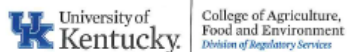


Penalty Matrix

AAPFCO vs. KY

Commercial Fertilizer Values



MEMORANDUM

To: Kentucky Fertilizer Registrant

From: Stephen McMurry, Director of Fertilizer & Seed Regulatory Programs *sm*

Date: November 27, 2017

Subject: Survey of Commercial Values of Fertilizer Nutrients

Please return in the self-addressed envelope provided or FAX to be received no later than

December 31, 2017

****Please note that all information is confidential****

Under the provisions of KRS 250.401, I am conducting a survey to determine the current commercial values of fertilizer nutrients. The values will be used in determining and assessing the penalty payments that will be published for the calendar year 2018.

Please note that we want the retail value in DOLLARS PER TON. If you provide the data in any other terms please note the change.

On the back of this page you will find tables listing various fertilizer nutrients sold in bulk. You may not have retail prices available for all materials listed, but please provide the current retail value (the price charged to your customers FOB from your facility). Use the blank lines for materials not listed and be certain to state the grade or guarantees.

ALL INFORMATION IS HELD IN STRICT CONFIDENCE, NO INDIVIDUAL SELLERS ARE IDENTIFIED.

If you have any questions or need any assistance please call 859-257-2668 or email June Crawford at june.crawford@uky.edu.

Thank you for your anticipated response.

Fertilizer Regulatory Program
103 Regulatory Services Building
Lexington KY 40546-0275
Fax: 859-257-9478

see blue.

Fertilizer Price Survey 2017

N Materials	\$/ton
Anhydrous Ammonia (82-0-0)	
Ammonium Nitrate (34-0-0)	
Ammonium Sulfate (21-0-0)	
Sodium Nitrate (16-0-0)	
Urea (46-0-0)	360
Sulfur Coated Urea (%N)	
UAN (28-0-0)	200
UAN (30-0-0)	
UAN (32-0-0)	229
Other (- -0-0) State N %	

P Material	\$/ton
Triple Super Phosphate (0-46-0)	
Triple Super Phosphate (0-44-0)	

N - P Materials	\$/ton
DAP (18-46-0)	435
MAP (11-52-0)	
Other (- -0-0) State N-P ₂ O ₅ %	

K Materials	\$/ton
Sulfate of Potash Mag (0-0-22)	
Sul-Po-Mag (0-0-20) K ₂ O	
Sulfate of Potash (0-0-50)	750
Muriate of Potash (0-0-60)	335
Muriate of Potash (0-0-62)	
Other (0-0-) State K ₂ O %	


N - K Materials	\$/ton
Potassium Nitrate (13-0-44)	
Sodium Potassium Nitrate 15-0-14	
Other (-0-) N-S-K ₂ O %	

Secondary/Micro Nutrient Materials	\$/ton
Boron (10% B)	
Boron (15% B)	
Calcium Sulfate (Gypsum)	
Copper Sulfate (Monohydrate- Cu 35%)	
Copper, Other (% Cu)	
Iron Oxide (State Fe %)	
Iron Sulfate (State Fe%)	
Iron Sulfate (32% Fe)	
Mag Oxide (58% Mg)	
Mag Oxide (36% Mg)	
Mag Sulfate (Epsom Salt): 9.8% Mg, 12.9% S	
Manganese Sulfate (Mn %)	
Molybdenum (Ammonium Molybdate 54% Mo)	
Molybdenum (Sodium Molybdate 39% Mo)	
Sulfur (90% S)	
S/M Mixture (Guarantees:)	
Zinc Oxide (Zn %)	
Zinc Sulfate (36% Zn)	
Zinc Oxy-Sulfate (Zn %)	
Other (Guarantee)	
Other (Guarantee)	

**Please list your prices in DOLLARS PER TON
If you provide data in any other terms, please note change.**

Company: Southern States - Bowling Green	No. 0004BD
By: <i>Brad G. Hays</i> (Please print)	
Phone: 270 893-1146	
Email: <i>brad.g.hays@ssc.com</i>	
Please use the envelope provided to return or fax to 859-257-9478 by December 31st.	

