

RICE (Oryza sativa L.)
NORMAL AHU (Summer rice)
(Direct seeded)

Manures and fertilizers:

Compost or FYM @ 10 t/ha or 15 q/bigha should be applied.

Nutrient	Requirement kg/ha	Form	Fertilizer kg/ha	Requirement kg/bigha
A. Semi-dwarf varieties				
N	40	Urea	88	12
P ₂ O ₅	20	SSP	125	17
K ₂ O	20	MOP	32	4
B. Tall varieties :				
N	20	Urea	44	6
P ₂ O ₅	10	SSP	62	9
K ₂ O	10	MOP	17	3

Fertilizer recommendation for semi-dwarf varieties is 30:30:20 kg/ha NPK in Zone 1. Granulated mixed fertilizer at appropriate doses can also be applied.

Diammonium phosphate (DAP) in combination with rock phosphate or alone at the recommended level of fertilizers (40:20:20) can be applied as substitute for SSP and MRP or their combinations as an economic source of phosphate. For Hill Zone reduction of 50% chemical fertilizer by incorporating 10 t of FYM/ha is recommended.

Time of Application of Fertilizers :

1. Apply full dose of phosphatic fertilizer at the time of final ploughing.
2. Apply half of nitrogenous and half of potassic fertilizer 15-25 days after germination or after first weeding.
3. The second top dressing with the remaining N and K is to be given 40-50 days after germination or after second weeding.

RICE
TRANSPANTED NOORMAL AHU
(Summer rice)

Manures and Fertilizers:

Well rotten FYM or compost has to be applied @ 10t/ha in addition to the fertilizers at rates given below in areas with moderate fertility level.

Nutrient	Requirement kg/ha	Form	Fertilizer kg/ha	Requirement kg/bigha
A. Semi-dwarf varieties				
N	40	Urea	88	12
P ₂ O ₅	20	SSP	125	17
K ₂ O	20	MOP	32	4
B. Tall varieties :				
N	20	Urea	44	6
P ₂ O ₅	10	SSP	62	8
K ₂ O	10	MOP	16	2

Above rates of fertilizer will be valid for most of the rice growing areas of Assam. In case of poor soil, the rates of fertilizers may be raised to the extent of 60:30:30 kg/ha N, P₂O₅ and K₂O respectively. Granulated mixed fertilizer at appropriate doses can also be applied.

Diammonium phosphate (DAP) in combination with rock phosphate or alone at the recommended level of fertilizers (40:20:20) can be applied as substitute for SSP and MRP or their combinations as an economic source of phosphate.

Time of Application of Fertilizers :

- ◆ Only 1/3rd of the total urea, full doses of super phosphate and potash at the time of final puddling should be applied.
- ◆ The second (1/3rd) and third doses (1/3rd) of urea should be applied at tillering and panicle initiation stages respectively. Top dressing of urea should be preceded by weeding.
- ◆ Superphosphate can also be incorporated into the soil at active tillering stage (25-35 days after transplanting) along with the second dose of nitrogenous fertilizer.

Use of Azolla to supplement Nitrogenous Fertilizers :

Azolla can be used as supplement to nitrogenous fertilizers. About 500 kg fresh Azolla/ha is to be inoculated in the field, pounded with 5-10 cm depth of water for about 2-3 weeks prior to final puddling. At the time of inoculation, super phosphate @ 8-10 kg/ha is to be applied in the field. Thereby corresponding quantities of phosphatic fertilizer should be reduced at the time of transplanting.

Fresh Azolla @ 500 kg may also be applied in the standing water in a transplanted crop after establishment of the seedlings. There is no need for application of additional phosphatic fertilizer in the field at the time of inoculation with fresh Azolla after transplanting, when recommended doses of phosphatic fertilizer is applied at the time of transplanting. Thereafter Azolla will multiply to cover the field. Care should be taken to keep 5-10 cm depth of water for rapid multiplication. Normally sufficient quantities of biomass will be produced by two weeks.

Before inoculation of fresh Azolla, it should be treated with Carbofuran 3G @ 1g/kg of Azolla and covered with polythene sheet for 2 hours to avoid pest damage in the field. Such practice will encourage early establishment of Azolla in the field. Further it is suggested to broadcast granular insecticide preferably Furadon 3G @ 3g/m² on affected patches when damage is noticed.

