insoluble in water per cent by weight, maximum	≤ 1.0
Zinc (as Zn) per cent by weight, minimum	≥ 33.0
Lead (as Pb) per cent by weight, maximum	≤ 0.003
Iron (as Fe) per cent by weight, maximum	≤ 1.0
pH (5% solution) not less than	4.0
Sulphate Sulphur (as S) per cent by weight, minimum	≥ 15.0
Cadmium (as Cd) per cent by weight, maximum	≤ 0.0025
Arsenic (as As) per cent by weight, maximum	≤ 0.01



SECONDARY AND MICRONUTRIENTS

BENTONITE SULPHUR

BENTONITE SULPHUR

Technical specifications	Sulphur 90 % (Granular)	Sulphur 90 % (Powder)	Magnesium Sulphate	Di-Sodium Tetra Borate Penta Hydrate
Moisture percent by weight, maximum	≤ 0.5	≤ 1.0	-	-
Total Sulphur (as S) percent by weight, minimum	≥ 90.0	≥ 90.0	≥ 12.0	-
Particle size - Minimum	≥ 90 percent of the material shall be retained between 1mm and 4 mm IS sieve	-	-	-
Magnesium (as Mg) per cent by weight, minimum	-	-	≥ 9.5	-
Matter insoluble in water per cent by weight, maximum	-	-	≥ 1.0	≥ 1.0
PH (5% solution)	-	-	5.0-8.0	-
Lead (as Pb) per cent by weight, maximum	-	-	≤ 0.003	≤ 0.001
Cadmium (as Cd) per cent by weight, maximum	-	-	≤0.0025	≤ 0.0025
Arsenic (as As) per cent by weight, maximum	-	-	≤ 0.01	≤ 0.001
Boron (as B) per cent by weight, minimum	-	-	-	≥ 14.5

Plant Growth Product

It is a seaweed extract (28% w/w) based growth product, derived from the sap of red & brown algae, works as a metabolic bio enhancer, contains inherent nutrients, vitamins, plant growth hormones like auxin, cytokinin and gibberellins, betaines and mannitol etc. available in Liquid and Granular form for application in different crops as soil, root treatment, drip and foliar application method for the benefit of farmers

Potassium Nitrate

Potassium nitrate is a water-soluble NK fertilizer containing 13.7% nitrate nitrogen and 46% potassium oxide (38.4%)

Grades Of Potassium Nitrate

-Standard (NOP) 13-0-46

-Acidic 13-0-46 - pH 3.0-4.0

-NK 13-0-44+1%Mg

Uses	Crops
Direct application	Flowers ,cotton
NPK and NK granulation or ammoniation	Vegetables, potatoes,,,
NPK and NK bulk blending	strawberries
liquid and suspension fertilizers	potted plants
fertigation (sprinkler, mini sprinklers and drip irrigation)	olives
foliar sprays, foliar NPK fertilizers,	fruit trees bananas, mango, pineapples ,Grapes
starter and transplant solutions	citrus
winter hardener	lawns
winter breaking dormancy sprays	tobacco
flowering inducement sprays.	home gardens

Potassium Nitrate (NOP) 13-0-46

Technical specifications	Unit	TYPICAL	GUARANTEED
Purity KNO_3	w/w %	99	99
Total Nitrogen (N)	w/w %	13.7	min 13.0
Total Potassium (K)	w/w %	38.3	min 37.6
Total potassium oxide (K_2O)	w/w %	46.2	min 45.3
Total Cl	w/w %	0.05	max 0.2
Total Na	w/w %	0.05	max 0.15
Total Ca	w/w %	0.05	max 0.2
Total P	w/w %	0.01	max 0.03
Total Cd	ppm	< 0.0002	max 0.0002
Total Pb	ppm	< 0.0005	max 0.0005
Total Perchlorate	ppm	<0.1	max 0.1
Total Hypochlorite	ppm	ND	-
Total Nitrite	ppm	ND	-
Total Heavy metals	ppm	< 10	< 10
Water insoluble	w/w %	0.01	max 0.05
PH of a dilute solution	-	6.0-8.0	max 9
Bulk density loose	t / m3	1.00 - 1.19	max 1.2
Anticaking agent	w/w %	0.1-0.15	max 0.15
Physical Property form	-	Form: White crystalline powder	

