

# 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 m<sup>3</sup>/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)