Natural depressions and ponds or tanks may be used for Azolla multiplication outside the main field and be incorporated at the time of land preparation @ 6 t/ha of fresh Azolla.

Nitrogen does can even be reduced up to 50% when Azolla is applied and incorporated in the field.

Use of Biofertilizer :

Application of organic manure @ 1 t/ha (on dry weight basis) along with mixed inocula of *Azospirillum amazonense* A-10 and *Bacillus megaterium* P-5 @ 4 kg/ha (0.4-0.5 kg/bigha), rock phosphate @ 10 kg P₂O₅ per ha (rock phosphate 56 kg/ha or 7.5 kg/bigha) and muriate of potash @ 40 kg K₂O per ha (muriate of potash 67 kg/ha or 9 kg/bigha) is recommended for rice in rice-rice, rice-legume-rice and sole rice sequences.

Method of application of Biofertilizer

A. Technique of application of components of the INM package for transplanted rice

Application of the organic manure and fertilizer component : The required quantity of compost (approx. 1.5 q or 2 bullock cart load per bigha) should be applied at least a week before transplanting or at the time of final ploughing. Required quantity of potassium (40 kg K₂O per ha or 5.5 kg per bigha) should be applied prior to transplanting. Rock phosphate component is used along with the bio-fertilizer as slurry to treat the seedling roots.

B. Treatment of rice seedling roots with the bio-fertilizer component and rock phosphate by slurry method

Prepare a pit in the corner of a plot in the morning of the transplanting day simply by raising a bund that touches the two already existing bunds to obtain a triangular shape. The size of the pit should be proportionate to place the quantity of seedlings required for a bigha of land. Excess water from the pit should be removed so that only mud remains. Now add 10 kg of dried compost and the required quantity of rock phosphate, mix with mud and then add the bio-fertilizer. The mix of the mud, compost, rock phosphate and bio-fertilizer should be a uniform slurry. The rice seedlings roots in bundles should be free of adhered soil and dipped in the slurry mix and kept for two hours. During the two hours time, the bio-fertilizer and rock phosphate adhere well to the seedling roots. Then remove the seedlings bundles from the pit and keep on the raised bund. Care should be taken so that seedlings are not swept in water of the plot as the Assamese farm women are habituated in occasional sweeping of the seedlings during transplanting. The bio-fertilizer on the root surface keep multiplying as the root grows bigger and by 20/30 days time they start supplying N, hormone and also soluble P to the roots in adequate quantity.

SALI RICE (Winter rice)

Manures and Fertilizers :

Well rotten FYM or compost @ 10t/ha has to be applied during field preparation. In addition, the following NPK fertilizers are to be applied at rates given below in areas with moderate fertility level.

Nutrient	Requirement (kg/ha)	From	Fertilizer kg/ha	Requirement kg/bigha
A. semidwarf varieties				
N	60	Urea	132	18
P ₂ O ₅	20	SSP	125	17
K ₂ O	40	MOP	66	9
B. Tall varieties:				
N	20	Urea	44	6
P ₂ O ₅	10	SSP	62	8
K ₂ O	10	MOP	16	2

Above rates of fertilizer will be valid for most of the rice growing areas of Assam.

In case of poor soil, the rates of fertilizers may be required to increase to the extent of 60:30 kg/ha N, P₂O₅ and K₂O respectively.

Diammonium phosphate (DAP) in combination with rock phosphate or alone at the recommended level fertilizers (40:20:20) can be applied as substitute for SSP and MRP or their combinations as an economic source of phosphate.

In monocrop Sali areas sowing of dhaincha is recommended as green manuring crop before Sali rice in Barak Valley Zone.

Time of Application of Fertilizers :

a) For short duration varieties (100-120 days).

- ◆ Half of urea and whole of super phosphate and muriate of potash should be applied at the time of final puddling. In standing water urea along with super phosphate and muriate of potash can be applied in pallet form.
- ◆ Second dose (half) of urea should be applied at the time of panicle initiation stage.

b) For medium and long duration varieties (120-150 days).