MEMORANDUM

TO: All Kentucky Fertilizer Registrants
FROM: Stephen McMurry, Coordinator 
Fertilizer and Seed Regulatory Program
DATE: January 25, 2018
SUBJECT: COMMERCIAL FERTILIZER VALUES FOR 2018.

Under the provisions of Chapter 250.401 of the Kentucky Fertilizer Law, the following unit values are announced for use in assessing penalties of deficient fertilizer.

NUTRIENT	DOLLARS/UNIT (20 LBS.)
Total Nitrogen (N)	\$8.55
Avail. Phosphate (P_2O_5)	\$7.15
Soluble Potash (K_2O)	
*Tobacco (low Cl)	\$14.29
*Non-Tobacco	\$5.49
Calcium (Ca)	\$6.76
Magnesium (Mg)	\$31.69
Sulfur (S)	\$9.45
Boron (B)	\$109.91
Copper (Cu)	\$166.67
Iron (Fe)	\$16.50
Manganese (Mn)	\$35.71
Molybdenum (Mo)	\$20.20
Zinc (Zn)	\$51.50

Calculation Note:

- (1) The N value for DAP & MAP was assigned from anhydrous ammonia (AA).
- (2) The value of P from DAP and MAP was calculated using the assigned value of N from AA.
- (3) The final values for N and P are weighted averages based on FY 16 (distributed) tonnage for ammonium nitrate, Urea, DAP, TSP, MAP, and ammonium sulfate.

These values are state-wide averages taken from the December 2017 survey. They represent the average of responses from throughout the state for retail value of bulk mixed fertilizers.

If you have any questions, please call me at (859)-257-2785; or, email: smcmurry@uky.edu

see blue.

- Section 10. Plant Food Deficiency (Official 2003)
- (a) Penalty for nitrogen, available phosphate, and soluble potash --
(1) If the analysis shall show that a fertilizer is deficient in one or more of its guaranteed primary plant nutrients beyond the investigational allowances and compensations as established by regulation, or (2) if the overall index value of the fertilizer is below the level established by regulation, a penalty payment of _____ times the value of such deficiency or deficiencies shall be assessed. When a fertilizer is subject to a penalty payment under both (1) and (2), the larger penalty payment shall apply. (Official 1994)

Some items we need to know

- Fertilizer values (dollars/unit) 20 pounds
 - N = \$10
 - P_2O_5 = \$7
 - K_2O = \$5

Sampled 20-10-10

- Guarantees
- $N = 20 * 10 = \$200$
- $P = 10 * 7 = 70$
- $K = 10 * 5 = 50$
- Relative Value = 320
- Found
- $N = 19.1 * 10 = \$191$
- $P = 9.5 * 7 = 66.50$
- $K = 8 * 5 = 40$
- Relative Value = 297.5
- Overall Index Value =
 $(297.5/320) * 100 =$
92.96

Is the OIV deficient

- Page 48 of OP #71
 - When the OIV is below 98%
 - Table on page 49 shows the investigational allowances for NPK
 - OIV calculation, Page 50
 - Secondary and micro plant nutrients IA on page 50

