Welcome To The 2016 Fluid Fertilizer Technology Roundup

Council Bluffs, IA
December 6-7, 2016

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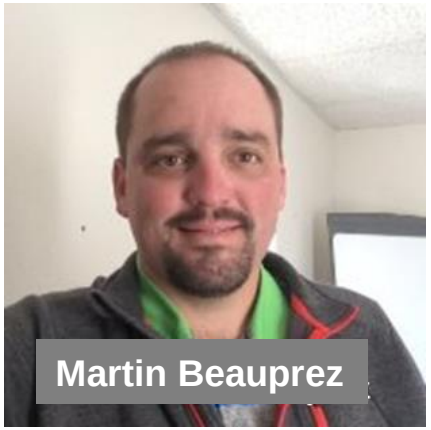

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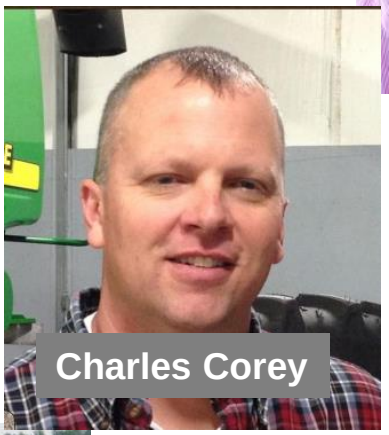

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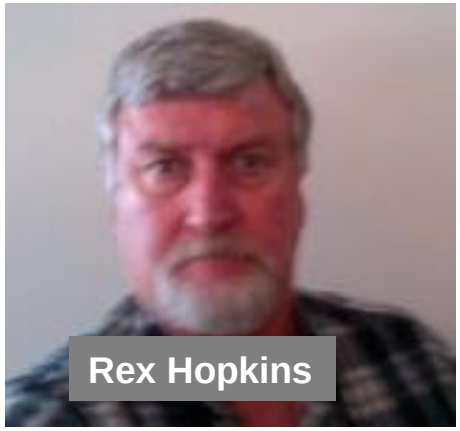