- ◆ Half of urea and entire quantity of super phosphate and muriate of potash should be applied at the time of final puddling.
- ◆ Of the remaining part of urea, half at tillering stage i.e. 20-30 days after transplanting and other half at panicle initiation stage should be applied.
- ◆ For long duration varieties under rainfed low land situation with water depth between 30-50 cm, basal incorporation of prilled urea at 30 kg N/ha is recommended.
- ◆ Split application of postassic fertilizer half at basal and half at maximum tillering stage is recommended for North Bank Plain Zone.

N.B. i) Urea should be applied by mixing with moist soil in 1:10 proportion i.e. 1 part of urea with 10 parts of moist soil and incubate for 48 hours.

ii) In case single super phosphate is not available diammonium phosphate (DAP) may be used with appropriate adjustment with urea.

iii) In the case of non-availability of single super phosphate in time, application can be delayed up to 30 days of transplanting.

iv) Standing water as far as practicable should be drained out before application of fertilizer.

i) In case bacterial leaf blight symptoms appear, stop top dressing of urea.

Mixed Fertilizers :

Granular mixed fertilizer of 15:15:15 grade can also be used to meet the NPK requirement of rice crop. 133 kg/ha (19 kg/bigha) of 15:15:15: grade mixed fertilizers will be equivalent to 20:20:20 kg/NPK/ha (3:3:3 kg/bigha) which is to be supplemented by top dressing of 45 kg/ha urea to give 40:20:20 kg/ha (6:3:3 kg/bigha) of NPK. Half the dose will give 20:10:10 kg/ha (3:1.5:1.5 kg/bigha) of NPK.

Recommendation for use of Rock Phosphate (If super phosphate is not used) :

1. For raising two successive rice crops i.e. ahu followed by Sali 60 kg P₂O₅/ha (300 kg/ha MRP) as rock phosphate should be applied at least 20 days ahead of ahu transplanting
2. For monocrop rice apply 30 kg P₂O₅/ha (150 kg as rock phosphate) at least 20 days ahead of ahu transplanting.

Application of FYM as per recommendation help in rapid release of phosphorus from this source.

Use of Azolla to Supplement Nitrogenous Fertilizer :

Inoculate 500 kg of fresh Azolla/ha in the field after transplanting. Allow it to grow for 2-3 weeks to cover the water surface. After coverage, either incorporate to the soil or allow it for self-decomposition. Since Azolla is affected by insects (which are not rice pests) it is suggested to broadcast granular pesticide preferably Furadon 3 G @ 3g/m² in affected patches of Azolla.

To obtain 500 kg fresh Azolla, add 16 kg inoculum to an area of 400 sm water surface and allow it to grow for 3-4 weeks. Depending on the growth of Azolla top dressing of nitrogen could be avoided.

Integrated nutrient management : Integrated nutrient management (INM) package of organic manure @ 1 t/ha (on dry weight basis) mixed inocula of *Azospirillum amazonense* A-10 and *Bacillus megaterium* P-5 @ 4 kg/ha (04 to 0.5 kg/bigha), rock phosphate @ 10 kg P₂O₅ (56 kg/ha or 7.5 kg/bigha), MOP @ 40 kg K₂ O/ha (67 kg Potash/ha or 9 kg/bigha) is recommended for rice in rice-rice, rice-legume-rice and sole rice sequence.

Method of application of bio-fertilizer : Same as Normal Ahu.

SPECIAL PACKAGE FOR LOW AND DELAYED RAINFALL AREAS OF UPPER BRAHMAPUTRA VALLEY ZONE

APPLICATION OF FERTILIZERS:

1. If drought situation appears, top dress additional quantities of MOP @ 5kg/bigha and incorporate it.
 2. Spray 2% Ket solution on leaves if and when drought appears.
- Top dressing of urea may be delayed up to heading if drought prevails at the stage of top-dressing. Other recommendations will be as per Package of Practices.

BAO RICE (Deep Water Rice)

Fertilizers :

Application of neem coated urea @ 30 kg N/ha in two equal splits as basal and at maximum tillering stage is recommended.

Preparation of neem coated urea :

Neem coated urea can be prepared by mixing 50 kg urea with 500 ml neem oil (Nimin marketed by Godrej Soaps Ltd. Calcutta) over a polythene sheet till uniform yellow colour is obtained.

