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Louisville, KY
December 8-9, 2015

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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.*

er lation Solutions for AGRICULTURE

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.

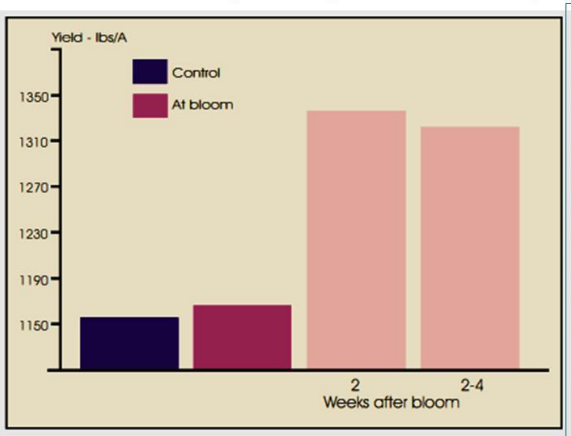

Figure 3. Effect of foliar K_2SO_4 on cotton yields, Weir, University of California, 1994.

"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.

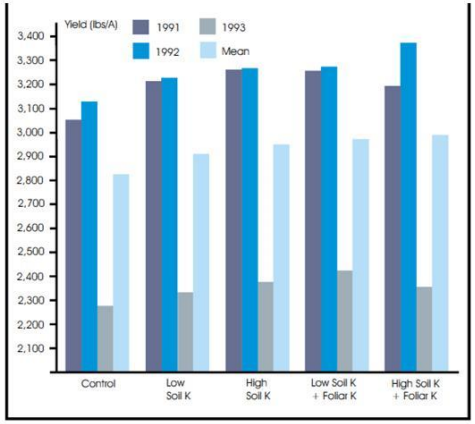

Figure 1. Mean of seed cotton yields averaged over sites for foliar potassium studies in 12 Cotton Belt states, 1991-1993.

'…… 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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From The Fluid Journal

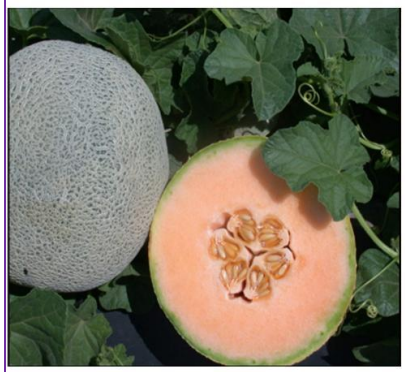
Fluid JOURNAL
Official Journal of the Fluid Fertilizer Foundation
Fall 2008
Vol. 16 No. 4, Issue #62

Drs. J. L. Jifon and G. E. Lester

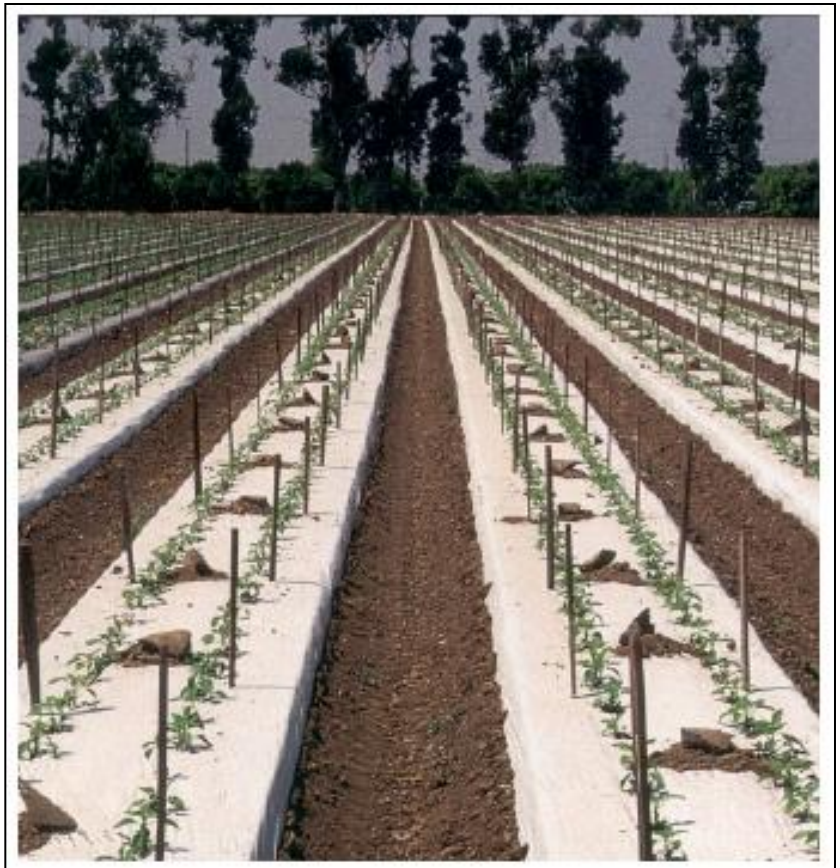
Foliar K Makes Difference On Muskmelon Fruit Quality