SIEVE ANALYSIS

Unit µm	CUMULATIVE w / w %
650	10
350	50
170	90
130	95
80	99

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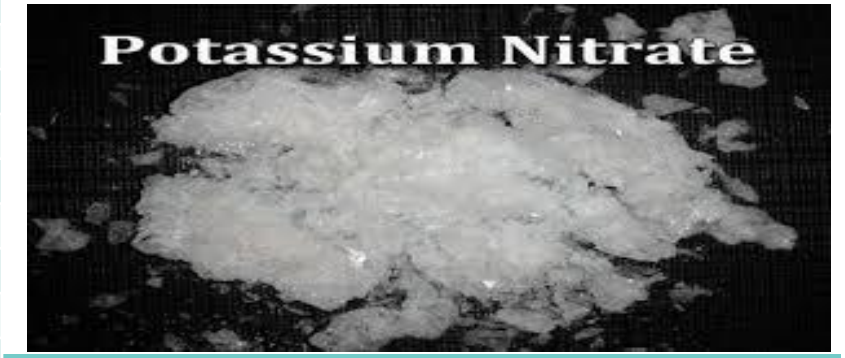

ACIDIC POTASSIUM NITRATE-
13-0-46 - pH 3.0-4.0

ACIDIC POTASSIUM NITRATE

Acidic - 13-0-46 - pH 3.0-4.0

Technical specifications	Unit	TYPICAL	GUARANTEED
Purity KNO_3	w/w %	99	99
Total Nitrogen (N)	w/w %	13.7	min 13.0
Total Potassium (K)	w/w %	38.3	min 37.6
Total potassium oxide (K_2O)	w/w %	46.2	min 45.3
Total Cl	w/w %	0.05	max 0.2
Total Na	w/w %	0.05	max 0.15
Total Ca	w/w %	0.05	max 0.2
Total P	w/w %	0.01	max 0.03
Total Cd	ppm	< 0.0002	max 0.0002
Total Pb	ppm	< 0.0005	max 0.0005
Total Perchlorate	ppm	<0.1	max 0.1
Total Hypochlorite	ppm	ND	-
Total Nitrite	ppm	ND	-
Total Heavy metals	ppm	< 10	< 10
Water insoluble	w/w %	0.01	max 0.05
PH of a dilute solution	-	3.0-4.0	max 4
Bulk density loose	t / m3	1.00 - 1.19	max 1.2
Anticaking agent	w/w %	0.1-0.15	max 0.15
Physical Property form	-	Form: White crystalline powder	

Uses	Crops
Direct application	Flowers ,cotton
NPK and NK granulation or ammoniation	Vegetables, potatoes,,,
NPK and NK bulk blending	strawberries
liquid and suspension fertilizers	potted plants
fertigation (sprinkler, mini sprinklers and drip irrigation)	olives
foliar sprays, foliar NPK fertilizers,	fruit trees bananas, mango, pineapples ,Grapes
starter and transplant solutions	citrus
winter hardener	lawns
winter breaking dormancy sprays	tobacco
flowering inducement sprays	home gardens

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SIEVE ANALYSIS

Unit µm	CUMULATIVE w / w %
650	10
350	50
170	90
130	95
80	99

Potassium Nitrate NK 13-0-44+1%Mg

Technical specifications	Unit	Typical	Guaranteed
Purity (KNO_3+$MgSO_4$)	w/w %	99	99
Total Nitrogen (N)	w/w %	13	min 12.74
Total Potassium (K)	w/w %	36.3	min 35.5
Total potassium oxide (K_2O)	w/w %	43.7	min 42.81
Total Cl	w/w %	0.05	max 0.2
Total Na	w/w %	0.05	max 0.15
Total Ca	w/w %	0.05	max 0.2
Total P	w/w %	0.01	max 0.03
Total Cd	ppm	< 2	max 5
Total Pb	ppm	< 5	max 10
Total Mg	w/w %	1	max 1.4
Total MgSO4	w/w %	5	-
Total S	w/w %	1.3	-
Total As	ppm	<2	max 5
Total Cr	ppm	< 2	max 10
Total Hg	ppm	<0.1	<0.2
Total Perchlorate	ppm	<0.1	-
Total Hypochlorite	ppm	ND	-
Total Nitrite	ppm	ND	-
Total Heavy metals	ppm	< 10	< 10
Water insoluble	w/w %	0.01	max 0.05
Solubility of (N, K & Mg)	w/w %	99.70	-
PH of a dilute solution	-	6.0-8.0	max 9
Bulk density loose	t / m3	1.00 - 1.19	max 1.2
Anticaking agent	w/w %	0.1-0.15	max 0.15