As an alternative to neem coated urea, application of 4% urea solution as foliar spray at maximum tillering stage (150 DAS) @ 30 kg N/ha is recommended.

- i) Wherever feasible "bindha" (rake may be used).

MAIZE (Zea mays)

MANURES AND FERTILIZERS :

A combination of organic and inorganic fertilizer gives better results than inorganic fertilizer alone.

Compost or FYM @ 5t/ha should be applied

Nutrient	Requirement kg/ha	Form	Fertilizer kg/ha	Requirement (kg/bigha)
*N	60	Urea	134	18
P ₂ O ₅	40	SSP	250	33
K ₂ O	40	MOP	67	9

*for hills zone a dose of 90:40:40kg/NPK hectare is recommended under rained condition.

Method of Application :

FYM or compost should be applied during land preparation. The entire quantity of SSP and MOP and half of the total urea is to be applied in furrows 8-10cm deep and covered with 4-5cm of soil. Sowing of seed should be done at least 2 days after fertilizer application.

The remaining half quantity of urea should be top dressed in two equal doses followed by earthing up; in each case. The first $\frac{1}{4}$ at 35 days after germination or when the plants are at knee high stage and the second $\frac{1}{4}$ at the tassel initiation stage of the crop i.e. 45-60 days after germination or at the time of elongation of the flag leaf whichever is earlier. The fertilizer should be applied on both sides of row and weeds should also be removed from the field during this operation. However, before application of the fertilizer a light hoeing is to be given between the lines 2-3 days ahead.

FINGER MILLET (MARUA)
(*Eleusine coracana*)

Manure and FYM/Compost of 5t/ha or 6q/bigha.

Fertilizers :

Nutrient kg/ha	Requirement	Name of Fertilizer	Fertilizer kg/ha	Requirement kg/bigha
N	40	Urea	88	12.00
P ₂ O ₅	20	SSP	125	16.50
K ₂ O	20	MOP	32	4.25

Half of N and full doses of FYM, P₂O₅ and K₂O should be applied as basal and the remaining half of N to be top dressed 30 days after transplanting.

BLACKGRAM
(*Vigna mungo*)

Manure and Fertilizer :

Compost or FYM @ 1t/ha or 1.3q/bigha should be applied.

Nutrient	Requirement kg/ha	Form	Fertilizer kg/ha	Requirement kg/bigha
A. Without rhizobium culture*				
N	15	Urea	32	4
P ₂ O ₅	35	SSP	220	30
K ₂ O	0	MOP	-	-
B. With rhizobium culture				
N	10	Urea	22	3
P ₂ O ₅	35	SSP	220	30
K ₂ O	0	MOP	-	-

*for UBV, BLV and NBP zones NPK fertilizer dose of 15:35:10 kg/ha respectively have been recommended. The quantity of N is to be reduced proportionately to the quantity of N added in the form of FYM (each tonne of FYM contributes about 5 kg N). Diammonium phosphate (DAP) 75 kg/ha or 10 kg/bigha should be applied in lieu of urea and SSP in non inoculated crops.

GREENGRAM
(*Vigna radiate*)

Liming :

Requisite amount of lime is to be applied after soil test to bring soil pH around 6.0.

Manures and Fertilizers :

Compost or FYM @ 1 t/ha or 1.3 q/bigha should be applied.

Nutrient	Requirement kg/ha	Form	Fertilizer requirement	
			Kg/ha	Kg/bigha
A. Without rhizobium culture*				
N	15	Urea	32	4
P ₂ O ₅	35	SSP	220	30
K ₂ O	0	MOP	-	-
B. With rhizobium culture :				
N	10	Urea	22	3
P ₂ O ₅	35	SSP	220	30
K ₂ O	0	MOP	-	-

* For North Bank Plains zone, Upper Brahmaputra Valley Zone and Lower Brahmaputra Valley Zone a NPK fertilizer dose of 15:35:10 kg/ha respectively has been recommended.

The quantity of N is to be reduced proportionately to the quantity of N added in the form of FYM (each tonne of FYM contributes about 5 kg N).

Diammonium phosphate (DAP) @ 75 kg/ha or 10 kg/bigha may be applied in lieu of urea and SSP in non inoculated crop.

