

Soil Fertility: Q and A

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What is the average P content of poultry manure in Delaware?

- (A) 100 lb P_2O_5 /ton
- (B) 44 lb P_2O_5 /ton
- (C) 36 lb P_2O_5 /ton
- (D) 65 lb P_2O_5 /ton
- (E) 56 lb P_2O_5 /ton

What is the average P removal in the corn grain for a 200 bu/ac crop?

- (A) 84 lb P_2O_5 /acre
- (B) 200 lb P_2O_5 /acre
- (C) 68 lb P_2O_5 /acre
- (D) 51 lb P_2O_5 /acre
- (E) 76 lb P_2O_5 /acre

Why 68 lb P_2O_5 /acre?

- Based on over 700 samples in DE
- The average P removal concentration was
0.34 lb P_2O_5 /bu
- Different than standard of 0.40 lb P_2O_5 /bu

Why 0.34 lb P_2O_5 /bu?

- Based on over 700 samples in DE
- The average P concentration was 0.31 %P
- 0.31% = 0.31 lb P/100 lb grain
- 0.31% = 0.1764 lb P/bu "dry" grain
- 0.1764 = 0.40 lb P_2O_5 /bu "dry" grain
- 0.40 = 0.34 lb P_2O_5 /bu grain @15.5% H_2O

What is the average N removal in the corn grain for a 200 bu/ac crop?

- (A) 200 lb N/acre
- (B) 220 lb N/acre
- (C) 180 lb N/acre
- (D) 100 lb N/acre
- (E) 140 lb N/acre

What is the N concentration in corn grain if removal is 0.7 lb N/bu?

- (A) 1.48 %N
- (B) 1.79 %N
- (C) 1.52 %N
- (D) 1.25 %N
- (E) 0.70 %N

Convert 1.48% N to a Removal Rate?

- Average N concentration was 1.48 %N
- 1.48 %N = 1.48 lb N/100 lb grain
- 1.48 lb = 0.83 lb N/bu "dry" grain
- 0.83 = 0.70 lb N/bu grain @ 15.5% H₂O

What is the average K removal in the corn grain for a 200 bu/ac crop?

- (A) 42 lb K₂O/acre
- (B) 200 lb K₂O/acre
- (C) 84 lb K₂O/acre
- (D) 126 lb K₂O/acre
- (E) 100 lb K₂O/acre

What is the K concentration in corn grain if removal is 0.21 lb K₂O/bu?

- (A) 0.21 %K
- (B) 1.25 %K
- (C) 0.42 %K
- (D) 0.31 %K
- (E) 0.37 %K

Convert 0.37 %K to lb K₂O/bu?

- Average K concentration was 0.37 %K
- 0.37% = 0.37 lb K/100 lb grain
- 0.37 = 0.207 lb K/bu "dry" grain
- 0.207 = 0.25 lb K₂O/bu "dry" grain
- 0.25 = 0.21 lb K₂O/bu grain @15.5% H₂O

An N concentration in soybean grain of 6.6% is equivalent to a removal of?

- (A) 3.96 lb N/bu
- (B) 6.6 lb N/bu
- (C) 3.45 lb N/bu
- (D) 0.66 lb N/bu
- (E) 1.0 lb N/bu

Convert 6.6% N to a Removal Rate?

- Average N concentration was 6.6 %N
- 6.6 %N = 6.6 lb N/100 lb grain
- 6.6 lb = 3.96 lb N/bu "dry" grain
- 3.96 = 3.45 lb N/bu grain @ 13% H₂O

A P concentration in soybean grain of 0.6% is equivalent to a removal of?

- (A) 0.72 lb P₂O₅/bu
- (B) 0.60 lb P₂O₅/bu
- (C) 1.0 lb P₂O₅/bu
- (D) 0.82 lb P₂O₅/bu
- (E) 0.92 lb P₂O₅/bu

Convert 0.6% to a Removal Rate?

