

Ready reckoners for potassium 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 fertilizers potassium (K) nutrition of the vines. The figures have been rounded to nearest decimal point. The calculations have been made based on minimum nutrient (N, P₂O₅ or K₂O as the case may be) contents required to be present in the fertilizer as per the specifications and composition 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.

To convert K to K₂O multiply K by 1.21.

Example: 10 kg K = 10 x 1.21 = 12.1 kg K₂O

To convert K₂O to K divide K₂O by 1.21.

Example: 12.1 kg K₂O = 12.1 / 1.21 = 10 kg K

Potassium sulphate (50% K₂O and 17.5% S)				
A	B	C	D	E
Quantity of K ₂ O needed (kg)	Quantity of SOP needed for K ₂ O under Column A (kg)	Quantity of sulphur in SOP under column B (kg)	Quantity of chlorides in SOP under column B (kg)	Quantity of Na in SOP under column B (kg)
0	20	3.5	0.5	0.4
20	40	7.0	1.0	0.8
30	60	10.5	1.5	1.2
40	80	14.0	2.0	1.6
50	100	17.5	2.5	2.0
60	120	21.0	3.0	2.4
70	140	24.5	3.5	2.8
80	160	28.0	4.0	3.2
90	180	31.5	4.5	3.6
100	200	35.0	5.0	4.0

Potassium nitrate (13-0-45): 100% water soluble complex				
A	B	C	D	E
Quantity of K ₂ O needed (kg)	Quantity of 13-0-45 needed for K ₂ O under Column A (kg)	Quantity of nitrate-N in 13-0-45 under column B (kg)	Quantity of chlorides 13-0-45 under column B (kg)	Quantity of Na 13-0-45 under column B (kg)
10	22.2	2.89	0.33	0.22
20	44.4	5.78	0.67	0.44
30	66.7	8.67	1.00	0.67
40	88.9	11.56	1.33	0.89
50	111.1	14.44	1.67	1.11
60	133.3	17.33	2.00	1.33
70	155.6	20.22	2.33	1.56
80	177.8	23.11	2.67	1.78
90	200.0	26.00	3.00	2.00
100	222.2	28.89	3.33	2.22

13-5-26 : 100% water soluble complex					
A	B	C	D	E	F
Quantity of K ₂ O needed (kg)	Quantity of 13-5-36 needed for K ₂ O under Column A (kg)	Quantity of P ₂ O ₅ in 13-5-36 under column B (kg)	Quantity of nitrate-N in 13-5-36 under column B (kg)	Quantity of NH ₄ -N in 13-5-36 under column B (kg)	Quantity of Na in 13-5-36 under column B (kg)
10	38.5	1.9	2.7	2.3	0.12
20	76.9	3.8	5.4	4.6	0.23
30	115.4	5.8	8.1	6.9	0.35
40	153.8	7.7	10.8	9.2	0.46
50	192.3	9.6	13.5	11.5	0.58
60	230.8	11.5	16.2	13.8	0.69
70	269.2	13.5	18.8	16.2	0.81
80	307.7	15.4	21.5	18.5	0.92
90	346.2	17.3	24.2	20.8	1.04
100	384.6	19.2	26.9	23.1	1.15

6-12-36: 100% water soluble complex					
A	B	C	D	E	F
Quantity of K ₂ O needed (kg)	Quantity of 6-12-36 needed for K ₂ O under Column A (kg)	Quantity of P ₂ O ₅ in 6-12-36 under column B (kg)	Quantity of nitrate-N in 6-12-36 under column B (kg)	Quantity of NH ₄ -N in 6-12-36 under column B (kg)	Quantity of Na in 6-12-36 under column B (kg)
10	27.8	3.3	1.25	0.42	0.14
20	55.6	6.7	2.50	0.83	0.28
30	83.3	10.0	3.75	1.25	0.42
40	111.1	13.3	5.00	1.67	0.56
50	138.9	16.7	6.25	2.08	0.69
60	166.7	20.0	7.50	2.50	0.83
70	194.4	23.3	8.75	2.92	0.97
80	222.2	26.7	10.00	3.33	1.11
90	250.0	30.0	11.25	3.75	1.25
100	277.8	33.3	12.50	4.17	1.39

N.P.K. (10-26-26)				
A	B	C	D	E
Quantity of K ₂ O needed (kg)	Quantity of 10-26-26 needed for K ₂ O under Column A (kg)	Quantity of total P ₂ O ₅ in 10-26-26 under column B (kg)	Quantity of water soluble P ₂ O ₅ in 10-26-26 under column B (kg)	Quantity of N in 10-26-26 under column B (kg)
10	38.5	10.0	8.5	3.85
20	76.9	20.0	17.0	7.69
30	115.4	30.0	25.5	11.54
40	153.8	40.0	34.0	15.38
50	192.3	50.0	42.5	19.23
60	230.8	60.0	51.0	23.08
70	269.2	70.0	59.5	26.92
80	307.7	80.0	68.0	30.77
90	346.2	90.0	76.5	34.62
100	384.6	100.0	85.0	38.46

N.P.K. (10-26-26) fortified with boron					
A	B	C	D	E	F
Quantity of K ₂ O needed (kg)	Quantity of 10-26-26 needed for K ₂ O under Column A (kg)	Quantity of total P ₂ O ₅ in 10-26-26 under column B (kg)	Quantity of water soluble P ₂ O ₅ in 10-26-26 under column B (kg)	Quantity of N in 10-26-26 under column B (kg)	Quantity of B in 10-26-26 under column B (kg)
10	38.5	10.0	8.5	3.85	0.12
20	76.9	20.0	17.0	7.69	0.23
30	115.4	30.0	25.5	11.54	0.35
40	153.8	40.0	34.0	15.38	0.46
50	192.3	50.0	42.5	19.23	0.58
60	230.8	60.0	51.0	23.08	0.69
70	269.2	70.0	59.5	26.92	0.81
80	307.7	80.0	68.0	30.77	0.92
90	346.2	90.0	76.5	34.62	1.04
100	384.6	100.0	85.0	38.46	1.15