Rhizobium culture :

Seed inoculation : For seed inoculation with rhizobium culture, either Majuli 10 or any other suitable strains may be used. Seeds should be inoculated with 150 g/3-4 kg seeds. Detail instructions are available in each packet of culture.

COWPEA

(*Vigna unguiculata*)

Manures and Fertilizers :

Compost or FYM @ 4-5 t/ha or 6 q/bigha is to be applied.

Nutrient	Requirement kg/ha	Form	Fertilizer requirement	
			Kg/ha	Kg/bigha
N	15	Urea	32	5
P ₂ O ₅	32	SSP	220	30
K ₂ O	0	MOP	-	-

ARHAR

(*Cajanus cajan*)

Manures and Fertilizers :

Compost or FYM @ 4.5 t/ha or 6 q/bigha is to be applied.

Nutrient	Requirement kg/ha	Form	Fertilizer requirement	
			Kg/ha	Kg/bigha
A. Without rhizobium inoculation :				
N	15	Urea	32	5
P ₂ O ₅	40	SSP	220	35
K ₂ O	0	MOP	-	-
B. With rhizobium inoculation:				
N	10	Urea	22	3
P ₂ O ₅	40	SSP	250	35
K ₂ O	0	MOP	-	-

SOYBEAN

(*Glycine max*)

Fertilizers :

	Nutrient Requirement		Form	Fertilizer Requirement	
	kg/ha	kg/bigha		kg/ha	kg/bigha
N	20	3	Urea	45	6
P ₂ O ₅	60	8.5	SSP	375	50
K ₂ O	40	5.7	MOP	70	10

Potash is required for healthy development of seeds. Foliar application of MOP is recommended in soils with low potash content.

Fertilizer should be placed in furrows at a depth of 5 to 7 cm below the seeds and should be covered with a layer of 3-4 cm soil and make it level with the field. In case placement is not possible, the fertilizers should be evenly broadcast and incorporated in the soil.

Foliar-Spray of MOP :

MOP should be sprayed at the flower initiation stage in between 30 and 35 days after sowing with hand sprayer for proper grain filling in pods.

Preparation of MOP solution ;for spraying with hand sprayer :

Quantity of MOP (kg)	Quantity of water (l/ha)	Strength of MOP solution (%)	No. of spray	Type of sprayer
12.00	400	3	1	Hand Sprayer

SESAMUM (*Sesamum indicum*)

Manures and Fertilizers :

Compost of FYM should be applied @ 10 t/ha. Fertilizer requirement are as follows :

Nutrient	Requirement kg/ha	Form	Fertilizer requirement	
			Kg/ha	Kg/bigha
N	30	Urea	65	9
P ₂ O ₅	20	SSP	125	19
K ₂ O	20	MOP	33	5

Apply the whole quantity of fertilizer at the time of sowing.

GROUNDNUT (*Arachis hypogaea*)

Manures and Fertilizers :

Compost or FYM @ 10 t/ha should be applied

Nutrient	Requirement kg/ha	Form	Fertilizer requirement	
			Kg/ha	Kg/bigha
N	20	Urea	44	6
P ₂ O ₅	40	SSP	250	33
K ₂ O	30	MOP	50	7

RICE BEAN * (*Vigna umbellate*)

Manures and Fertilizers :

Compost or FYM @ 4-5 t/ha should be applied.

Nutrient	Requirement kg/ha	Form	Fertilizer requirement	
			Kg/ha	Kg/bigha
N	20	Urea	44	6
P ₂ O ₅	40	SSP	250	33
K ₂ O	0	MOP	0	0

- Recommended for the Central zone only.

SUGARCANE (*Saccharum* sp)

Manure and Fertilizers :

Compost or FYM has to be applied @ 10 t/ha in trenches/furrows before planting cane. Besides, the following fertilizers are to be applied.

Nutrient	Requirement kg/ha	Form	Fertilizer requirement	
			Kg/ha	Kg/bigha
N	135	Urea	300	40
P ₂ O ₅	70	SSP Or MRP	440 350	60 50
K ₂ O	60	MOP	100	15
Alternatively the following fertilizers may be used :				
		Urea	235	34
		DAP	150	20
		MOP	100	15

Granulated mixed fertilizer may also be used instead of the above fertilizers. The per hectare requirement of mixed fertilizer of 15:15:15 grade is 450 kg (64 kg/bigha) which should be applied in trenches/furrows at planting followed by top dressing of urea @ 150 kg/ha (21 kg/bigha).