Fluid Journal 2008

Even though soil K concentrations were high, supplemental foliar K treatments improved fruit quality in Texas studies.



"Studies in south Texas show that supplementing soil K with foliar K can improve fruit quality characteristics. Fruit from plots receiving supplemental foliar K had higher external and internal fruit tissue firmness than control fruit and this was associated with generally higher soluble solids concentrations (SSC) in both years."



Dr. T.K. Hartz

Drip Irrigation Improves N Efficiency

Trend in California is drip irrigation to improve water/N management and protect environment.

by Dr. Brain J. Boman

Fertigation Enhances Grapefruit Yield

When combined with single broadcast fertilization, fertigation of orchards produces results superior to several conventional broadcast applications.

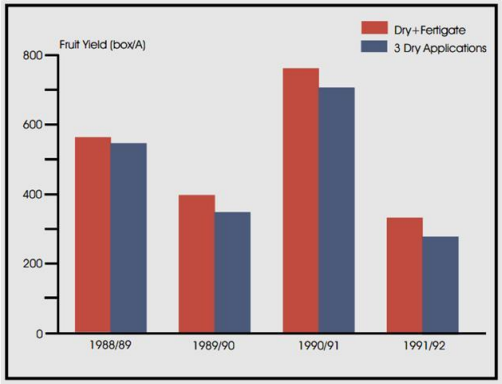


Figure 1. Mean fruit yield by fertilization on "Ruby Red" grapefruit rees, Boman, University of Florida, 1988-92.

"During a four-year trial on grapefruit trees, fertigation, combined with a broadcast treatment, outproduced three conventional broadcast applications in three of the four years. .... The production increases by the combined treatment over the conventional treatment represented an 8 percent advantage. The combination treatment also provided a higher fertilizer-use efficiency than the conventional treatments."

Dr. Brain Boman
University of Florida

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December 9-10, 2014

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From The Fluid Journal

Fluid JOURNAL
Official Journal of the Fluid Fertilizer Foundation
Late Spring 2009
Vol. 17, No. 3, Issue #65

Dr. Patrick Brown

Are Critical Values For Nutrient Management In Almond And Pistachio Orchards Invalid?

Or has there been a systematic misuse of sampling methodology and an industry- (and university-) wide misinterpretation of results?

Summary: *Ninety percent of growers and consultants participating in recent grower and consultant focus groups on nutrient management in tree crops, and the majority of respondents to an industry-wide survey, felt that the University of California (UC) "critical values" (CVs) for nutrient management in almond and pistachio were inadequate for modern production levels based on 1) current CVs are limited in application or 2) there are systematic errors in use of critical values. Review of current and historic data, however, indicates that the University of California established CVs for almond and pistachio production were reasonable and unlikely to be sufficiently incorrect to warrant the largely negative industry perceptions. It is apparent, however, that there has been a systematic misuse of sampling methodology and industry- (and university-) wide misinterpretation of results. Discussions with plant nutritionists working in high-value crops in the U.S. and in the international community suggest that this 'simple' misinterpretation of the use and interpretation of tissue samples is widespread.*