Potassium Nitrate -

NK 13-0-44+1%Mg

Uses	Crops
Direct application	Flowers ,cotton
NPK and NK granulation or ammoniation	Vegetables, potatoes,,,
NPK and NK bulk blending	strawberries
liquid and suspension fertilizers	potted plants
fertigation (sprinkler, mini sprinklers and drip irrigation)	olives
foliar sprays, foliar NPK fertilizers,	fruit trees bananas, mango, pineapples ,Grapes
starter and transplant solutions	citrus
winter hardener	lawns
winter breaking dormancy sprays	tobacco
flowering inducement sprays.	home gardens

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SIEVE ANALYSIS

Unit µm	CUMULATIVE w / w %
650	10
350	50
170	90
130	95
80	99

NPK 13-2-44

Technical specifications	Unit	Typical	Guaranteed
Purity NPK	w/w %	99	99
Total Nitrogen (N)	w/w %	13.6	min 13
Total Potassium (K)	w/w %	36.8	min 36.1
Total potassium oxide (K_2O)	w/w %	44.3	min 43.5
Total Cl	w/w %	0.05	max 0.2
Total Na	w/w %	0.05	max 0.15
Total Ca	w/w %	0.05	max 0.2
Total P	w/w %	0.9	max 1.1
Total Cd	ppm	< 2	max 2
Total Pb	ppm	< 5	max 5
Total P_2O_5	w/w %	2	max 2.5
Total Hg	ppm	<0.1	max 0.1
Total Perchlorate	ppm	<0.1	-
Total Hypochlorite	ppm	ND	-
Total Nitrite	ppm	ND	-
Total Heavy metals	ppm	< 10	< 10
Water insoluble	w/w %	0.01	max 0.05
PH of a dilute solution	-	4.0-6.0	max 7
Bulk density loose	t / m3	1.00 - 1.19	max 1.2
Anticaking agent	w/w %	0.1-0.15	max 0.15

Specialty Fertilizers

Grades Of Specialty Fertilizers

- NPK 13-2-44
- NPK 13-3-43
- NPK 13-8-40

Uses	Crops
Direct application	Flowers ,cotton
NPK and NK granulation or ammoniation	Vegetables, potatoes,,,
NPK and NK bulk blending	strawberries
liquid and suspension fertilizers	potted plants
fertigation (sprinkler, mini sprinklers and drip irrigation)	olives
foliar sprays, foliar NPK fertilizers,	fruit trees bananas, mango, pineapples ,Grapes
starter and transplant solutions	citrus
winter hardener	lawns
winter breaking dormancy sprays	tobacco
flowering inducement sprays.	home gardens

SIEVE ANALYSIS

Unit µm	CUMULATIVE w / w %
650	10
350	50
170	90
130	95
80	99

AC BROKERAGE S.R.O.

NPK 13-3-43

Technical specifications	Unit	Typical	Guaranteed
Purity NPK	w/w %	99	99
Total Nitrogen (N)	w/w %	13.6	min 12.83
Total Potassium (K)	w/w %	36.2	min 35.8
Total potassium oxide (K_2O)	w/w %	43.6	min 43.1
Total Cl	w/w %	0.05	max 0.2
Total Na	w/w %	0.05	max 0.15
Total Ca	w/w %	0.05	max 0.2
Total P	w/w %	1.4	max 1.7
Total Cd	ppm	< 2	max 2
Total Pb	ppm	< 5	max 5
Total P_2O_5	w/w %	3.2	max 3.9
Total Hg	ppm	<0.1	max 0.1
Total Perchlorate	ppm	<0.1	-
Total Hypochlorite	ppm	ND	-
Total Nitrite	ppm	ND	-
Total Heavy metals	ppm	< 10	< 10
Water insoluble	w/w %	0.01	max 0.05
PH of a dilute solution	-	4.0-6.0	max 7
Bulk density loose	t / m3	1.00 - 1.19	max 1.2
Anticaking agent	w/w %	0.1-0.15	max 0.15

Specialty Fertilizers

- NPK 13-3-43

Uses	Crops
Direct application	Flowers ,cotton
NPK and NK granulation or ammoniation	Vegetables, potatoes,,,
NPK and NK bulk blending	strawberries
liquid and suspension fertilizers	potted plants
fertigation (sprinkler, mini sprinklers and drip irrigation)	olives
foliar sprays, foliar NPK fertilizers,	fruit trees bananas, mango, pineapples ,Grapes
starter and transplant solutions	citrus
winter hardener	lawns
winter breaking dormancy sprays	tobacco
flowering inducement sprays.	home gardens

SIEVE ANALYSIS

Unit µm	CUMULATIVE w / w %
650	10
350	50
170	90
130	95
80	99

AC BROKERAGE S.R.O.