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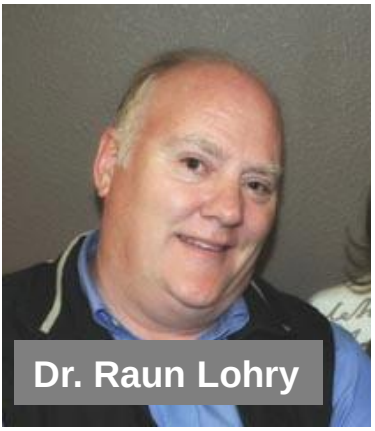
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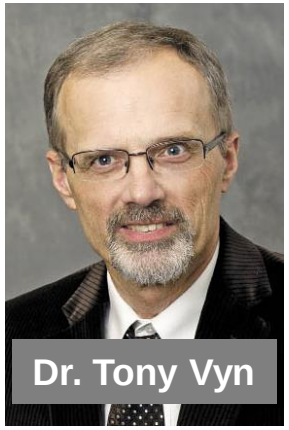
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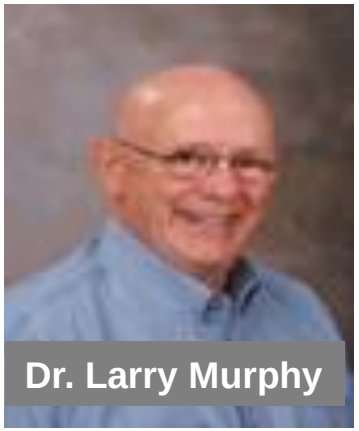
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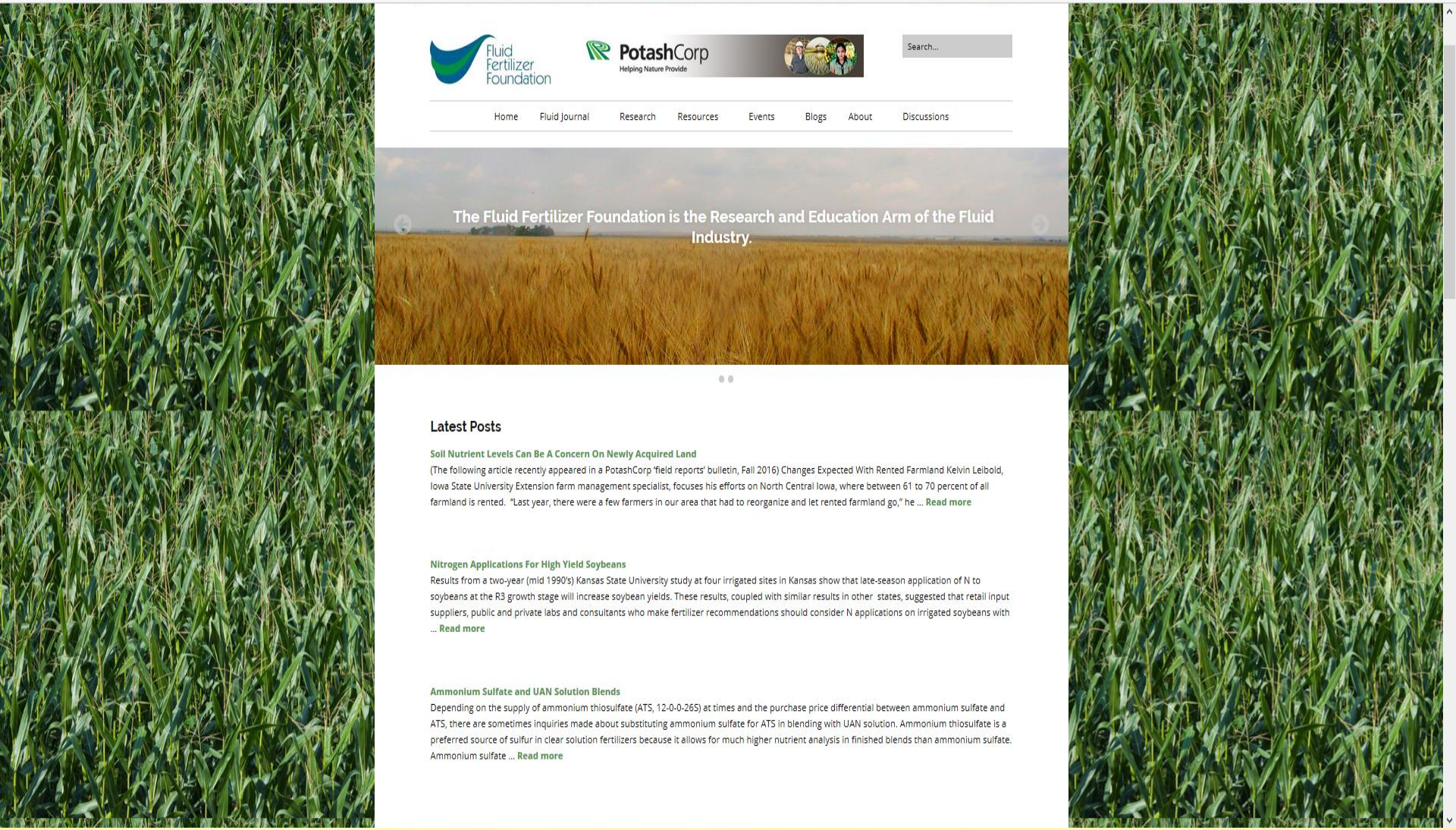
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Soil Nutrient Levels Can Be A Concern On Newly Acquired Land
(The following article recently appeared in a PotashCorp 'field reports' bulletin, Fall 2016) Changes Expected With Rented Farmland Kelvin Leibold, Iowa State University Extension farm management specialist, focuses his efforts on North Central Iowa, where between 61 to 70 percent of all farmland is rented. "Last year, there were a few farmers in our area that had to reorganize and let rented farmland go," he ... Read more
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From The Fluid Journal

Fluid JOURNAL
Official Journal of the Fluid Fertilizer Foundation
Early Spring 2008
Vol. 16 No. 2, Issue #60

Drs. Xinhua Yin, Clark Seavert, and Jinhe Bai

Split N and P Fertigation Beneficial For Pear Production

Banding N and P also increases fruit yield and size in Oregon studies.