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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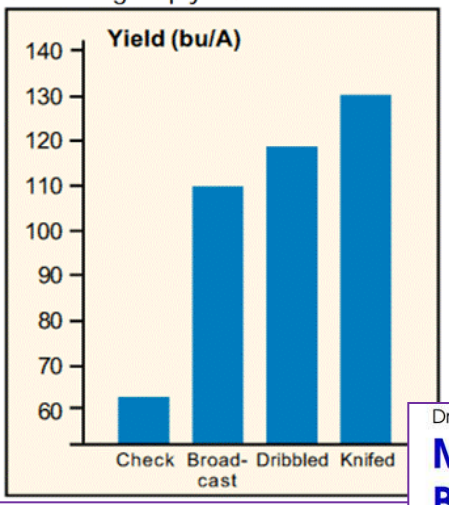
Drs. R.E. Lamond, W.B. Gordon, D.L. Fjell

Subsurface Placement Best In Reduced-Till

Kansas research show importance of nutrient management/hybrid selection in boosting crop yield



..... results suggest that responses to starter fertilizer can be very economical even on high P soils--at least with some hybrids when corn is planted early in a high-residue production system. (Lamond et al.)

Dr. Alan Blaylock

Micronutrient Response Enhanced By Fluid Starters

Mixed solutions create intimate contact between nutrient compounds in the various carriers combined.

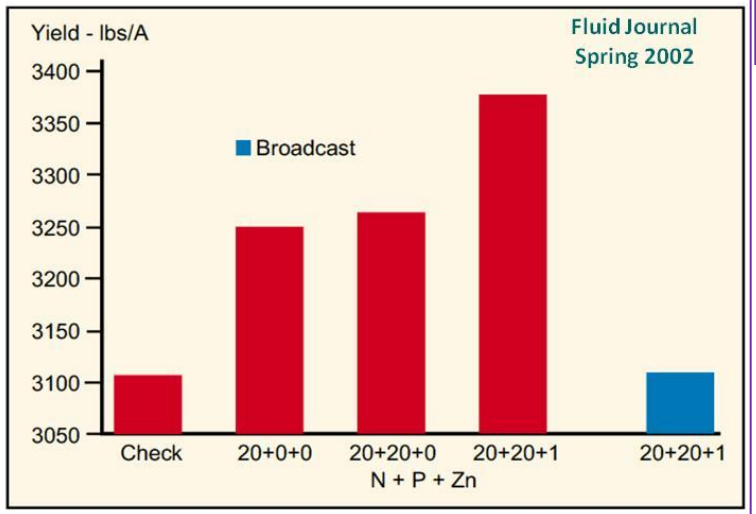


Figure 1. Yield and maturity response of dry beans to starter fertilizer applications, average of two years (1994-1995), two cultivars, four planting dates and four replications.

by Drs. John L. Kovar and Eddie R. Funderburg

Does N-P Starter Composition Affect Phosphate Availability in Cotton Soils?

Louisiana researchers find that N-P starters increase soil supply of phosphate even in soils that test very high, and that the amount of phosphate in the material, rather than the N:P_2O_5 ratio, is important.