NPK 13-8-40

Technical specifications	Unit	Typical	Guaranteed
Purity NPK	w/w %	99	99
Total Nitrogen (N)	w/w %	13.44	min 13.44
Total Potassium (K)	w/w %	33.16	min 32.97
Total potassium oxide (K_2O)	w/w %	40.0	min 39.73
Total Cl	w/w %	0.05	max 0.2
Total Na	w/w %	0.05	max 0.15
Total Ca	w/w %	0.05	max 0.2
Total P	w/w %	3.45	max 3.79
Total Cd	ppm	< 2	max 2
Total Pb	ppm	< 5	max 5
Total P_2O_5	w/w %	8	max 8.2
Total Hg	ppm	<0.1	max 0.1
Total Perchlorate	ppm	<0.1	-
Total Hypochlorite	ppm	ND	-
Total Nitrite	ppm	ND	-
Total Heavy metals	ppm	< 10	< 10
Water insoluble	w/w %	0.01	max 0.05
PH of a dilute solution	-	4.0-6.0	max 7
Bulk density loose	t / m3	1.00 - 1.19	max 1.2
Anticaking agent	w/w %	0.1-0.15	max 0.15

Specialty Fertilizers

- NPK 13-8-40

Uses	Crops
Direct application	Flowers ,cotton
NPK and NK granulation or ammoniation	Vegetables, potatoes,,,
NPK and NK bulk blending	strawberries
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SIEVE ANALYSIS

Unit µm	CUMULATIVE w / w %
650	10
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Inspection services

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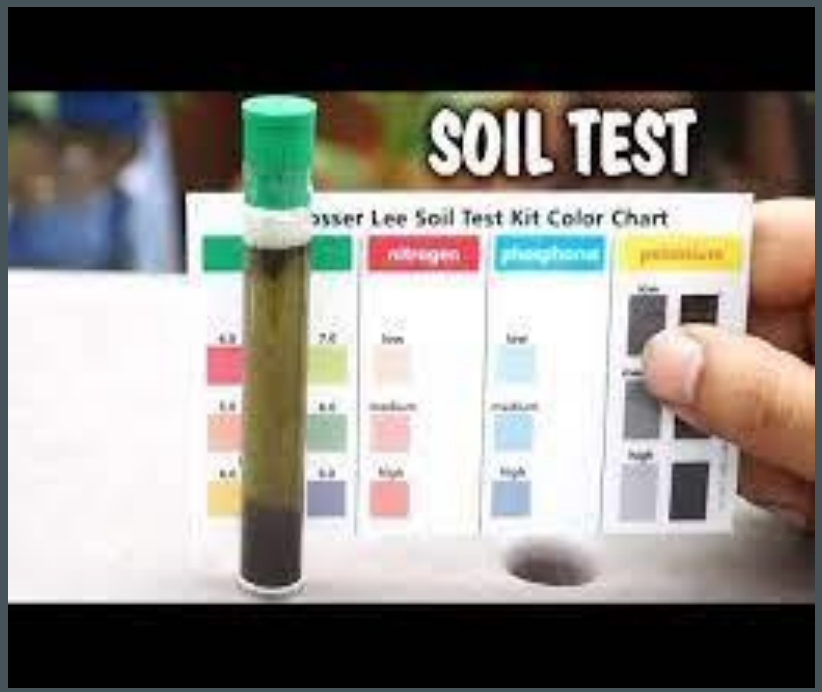
Inspection Services

SOIL TESTS



Inspection services

Soil Test
Soil acidity (pH)
Electrical conductivity (EC)
Available Phosphorus
Available Potassium
Calcium Carbonate
Texture
Organic Matter
Nitrogen
Moisture
rare elements (Fe, Mn, Zn, Cu….
Heavy elements ((Cd, Pb, Ni, Cr,Co,…
Bulk density
Phenols
Boron
Positive and negative ions (Cations and Anions)
Calcium (Ca)
Magnesium (Mg)
Na
K
Chlore (Cl)
CO_3
HCO_3

Soil Tests

A soil test can determine fertility, or the expected growth potential of the soil which indicates nutrient deficiencies, potential toxicities from excessive fertility and inhibitions from the presence of non-essential trace minerals. The test is used to mimic the function of roots to assimilate minerals.