Time and Method of application of Fertilizers :

Entire quantity of phosphatic and half of potassic fertilizers are to be applied in furrows/trenches and mixed well with the soil before planting the setts. Nitrogenous fertilizers are to be applied in two splits, 1/3rd at planting and 2/3rd at first earthing up. The other half of the potassic fertilizer may be top dressed along with the urea. Application of nitrogenous fertilizer should be completed within 90-100 days of planting.

JUTE (*Corchorus* Sp)

Manures and Fertilizers :

Wherever possible cow dung or compost should be applied @ 5t/ha during land preparation; and the amount for nutrients thus supplied will be reduced by corresponding reduction from the recommended dose of fertilizer. One tone of cow dung or compost supplies approximately 5 kg N, 2-5 kg P₂O₅ and 5.0 kg K₂O.

Nutrient	Requirement kg/ha	Form	Fertilizer requirement	
			Kg/ha	Kg/bigha
A. Capsularis:				
N	40	Urea	88	12
P ₂ O ₅	25	SSP	156	20
K ₂ O	30	MOP	50	7
B. Olitorius:				
N	30	Urea	66	9
P ₂ O ₅	25	SSP/MRP	156/125	20/15
K ₂ O	25	MOP	42	6

Note : In case of phosphatic fertilizers "Mussorie phos" can be substituted for SSP in olitorius jute at least 3 weeks ahead of final land preparation.

Mode of Application :

The whole quantity of phosphatic and potassic fertilizers are to be applied as basal dressing at the time of final land preparation. N should be applied in two equal doses at 4-6 weeks and 6-8 weeks after sowing in areas where there is no water stagnation. Otherwise foliar application shall be followed.

Top dressing of fertilizer mixture Amrit grade 8:10:12 at 15 DAS and MOP with subsequent foliar spray of urea is recommended.

Foliar Spray of Urea :

Where top dressing is not possible foliar spray of urea is advocated. Urea (11.5 kg N/ha) is sprayed between 40-60 days after sowing. The first dose of urea should preferably be given 40-50 days after sowing with low volume power sprayer (Micronette) and the second spray is to be given after 10-15 days. With Aspee Bolo power sprayer it requires three sprayings the first spray being followed by two more sprays at an interval of 10 days. With hand operated (high volume) sprayer, it will be necessary to spray 2 times; the first one (40-45 DAS) being followed by another spray at 55-60 days after sowing.

Preparation of Urea Solution for Foliar Spray :

Qty. of Urea (kg)	Qty. of water (l)	Strength of urea solution (%)	Nos. of sprays	Type of sprayer
12.50	90	14%	3	Micronette power sprayer
8.50	85	10%	3	Aspee Bolo power sprayer
12.50	420	3%	2	Hand sprayer

JUTE (Seed Crop)

Manures and Fertilizers :

Compost or FYM @ 5t/ha or 7 g/bigha should be applied. The quantity of nitrogen is to be reduced proportionately. Each tone of FYM /compost supplied 5 kg Nitrogen.

Nutrient	Requirement kg/ha	Form	Fertilizer requirement	
			Kg/ha	Kg/bigha
N	20	Urea	45	6
P ₂ O ₅	20	SSP	125	16
K ₂ O	20	MOP	32	4.5

The whole quantity of P and K fertilizers should be applied as basal dressing and full dose of N fertilizer should be applied as top dressing at 3-4 weeks of crop age. Musoori phos can be substituted for SSP.

MESTA (Hibiscus spp)

Manure and Fertilizers:

FYM or compost @ 7-8 t/ha should be applied during land preparation. The quantity of N is to be reduced from the fertilizer on the basis of 5 kg N per tone of FYM/compost applied in the field.

Nutrient	Requirement kg/ha	Form	Fertilizer requirement	
			Kg/ha	Kg/bigha
N	40	Urea	90	12
P ₂ O ₅	20	SSP	125	16
K ₂ O	20	MOP	32	5.2

Mode of Application of Fertilizers :

The entire quantity of phosphatic and potassic fertilizers should be applied at time of final land preparation. Nitrogenous fertilizer should be top dressed in two equal splits at 4-5 and 7-8 weeks after emergence.