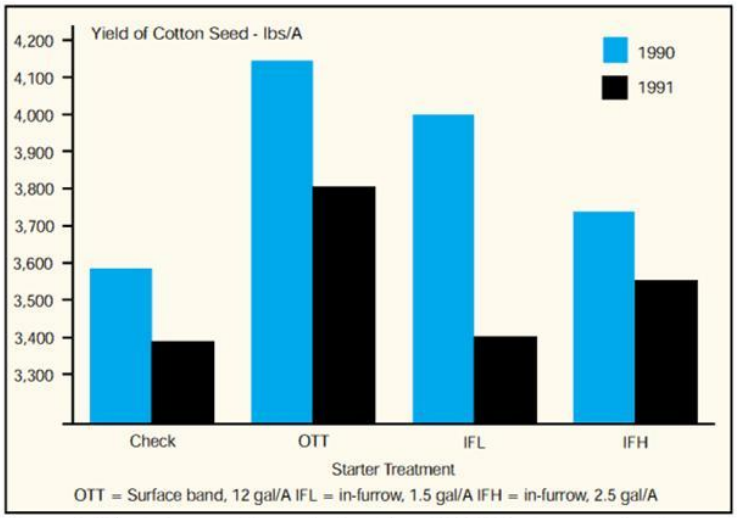


Figure 1. Effect of ammonium polyphosphate (11-37-0) starter application rate and placement on cotton yields, Kovar and Funderburg, Louisiana State University.

Fluid Journal 1994

From The Fluid Journal

Fluid Fertilizer Foundation

Solutions for AGRICULTURE

From The Fluid Journal

DR. B. HOLLOWAY, D. BRACE, DR. I. RICHTER, DR. M. MCLAUGHLIN, G. HETTIARACHCHI, DR. R. ARMSTRONG

Micronutrient Availability Improved With Fluids

"The results support our conclusion in the 2005 issue of the Fluid Forum Proceedings, which shows that the best practice for cereal production on the highly calcareous soils of South Australia should involve the use of NP fluid fertilizers containing micronutrients—principally Zn, Mn, and Cu, although Cu was not used in these experiments."

Fluid Journal
2006

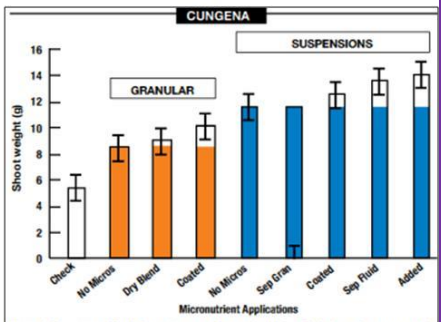


Figure 1. Response of Yitpi wheat shoot growth at early tillering. Color bars show response in shoot growth to granular and suspension fertilizer, with micronutrient response added as the clear top portion of the bar.Cungena, 2005.

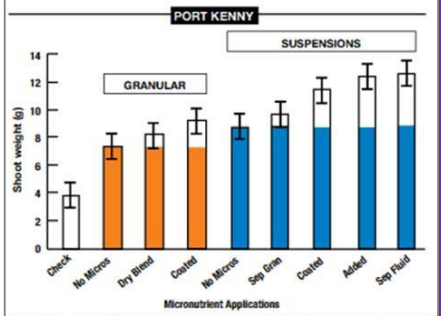


Figure 2. Response of Yitpi wheat shoot growth at early tillering. Color bars show response in shoot growth to granular and suspension fertilizer, with micronutrient response added as the clear top portion of the bar. Port Kenny, 2005.

Drs. D.Q. Zeng, P. H Brown, B.A. Holtz

Potassium Fertigation Improves Soil K Distribution, Builds Pistachio Yield and Quality

Available soil potassium rapidly depletes in postachio orchards where it is not applied, adversely affecting pistachio yield and quality.

"We initiated a three-year study to soil apply K through a micro-sprinkler in pistachio orchards ..... . Subsequent observations showed that K content increased significantly throughout the 0 to 30-inch soil profile, even though movement of surface-applied K in the soil profile was slow. Thus, more K accumulated in the fruit and leaves of the pistachio trees, appreciably improving pistachio yield and quality."

Drs. Zeng, Brown, Holtz
University of California

Fluid Journal
Summer 2000

Surface Band (Dribble) Performance On Bromegrass

Lamond and Whitney, Kansas State University

UAN Treatment	5 yr Average Yield
	DM lbs/a
Check	2610
Broadcast, 60 lbs N/a	4780
Surface Band, 60 lbs N/a	5424
Broadcast, 120 lbs N/a	6000
Surface Band, 120 lbs N/a	6017

Significant differences 4 of 5 years

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