

**Nitrogen:** The N recommendation is the total amount needed for the entire growing season, based on yield goal, (5 year field avg.) plus 20%. Subtract residual N reported in soil test from N rate suggested for the yield goal you have chosen.

**Phosphorus and Potassium:** Both P and K are based on a sufficiency level. Soil tests report P and K values as soil test index. The P and K tables show the corresponding percent sufficiency and recommend the fertilizer rate in pounds of P<sub>2</sub>O<sub>5</sub> and K<sub>2</sub>O /ac.

**Yield goals** are not the most accurate method to determine N rates. **Reference Strips** optimize the return on N fertilizer investments by accounting for the temporal and spatial variabilities that exist in all fields.

## Nitrogen

Grain Only				Grazing	
Yield Goal in bu/ac			N Needs	Yield Goal	
Wheat	Barley	Oats	lb/ac	Forage tons/ac	N Needs lb/ac
15	20	25	30	0.5	30
20	25	35	40	1.0	60
30	35	55	60	1.5	90
40	50	70	80	2.0	120
50	60	90	100	2.5	150
60	75	105	125	3.0	180
70	90	125	155	3.5	210
80	100	140	185	4.0	240
100	125	175	240		

## Phosphorus

Soil Test Index	Percent Sufficiency	P <sub>2</sub> O <sub>5</sub> lb/ac
0	50	80
10	70	60
20	80	40
40	95	20
65+	100	0

## Potassium

Soil Test Index	Percent Sufficiency	K <sub>2</sub> O lb/ac
0	50	60
75	70	50
125	80	40
200	95	20
250+	100	0

Crop	pH Range	Min pH
Wheat	5.5-7.0	5.4
Barley	6.5-7.0	6.1
Oats	5.8-6.5	5.4

The pH range is the soil pH that crops prefer, the Min pH is the pH at which lime should be applied. (PSS-2229)



# Nutrient Needs of: Winter Wheat, Barley and Oats