"Studies conducted on a Parkdale soil show that a shift from single surface broad- casting of dry nitrogen (N) and phosphorus (P) to split N and P fertigation benefits fruit yield and size as well as reduces fruit scald and N and P con-sumption. In addition, banding N and P also increases fruit yield and size and reduces fruit scald when compared with surface broadcasting."

Fluid Journal
2008

Why UAN Solution?

Adaptability and Flexibility!

Dr. Dale F. Leikam

The Fluid Journal • Official Journal of the Fluid Fertilizer Foundation • Fall 2012 • Vol. 20, No. 4, Issue# 78

Summary: *The popularity of urea-ammonium nitrate solution (UAN) in the U.S. has increased steadily and substantially over the past 50 years. While direct-applied anhydrous ammonia dominated the overall U.S. nitrogen (N) marketplace through the 1980s, UAN and anhydrous ammonia have each had about the same market share (nutrient basis) in the U.S. over the past decade (Figure 1). While UAN consumption is not as high in other places across the globe as in North America, the global popularity of UAN continues to increase, especially in Europe and the former Soviet Union.*

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Fluid Facts

WHY FLUIDS ?

Top 10 lists are ever popular in our culture today – so what are the top 10 advantages of fluid fertilizers? Ask a handful of farmers and dealers and you likely will come up with a handful of different answers. There are so many, and the advantages so varied, that it is not possible to come up with a single top 10 list that everyone can agree to! Some advantages benefit everyone. For others their appeal depends on the specific situation involved. Typical benefits noted include things such as: a wide variety of fertilizer placements, homogeneous blends, best adapted for split applications, high nutrient use efficiency, handling conveniences, provides environmental benefits, required for fertigation, best suited for variable rate application, and many other benefits that give fluids a distinct economic appeal. While it is not possible to name the definitive top 10 benefits of fluids that apply in all situations, these top five advantages of fluid fertilizers should broadly fit most everyone. Let's start with number five!

Fluid Top 5 Advantages

#5 Logistics. *There is no doubt that fluid fertilizers excel in providing efficient logistics, which allows for the necessary timeliness of crop production practices required for efficient crop production.*

#4 ….. Right Rate. *Average application rates within a field are only one aspect of the 'right' rate. Application uniformity across the application swath and across the field (or portion of field) is equally important.*

Fluid fertilizers are homogeneous, with each drop having the same composition as the next drop. On the other hand, once blended, solid fertilizers immediately begin the process of unblending, segregating and becoming increasingly non-uniform during each step of the application process.

An often overlooked aspect in achieving the 'right' rate is the concept of achieving continuous crop nutrient bands in preplant and starter band applications. The probability of roots contacting a band and proliferating in the band will be higher if the fertilizer is deposited in a continuous, unbroken nutrient band as opposed to intermittent bands resulting from dry fertilizer granules.

#3 ….. Flexibility. *Because fluid fertilizers have unparalleled versatility and adaptability as compared to other fertilizer, flexibility is often the first thing that comes to mind when discussing the advantages of fluid fertilizers.*

Fluids are versatile and fit all crop nutrient placements, application methods, and nutrient timings – a characteristic not shared with any other class of fertilizer products.

#2 ….. Agronomics. *Fluid fertilizers, in conjunction with the previously discussed benefits associated them, have a long documented research history of providing high nutrient use efficiency (NUE), high yields, and improved environmental stewardship.*

#1 ….. Value. *The benefit of fluid fertilizers is high value – the overall benefit relative to costs. And the totality of the benefits associated with fluid fertilizers far outstrips any difference in the purchase price of specific crop nutrients.*

High Value Provides For Prosperity – Low Cost Does Not!

Author Credit

Dr. Dale Leikam is President of the Fluid Fertilizer Foundation in Manhattan, KS.

Full paper is available from the Spring 2014 Fluid Journal
http://www.fluidsjournalonline.com

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From The Fluid Journal

Dr. P. Motavalli, Dr. K. Nelson, Dr. G. Stevens, and S. Phurahong

What About Foliar K On Soybeans?

Despite a relatively inconsistent soybean response to foliar K, studies show an opportunity may exist to provide growers with a cost-effective method of applying foliar K.

"Among the conclusions reached by this research is that foliar potassium (K) fertilization may be a supplemental practice to long term K fertilization practices that build up and maintain soil test K levels."

