

Nutrient Needs of Oil Seeds: Canola and Sunflower



Pete's Sheets

Oklahoma State University, Department of Plant and Soil Sciences
Oklahoma Cooperative Extension Service

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 P₂O₅ and K₂O /ac.

Soil Samples: As both canola and sunflower are tap rooted crops and it is recommended that sub-soil samples (6-18 in) be collected. Both crops are capable of reaching mobile nutrients in the subsoil such as N, B, S, Cl. Metal nutrients may be deficient in high pH soils.

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Nitrogen

Canola			Sunflower	
Yld Goal	Yld Goal	N Need	Yld Goal	N Need
lbs/ac	bu/ac	lbs ac	lbs/ac	lbs/ac
1000	20	50	500	33
1250	25	63	1000	65
1500	30	75	1250	82
1750	35	88	1500	98
2000	40	100	1750	114
2500	50	125	2000	130
3000	60	150	2500	163
3500	70	175	3000	195
4000	80	200	3500	228

Phosphorus

Soil Test	Canola % P ₂ O ₅	Sunflower P ₂ O ₅ \$
P	Suf lb/ac	lb/ac
0	25 80	60
10	45 60	50
20	80 40	30
40	90 20	20
65+	100 0	0

Potassium

Soil Test	Canola % K ₂ O	Sunflower K ₂ O\$
K	Suf lb/ac	lb/ac
0	50 60	70
75	70 50	60
125	80 40	35
200	95 20	15
250+	100 0	0

Sulfur*

Yld Goal	S Need
bu/ac	lb/ac
20	2.5
30	3.75
40	5
50	6.25
60	7.5

\$ Sunflower P and K recs adapted from High Plains Sunflower Production Handbook, No Suff index available

* Sulfur recommendations for Canola.. Based on 1 lb S per 20 lbs N.

Crop	pH Range	Min pH
Canola	5.8-7.0	5.8
Sunflower	6.0-7.0	6.0

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