So what is the penalty

- Nitrogen = $200 - 191 = \$9$
- Potash = $50 - 40 = \$10$
- Total = $\$19$

- OIV = $320 - 297.50 = \$22.50$

- Largest Penalty Applies so penalty assessed per ton is $\$22.50$

Pages 41-42, OP #71

- (b) Penalty payment for other deficiencies -- Deficiencies beyond the investigational allowances as established by regulation in any other constituent(s) covered under Section 4 paragraphs (c) (1) and (c) (2) of this Act, which the registrant/licensee is required to or may guarantee, shall be evaluated and penalty payments prescribed by the _____. (
- (c) All penalty payments assessed under this section shall be paid by the registrant/licensee to the consumer of the lot of fertilizer represented by the sample analyzed within three months after the date of notice from the _____ to the registrant/licensee, receipts taken therefore and promptly forwarded to the _____. If said consumer cannot be
- found, the amount of the penalty payments shall be paid to the _____ who shall deposit the same in the appropriate state fund allocated to fertilizer control service. If upon satisfactory evidence a person is shown to have altered the content of a fertilizer shipped to him by a registrant/licensee, or to have mixed or commingled fertilizer from two or more suppliers such that the result of either alteration changes the analysis of the fertilizer as originally guaranteed, then that person shall become responsible for obtaining a registration/license and shall be held liable for all penalty payments and be subject to other provisions of this Act, including seizure, condemnation and stop sale.
- (d) A deficiency in an official sample of mixed fertilizer resulting from non-uniformity is not distinguishable from a deficiency due to actual plant nutrient shortage and is properly subject to official action. (Official 1985)
- (e) Nothing contained in this section shall prevent any person from appealing to a court of competent jurisdiction praying for judgment as to the justification of such penalty payments.

Differences in the KY Penalty Matrix

- KY's IA for NPK are different than AAPFCO
 - N range of 0.37 – 1.28, AAPFCO 0.49 – 0.88
 - P range 0.65 – 1.67, AAPFCO 0.67 – 1.10
 - K range 0.39 – 1.36, AAPFCO 0.41 – 1.80
- OIV, IA is 97% compared to 98%

Penalties for NPK and OIV by following schedule

# IA below guarantee	Penalty Schedule
≤ 2	Equal to the monetary value of the deficiency
$> 2 \leq 3$	Two (2) times the monetary value of the deficiency
> 3	Three (3) times the monetary value of the deficiency

DAP (18-46-0) sample

Found

$N = 19$

$P = 42.50$

$RV = 487.50$

$OIV = 487.5/520 = 93.75$

- $46 - 42.5 = 3.5$
- $P IA = 1.67$
- $3.5/1.67 = 2.09$ IA away from the guarantee
- Penalty = 2 times the monetary value of P
- $\$322 - 297.5 = \24.50
- $\$24.50 * 2 = \49 per ton

Penalty Adjustments

(only apply when OIV is = to or greater than 97%)

# of IA below guarantee	Penalty Adjustment
No more than one (1) Deficiency that is less than or equal to two (2) IA's	Penalty Adjusted to zero
No more than one (1) deficiency that is greater than two (2) but less than three (3) IA's	Value of the overages may adjust to 100% of the value of the deficiencies
Two (2) deficiencies that are less than three (3) IA's: or, no more than one (1) deficiency that is equal to or greater than three (3) but less than four(4) IA's	Value of the overages may adjust up to 75% of the value of the deficiencies

DAP (18-46-0) sample

Found

$N = 19.5$

$P = 44.3$

$RV = 505.1$

$OIV = 505.1/520 = 97.13$

- $46 - 44.3 = 1.7$
- $P \text{ IA} = 1.67$
- $1.7/1.67 = 1.02$ IA away from the guarantee
- Penalty = the monetary value of P
- $\$322 - 312.20 = \9.8 per ton
- Penalty adjustment, OIV >97% and P is < 2 IA so adjusted to \$0.

Secondary Micro Penalties

- Separate from the NPK calculations
- When an NPK penalty exists, secondary penalties are added to the NPK penalty
- Total penalty cannot be more than OIV

Secondary Penalty

# of IA below guarantee	Penalty Schedule
≤ 2	Equal to the monetary value of the deficiency
> 2	Two (2) times the monetary value of the deficiency

Sulfur guarantee of 90%

- Sulfur Found 88.5%
- IA for Sulfur 0.2 unit + 5% of guarantee, but the maximum allowance will be one unit (1%)
- So the IA for the above is 1%
- Sulfur value $90 * \$9.45 = \850.50
- Sulfur found value $88.5 * 9.45 = 836.33$
- Penalty $850.50 - 836.33 = \$14.17$ per ton