Fertility Programs for Reduced Irrigation and Population

Irrigation Research Foundation: Yuma, CO

Experiment Info	
Planted:	5/2/25
Harvested:	10/23/25
Yield Goal:	225
Variety:	GO2-K39
Pop.:	Varied
Row Width:	
Prev. Crop:	
Plot Size:	
Reps:	

Soil Test (ppm)	
pH:	6.2
CEC:	12
%OM:	1.5
Bray P1:	40
Bicarb P:	
K:	628
S:	14
%K:	13
%Mg:	21
%Ca:	62
%H:	0
Zn:	2.6
Mn:	86
B:	0.7

Objective:

As water well production slows and regulations increase in areas of heavy groundwater use, growers are forced to cut back plant populations to match irrigation capacities. In this multi-year study, AgroLiquid aims to provide answers for growers on how fertility programs can be adjusted to match these population and irrigation reductions. In this year, we had 3 different fertilizer blend rates, 3 different watering rates, and 3 different seeding rates looking to refine how we manage different irrigation capacities in the Great Plains. Unfortunately, on July 7th, 2025, a severe hail event occurred and cause varying stand and leaf loss throughout the trial just before tassel emergence.

Applied water: 11.63 in (Pivot 28-0-0-5 total: 50 gal/A)

Seeding rate (plants/A)	AgroLiquid 45	AgroLiquid 38	AgroLiquid 30	Conventional 70	Conventional 55	Conventional 45
34,000	116.8	106.5	117.4	123.8	120.1	135.0
28,000	90.4	81.8	89.5	96.5	94.7	103.8
22,000	70.1	65.3	69.3	79.5	77.3	76.2

Applied water: 8.31 in (Pivot 28-0-0-5 total: 35 gal/A)

Seeding rate (plants/A)	AgroLiquid 45	AgroLiquid 38	AgroLiquid 30	Conventional 70	Conventional 55	Conventional 45
34,000	109.2	104.0	108.6	120.2	107.9	112.5
28,000	84.8	78.6	85.9	96.2	95.3	90.8
22,000	63.2	65.8	61.3	68.3	69.1	73.9

Applied water: 4.99 in (Pivot 28-0-0-5 total: 20 gal/A)

Seeding rate (plants/A)	AgroLiquid 45	AgroLiquid 38	AgroLiquid 30	Conventional 70	Conventional 55	Conventional 45
34,000	83.4	99.9	101.2	87.6	85.3	79.2
28,000	70.0	82.0	84.6	90.5	82.8	73.2
22,000	62.4	65.6	70.7	78.8	66.6	60.4

AgroLiquid Blend (45gal/A)		Conventional Blend (70 gal/A)	
High N	13 gal	32-0-0	10 gal
ProGerm	15 gal	10-34-0	36 gal
Kalibrate	5 gal	Krow	5 gal
AccesS	10 gal	ATS	20 gal
ML Zn	1 gal	Zn	1 gal
ML Mn	0.25 gal	Mn	0.25 gal
ML Cu	0.25 gal	Cu	0.25 gal
ML Fe HPH	0.25 gal	Red Vigor	0.25 gal
ML B	0.25 gal	B	0.25 gal

Conclusions:

Due to the hail event in the first of July, we are unable to draw any conclusions from this year's data.