COTTON
(*Gossypium spp*)

Manure and Fertilizers:

Compost of FYM should be applied at the rate of 10-20 t/ha.

Nutrient	Requirement kg/ha	Form	Fertilizer requirement	
			Kg/ha	Kg/bigha
N	60	Urea	130	18
P ₂ O ₅	30	SSP	187	27
K ₂ O	30	MOP	50	7

Compost of FYM is to be incorporated with the soil during first ploughing. The entire quantity of P and K and half of N fertilizers should be applied as basal dressing during final land preparation before sowing. Remaining half of N should be applied 40 days after sowing at flowering stage.

RAMIE
(*Boehmeria Nivea* (L) Gauda)

Fertilizer : N:P:K (kg/ha) 30:15:15 kg/per cutting.

DEENANATH GRASS
(*Pennisetum pedicellatum*)

Manures and Fertilizers :

Apply compost of FYM @ 4-6 t/ha or 6-8 q/bigha.

Nutrient	Requirement kg/ha	Form	Fertilizer requirement	
			Kg/ha	Kg/bigha
N	60	Urea	132	18
P ₂ O ₅	30	SSP	186	25
K ₂ O	0	-	-	-

30 kg N and full dose of P₂O₅ should be applied as basal dressing i.e. at the time of final land preparation and rest 30 kg N as top dressing after first cutting.

HYBRID NAPIER
(*Pennisetum purpureum*)

Manures and Fertilizers :

Apply compost or FYM @ 8-10 t/ha or 1-1.5 t/bigha.

Nutrient	Requirement kg/ha	Form	Fertilizer requirement	
			Kg/ha	Kg/bigha
N	120	Urea	265	35
P ₂ O ₅	50	SSP	310	45
K ₂ O	30	-	48	7

Nitrogenous fertilizer should always be applied in 4 splits. Entire quantities of phosphatic and potassic fertilizers along with first split of nitrogen are to be applied as basal dressing and the other 3 splits at the time of intercultural operation and after alternate cutting.

COWPEA (*Vigna unguiculata*) and
RICE BEAN (*Vigna umbellata*) as Fodder

Manures and Fertilizers :

Apply compost or FYM @ 3-4 t/ha or 4-6 t/bigha.

Nutrient	Requirement kg/ha	Form	Fertilizer requirement	
			Kg/ha	Kg/bigha
N	20	Urea	44	6
P ₂ O ₅	40	SSP	248	35
K ₂ O	20	MOP	32	5

MAIZE FODDER
(*Zea mays*)

Manures and fertilizers :

Apply compost or FYM @ 3-4 t/ha or 5-6 q/bigha.

Nutrient	Requirement kg/ha	Form	Fertilizer requirement	
			Kg/ha	Kg/bigha
N	60	Urea	132	18
P ₂ O ₅	30	SSP	186	27
K ₂ O	30	MOP	48	7

30 kg N, the whole of P₂O₅ and K₂O should be applied as basal dressing at the time of final land preparation and 30 kg N as top dressing after 40 days of sowing.

TEOSINTE
(*Euchlaena maxicana*)

Manures and Fertilizers:

Apply compost or FYM @ 3-4 t/ha or 5-6 q/bigha.

Nutrient	Requirement (kg/ha)	Form	Fertilizer requirement	
			(Kg/ha)	(Kg/bigha)

40 kg N, the whole of P₂O₅ and K₂O should be applied as basal dressing at the time of final land preparation and 40 kg nitrogen as top dressing after 40 days of sowing.

SETARIA GRASS

Manures and fertilizers :

Apply compost or FYM @ 5t/ha or 7q/bigha

Nutrient Requirement (kg/ha)	Form of fertilizer	fertilizer	
		Kg/ha	Kg/bigha
N	120	Urea	35
P ₂ O ₅	50	SSP	44
K ₂ O	30	MOP	7

Nitrogenous fertilizer @ 40 kg/ha should be applied as basal and rest amount of nitrogenous fertilizer should be applied @ 30 kg/ha after each cut. The entire quantities of phosphatic and potassic fertilizer along with the first split of nitrogen are to be applied Vermicompost is applied @ 2.5t/ha.