It takes 3 to 7 work Days to get the results

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Inspection Services

FERTILIZERS TESTS

There is two types of Fertilizers Tests :
1-Analyzes for organic fertilizers and peat moss
2-Analyzes for chemical fertilizers

Analyzes for organic fertilizers and peat moss
Soil acidity (pH)
Electrical conductivity (EC)
Total Nitrogen (N %)
Phosphorus (P)
Potassium (K)
Calcium (Ca)
Magnesium (Mg)
Chlore (Cl)
Manganese (Mn)
Sodium (Na)
Iron (Fe)
Copper (Cu)
Zinc (Zn)
Molybdenum (Mo)
Organic Metter (O.M%)
Ash
Moisture
Bulk Density
Heavy elements ((Cd, Pb, Ni, Cr,Co,…

Fertilizers test

Fertilizers are a source of important and absent nutrients for the agricultural soil. So estimation of these nutrients forms the basic parameters of fertilizer testing

It takes 3 to 7 work Days to get the results

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Analyzes for chemical fertilizers
Soil acidity (pH)
Electrical conductivity (EC)
Total Nitrogen (N %)
Phosphorus (P)
Calcium (Ca)
(Potassium (K)
Magnesium (Mg)
Chlore (Cl)
Manganese (Mn)
Sodium (Na)
Iron (Fe)
Copper (Cu)
Zinc (Zn)
Molybdenum (Mo)
Humic Acid
Moisture
Sulfur
Heavy elements ((Cd, Pb, Ni, Cr,Co,…

Tips to Enjoy Growing Your COCOA Plant

COCOA PLANTING

AC BROKERAGE S.R.O.

Tips to Enjoy Growing Your COCOA Plant

PRODUCTION OF COCOA

Cocoa or Theobroma cacao can be grown either from seeds (seedling cocoa), cuttings (clonal cocoa) or from grafted/budded plants.

To produce a good cocoa crop, its preferable to Use Trinidad Selected Hybrids (TSH) & Suitable Fertilizer

FERTILIZING

Heavily shaded fields do not respond as well to fertilizer as fields with minimum shade. Fertilizer use is recommended for close spaced systems using high yielding TSH varieties with minimum overhead shade.

Use fertilizers as recommended based on the results of a soil test. Use Nitrogen, Phosphorus and Potassium (NPK) fertilizers if the soil is lacking in these nutrients. The amount and type of nutrients required vary with the age of the plant.

Methods to Control Weeds

Control weeds manually by brush cutting or by using herbicides

DISEASE CONTROL

Two common diseases of cocoa are Black Pod and Witches' Broom. These can be managed by using measures to reduce moisture in the field.

GENERAL RECOMMENDATIONS

Cocoa Plant Type	Soil Test Results	Recommended Fertilizer	TIMING OF FERTILIZER APPLICATION	FERTILIZER PLACEMENT
Newly Transplanted Cocoa	Lacking In Phosphorus	NPK Fertilizer High In Phosphorus, E.g. 12:24:12 NPK at the rate of 0.1 kg (¼ lb.) per plant.	Three To Four Applications Per Year	Placed in circular bands around the trees, 5.1 cm - 10.2 cm (two to four inches) away from the plant.
Young Trees (1-3 Years)	Lacking In Nitrogen	NPK Fertilizer High In Nitrogen, E.g. 30:10:10 NPK at the rate of 0.2 kg (½ lb.) per tree.	Twice Per Year For The First Three Years.	Applied in circular bands located further away from the trunk at the drip circle
Actively Growing Trees (Over 3 Years)	Lacking In Nitrogen	NPK Fertilizer High In Nitrogen, E.g. 30:10:10 NPK at the rate of 0.2 kg (½ lb.) to 0.4 kg (1 lb.) per tree	Twice Per Year	In mature fields, it is best to broadcast fertilizer on the soil surface throughout the field
Flowering and Fruiting Trees	Lacking In Nitrogen & Potassium	NPK Fertilizer High In Nitrogen &Potassium, E.g. 16:8:24 NPK at the rate of 0.4 kg to 1.2 kg (1-3 lb.) per tree	Twice Per Year	On the soil surface throughout the field