- The average P concentration was 0.6 %P
- 0.6% = 0.6 lb P/100 lb grain
- 0.6% = 0.36 lb P/bu "dry" grain
- 0.36 = 0.82 lb P₂O₅/bu "dry" grain
- 0.82 = 0.72 lb P₂O₅/bu grain @13% H₂O

A K concentration in soybean grain of 1.95% is equivalent to a removal of?

- (A) 1.95 lb K₂O/bu
- (B) 1.23 lb K₂O/bu
- (C) 1.41 lb K₂O/bu
- (D) 1.00 lb K₂O/bu
- (E) 0.51 lb K₂O/bu

Convert 1.95 %K to lb K₂O/bu?

- Average K concentration was 1.95 %K
- 1.95% = 1.95 lb K/100 lb grain
- 1.95 = 1.17 lb K/bu "dry" grain
- 1.17 = 1.41 lb K₂O/bu "dry" grain
- 1.41 = 1.23 lb K₂O/bu grain @13% H₂O

So, a 50 bu/ac soybean crop would remove this amount of N-P₂O₅-K₂O?

- (A) 172 - 36 - 61
- (B) 172 - 16 - 51
- (C) 100 - 16 - 51
- (D) 50 - 50 - 50
- (E) 50 - 16 - 51

An N concentration in w. wheat grain of 2.0% is equivalent to a removal of?

- (A) 2.0 lb N/bu
- (B) 0.5 lb N/bu
- (C) 0.75 lb N/bu
- (D) 1.25 lb N/bu
- (E) 1.0 lb N/bu

A P concentration in w. wheat grain of 0.38% is equivalent to a removal of?

- (A) 0.38 lb P_2O_5 /bu
- (B) 0.60 lb P_2O_5 /bu
- (C) 0.45 lb P_2O_5 /bu
- (D) 0.52 lb P_2O_5 /bu
- (E) 0.95 lb P_2O_5 /bu

A K concentration in w. wheat grain of 0.45% is equivalent to a removal of?

- (A) 0.28 lb K_2O /bu
- (B) 0.32 lb K_2O /bu
- (C) 0.45 lb K_2O /bu
- (D) 1.00 lb K_2O /bu
- (E) 0.90 lb K_2O /bu

So, an 80 bu/ac wheat crop would remove this amount of N- P_2O_5 - K_2O ?

- (A) 100 - 16 - 19
- (B) 80 - 49 - 31
- (C) 80 - 16 - 19
- (D) 90 - 44 - 45
- (E) 80 - 36 - 23

200 b/a corn, 60 b/a soy, & 80 wheat /40 soy removes N- P_2O_5 - K_2O lb/ac?

- (A) 220 - 188 - 176
- (B) 565 - 176 - 188
- (C) 565 - 77 - 156
- (D) 775 - 188 - 156
- (E) 220 - 176 - 188

A 3-yr cycle of only corn (250 b/a) would remove this N- P_2O_5 - K_2O lb/ac?

- (A) 660 - 355 - 358
- (B) 500 - 271 - 208
- (C) 500 - 208 - 271
- (D) 725 - 255 - 158
- (E) 665 - 271 - 208

What is the average Mn concentration in corn grain in Delaware?

- (A) 0.03 ppm
- (B) 50 ppm
- (C) 10.0 ppm
- (D) 5.0 ppm
- (E) 1.0 ppm

What is the average Mn removal in the corn grain for a 200 bu/ac crop?

- (A) 0.05 lb Mn/acre
- (B) 1.0 lb Mn/acre
- (C) 5.0 lb Mn/acre
- (D) 0.0001 lb Mn/acre
- (E) None of the above

Convert ppm to a Removal Rate?

- Average Mn concentration was 5 ppm
- 5 ppm = 5 lb Mn per million lbs of grain
- 5 ppm = 0.00005 lb Mn/lb grain
- 5 ppm = 0.00028 lb Mn/bu of grain
- 5 ppm = 0.00024 lb Mn/bu @ 15.5% H₂O
- 200 bu/ac = 0.05 lb Mn/acre