

Cereal General Nitrogen Recommendation Worksheet

Step 1: Crop N requirement (R)

Enter base value (in kg N/ha) from **Table 1** or from **line 106 in Table 2**

R in kg N/ha = (1)

Step 2: Credit manure or compost ammonium nitrogen (M_{AMM}) in kg N/ha

Enter manure or compost application rate:

- in gallons/acre (a) and (b) = 89,000
- OR** in m³/ha (a) and (b) = 1,000
- OR** in tons/acre (a) and (b) = 445
- OR** in tonnes/ha (a) and (b) = 1,000

Enter manure ammonium concentration in ppm (line 101 from **Table 3**) (c)

Enter manure ammonium availability coefficient (from **Table 4**) (d)

M_{AMM} in kg N/ha = (a) x (c) x (d) ÷ (b) = (2)

Step 3: Credit manure or compost organic nitrogen (M_{ORG}) in kg N/ha

Enter (a) and (b) from Step 2: (a) (b)

Enter manure organic N concentration in ppm (line 104 from **Table 3**) (c)

Enter manure organic N availability coefficient (from **Table 5**) (d)

M_{ORG} in kg N/ha = (a) x (c) x (d) ÷ (b) = (3)

Step 4: Credit crop grown in the previous year (C)

	Alfalfa	Red clover (2nd yr)	Red Clover (seeding yr)	Soybean	Annual ryegrass
Less than 1/3 stand:	0	0	0	0	0
Between 1/3 and 2/3 stand:	40	20	10	0	0
More than 2/3 Stand:	80	40	20	10	-15

C in kg N/ha = (enter appropriate value from above) = (4)

Step 5: Credit soil organic matter content (S)

- Soil organic matter greater than or equal to 3.5% 15
- Soil organic matter between 2.5% and 3.5% 0
- Soil organic matter less than 2.5% -15

S in kg N/ha = (enter appropriate value from above) = (5)

Step 6: Calculate general fertilizer nitrogen recommendation (F_N) in kg N/ha

(Multiply F_N by 0.89 to get fertilizer nitrogen recommendation in units of lb N/ac)

F_N in kg N/ha = (1) - (2) - (3) - (4) - (5) = (6)

This is your general fertilizer nitrogen recommendation. If you used the SMN test, continue on the second page of this insert.

SMN Calculation Worksheet for Cereals

Step 7: Crop N requirement (R)

Enter crop N requirement (R) from **line (1)** on previous page

R in kg N/ha = (7)

Step 8: Credit ammonium in SMN test (SMN_{AMM}) in kg N/ha

Enter SMN ammonium test value in ppm _____ (a)

If (a) \leq 9, then $SMN_{AMM} = 0$

If (a) $>$ 9, then $SMN_{AMM} = [\text{_____ (a)} - 9] \times 1.9 = \text{_____ (b)}$

SMN_{AMM} in kg N/ha = (enter 0 or (b) as appropriate) = (8)

Step 9: Credit nitrate in SMN test (SMN_{NIT}) in kg N/ha

Enter SMN nitrate test value in ppm _____ (a)

If (a) \leq 4, then $SMN_{NIT} = 0$

If (a) $>$ 4, then $SMN_{NIT} = [\text{_____ (a)} - 4] \times 3.0 = \text{_____ (b)}$

SMN_{NIT} in kg N/ha = (enter 0 or (b) as appropriate) = (9)

Step 10: Credit soil organic matter content (S)

Enter soil organic matter credit (S) from **line (5)** on previous page

S in kg N/ha = (10)

Step 11: Calculate nitrogen recommendation (F_{SMN}) based on the SMN test in kg N/ha

This is your fertilizer nitrogen recommendation using the SMN test in kg N/ha

F_{SMN} in kg N/ha = (7) - (8) - (9) - (10) = (11)

Step 12: Compare to general fertilizer nitrogen recommendation

Enter F_{SMN} from **line (11)** _____ (a)

Enter F_N from **line (6)** on previous page _____ (b)

Fertilizer nitrogen recommendation is (a) or (b), **whichever is lower** = (12)

(Multiply F_N or F_{SMN} by 0.89 to get fertilizer nitrogen recommendation in units of lb N/ac)