

Ready reckoners for nitrogenous fertilizers (by Dr. Jagdev Sharma, Senior Scientist (Soil Science) and Dr. A. K. Upadhyay, Senior Scientist (Soil Science))

These ready reckoners have been prepared to help farmers/ users calculate the quantity of commonly used nitrogenous fertilizers for N nutrition of vines. The figures have been rounded to nearest decimal point. The calculations have been made on the basis of minimum N content required to be present in the fertilizer as per the specifications of different fertilizers provided in 'Fertilizers Control Order of India' (Government of India, Ministry of Agriculture and Rural Development (Department of Agriculture and Cooperation)). Further information on fertilizer properties can be obtained from the website of the Ministry of Agriculture and Rural Development.

Urea (46% N), Urea coated (45% N), Urea granular (46% N), Urea super granulated (46% N)				
A	B	C	D	E
Quantity of N needed (kg)/acre or ha	Quantity of Urea crystalline (46%) needed for quantity under column A (kg)	Quantity of Urea coated (45% N) needed for quantity under column A (kg)	Quantity of Urea granular (46% N) needed for quantity under column A (kg)	Quantity of Urea super granulated (46% N) needed for quantity under column A (kg)
10	21.7	22.2	21.7	21.7
20	43.5	44.4	43.5	43.5
30	65.2	66.7	65.2	65.2
40	87.0	88.9	87.0	87.0
50	108.7	111.1	108.7	108.7
60	130.4	133.3	130.4	130.4
70	152.2	155.6	152.2	152.2
80	173.9	177.8	173.9	173.9
90	195.7	200.0	195.7	195.7
100	217.4	222.2	217.4	217.4

Calcium Ammonium Nitrate (CAN): 25 % N				
A	B	C	D	E
Quantity of N needed (kg)/acre or ha	Quantity of (CAN) needed for quantity under column A(kg)	Quantity of ammonium-N present in CAN under column B (kg)	Quantity of nitrate-N present in CAN under column B (kg)	Calcium nitrate (20.5%) present in CAN under column B (kg)
10	40.0	5.0	5	0.2
20	80.0	10.0	10	0.4
30	120.0	15.0	15	0.6
40	160.0	20.0	20	0.8
50	200.0	25.0	25	1.0
60	240.0	30.0	30	1.2
70	280.0	35.0	35	1.4
80	320.0	40.0	40	1.6
90	360.0	45.0	45	1.8
100	400.0	50.0	50	2.0

Urea Ammonium nitrate (UAN): 32% N liquid				
A	B	C	D	E
Quantity of N needed (kg)	Quantity of UAN needed for quantity under column A (kg)	Quantity of ammonium-N present in UAN under column B (kg)	Quantity of nitrate- N present in UAN under column B (kg)	Quantity of Urea-N present in UAN under column B (kg)
10	31.3	2.4	2.4	5.2
20	62.5	4.8	4.8	10.4
30	93.8	7.2	7.2	15.6
40	125.0	9.6	9.6	20.8
50	156.3	12.0	12.0	25.9
60	187.5	14.4	14.4	31.1
70	218.8	16.8	16.8	36.3
80	250.0	19.3	19.3	41.5
90	281.3	21.7	21.7	46.7
100	312.5	24.1	24.1	51.9

Ammonium Sulphate (AS) : 20.6 % N and 23% sulphur				
A	B	C	D	F
Quantity of N needed (kg)	Quantity of ammonium sulphate needed for quantity under column A (kg)	Quantity of ammonium-N present in AS under column B (kg)	Quantity of nitrate-N present in AS under column B (kg)	Quantity of sulphur present in AS under column B (kg)
10	48.5	10	-	11.2
20	97.1	20	-	22.3
30	145.6	30	-	33.5
40	194.2	40	-	44.7
50	242.7	50	-	55.8
60	291.3	60	-	67.0
70	339.8	70	-	78.2
80	388.3	80	-	89.3
90	436.9	90	-	100.5
100	485.4	100	-	111.7

Ammonium nitrate phosphate (23-23-0)				
A	B	C	D	E
Quantity of N needed (kg)	Quantity of 23-23-0 fertilizer needed for quantity under column A (kg)	Quantity ammonical-N present in the fertilizer under column B (kg)	Quantity of nitrate-N present in the fertilizer under column B (kg)	Quantity of Water soluble P present in the fertilizer under Column B (kg)
10	43.5	5.7	4.3	8.9
20	87.0	11.3	8.7	17.8
30	130.4	17.0	13.0	26.7
40	173.9	22.6	17.4	35.7
50	217.4	28.3	21.7	44.6
60	260.9	33.9	26.1	53.5
70	304.3	39.6	30.4	62.4
80	347.8	45.2	34.8	71.3
90	391.3	50.9	39.1	80.2
100	434.8	56.5	43.5	89.1

Nitrophosphate (23-23-0)					
A	B	C	D	E	F
Quantity of N needed (kg)	Quantity of 23-23-0 fertilizer needed for quantity under column A (kg)	Quantity ammonium-N present in the fertilizer under column B (kg)	Quantity of nitrate-N present in the fertilizer under column B (kg)	Quantity of Water soluble P present in the fertilizer under column B (kg)	Quantity of calcium nitrate present in the fertilizer under column B (kg)
10	43.5	5.0	5.0	8.0	0.43
20	87.0	10.0	10.0	16.1	0.87
30	130.4	15.0	15.0	24.1	1.30
40	173.9	20.0	20.0	32.2	1.74
50	217.4	25.0	25.0	40.2	2.17
60	260.9	30.0	30.0	48.3	2.61
70	304.3	35.0	35.0	56.3	3.04
80	347.8	40.0	40.0	64.3	3.48
90	391.3	45.0	45.0	72.4	3.91
100	434.8	50.0	50.0	80.4	4.35