Fluid Journal
2005

Dr. Bill Weir

Foliar Potassium Bumps Cotton Yields

California researcher reports consistent yield increases to foliar-applied potassium over a period of years in the San Joaquin Valley.

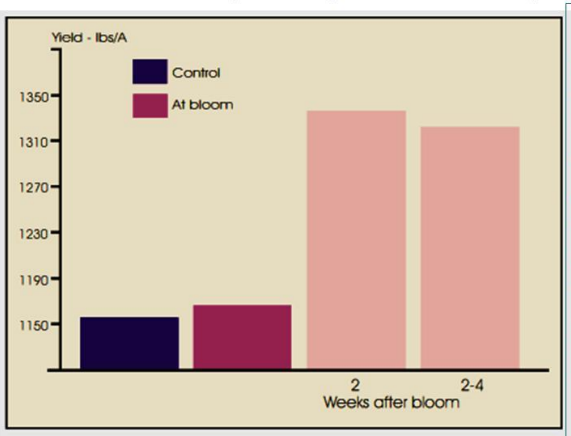

Figure 3. Effect of foliar K_2SO_4 on cotton yields, Weir, University of California, 1994.

"Foliar K fertilization of cotton has proven to be an important management tool for high-yielding cotton varieties in the San Joaquin Valley. Late-season K deficiencies produced by high K demand of heavy boll loads from high yielding varieties can cut yields and profits if not met with supplemental K."

Dr. Bill Weir
University of California

by Dr. Derrick M. Oosterhuis

Foliar Fertilization of K On Cotton Shows Potential

Results of three-year Beltwide study to correct K deficiencies in soil through foliar fertilization indicate need for more basic research.

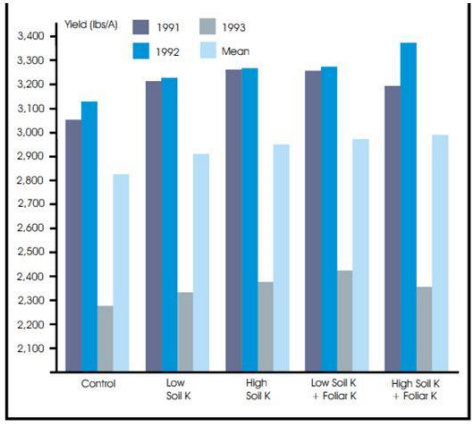

Figure 1. Mean of seed cotton yields averaged over sites for foliar potassium studies in 12 Cotton Belt states, 1991-1993.

'…… foliar application of KNO3 appears to offer some potential for supplementing preplant soil applications of potassium fertilizer. The results have been variable and somewhat unpredictable. Significant yield differences, as stated earlier, have occurred about 40 percent of the time.'

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Soil Nutrient Levels Can Be A Concern On Newly Acquired Land

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Fluid JOURNAL
Official Journal of the Fluid Fertilizer Foundation
Fall 2009
Vol. 17 No. 4, Issue #66

Dr. D. Leikam

Surface Dribbled N, P and S On Bromegrass

R. Lamond, KSU – 3 yr. average

			Bromegrass forage			
N	P_2O_5	S	Yield	Protein	P	S
----------Lbs/A ---------				----------%---		
0	0	0	2530	7.2	0.17	0.15
40	0	0	4720	7.9	0.15	0.13
40	30	0	5320	7.6	0.18	0.13
80	0	0	5360	8.9	0.14	0.14
80	30	0	6310	8.5	0.18	0.13
80	30	20	6710	8.8	0.17	0.17
120	0	0	6100	10	0.14	0.14
120	30	0	6930	9.7	0.17	0.14

"…. surface banding of P and K performs very well compared to surface banding in traditional conventional-till systems with annual crops. The concentrated zones of P and K on the soil's surface associated with banding minimize contact of the applied nutrients with soil constituents, delay reversion to less soluble P forms and, as a result, improve nutrient availability and uptake."

Effect Of UAN Application Method On Bermudagrass Production

Habey et al., Texas A&M - 3 year average

UAN Method	Bermudagrass Yield	Forage N	Apparent NUE
	Lbs/A	*%*	*%*
Surface Broadcast	13,927	1.55	51.7
Surface Band	15,007	1.60	61.9
Subsurface Band	14,110	1.62	55.8

From The Fluid Journal

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