Organic Wheat Trial Results

PACIFIC GRO
Seafood for the Soil™

In our organic wheat trial in the California Central Valley, our biological programs performed very well.

The farmer grows wheat in rotation with his vegetable crops and fertilizes only with poultry litter, spread pre-plant at 5 tons/acre. This year we set up 4 treatments in 2 acre plots. Each treatment included Pacific Gro together with microbials and other inputs.

Like many fields in the Central Valley, the irrigation water is high in sodium. The programs are designed to overcome the sodium challenge through healthy and diverse soil biology.

We assessed the plant response three times using Leaf Extract Analysis from Apical Crop Science and saw reduced sodium uptake and improved nutrient balance.

Three of the treatments increased the yield and the net return.

Plot 3 had the highest yield (91.1 bushels acre, a 21% increase over the control), lowest input cost at $51.00/acre, and the highest net return ($148.88/acre). There were 2 applications of Pacific Gro (Sea Phos in Feb. and Oceanic in March), 2 applications of MetaGrow ST, as well as SeaCrop.

Plot 4 used Pacific Gro and MetaGrow at different rates, and instead of Sea Crop it included Ferticell. The yield was 86 bu/acre, protein was high, and net return was $61.49/acre.

Plot 1 combined Pacific Gro with Tainio microbes, and increased yield to 90 bu/acre, at similar grain protein content. This was a relatively expensive program, but it did produce a net return of $62.93 per acre.

The Plot 2 treatment, without a microbial input, cost less and underperformed, though it did produce very high protein content. If 15% protein could earn an additional premium, then this treatment would also be profitable.

This trial demonstrated that an organic program based on poultry litter and challenged by high sodium water can be improved on and produce a better crop — with Pacific Gro and biological inoculants. The programs were very profitable for the wheat crop, and also left the soil in a much better condition to help the next crop overcome the challenge of high sodium water.

Organic Wheat Trial, with 4 different programs including Pacific Gro

Kings River Produce, Lemoore, California (south of Fresno)

Planting Date	Dec. 20, 2019
Harvest Date	June 4 - 5, 2020

Fertility Programs	Cost of Inputs	Yield, Bushels per acre	Yield vs Control, bushels/A	Net Return NROI	% Protein	Net Return including Protein Premium
Plot 1	Pacific Gro, Tainio biologicals, Ferticell, Nutra Need					
	$ 126.78	**90.0**	15.20	$ 5.75	**13.4%**	$62.93
Plot 2	Pacific Gro, Ferticell					
	$ 71.50	**73.8**	(1.20)	-$82.23	**15.1%**	-$86.86
Plot 3	Pacific Gro, SGS MetaGrow biologicals, Sea Crop					
	$ 51.00	**91.1**	16.10	$ 88.64	**13.4%**	$148.88
Plot 4	Pacific Gro, SGS MetaGrow biologicals, Ferticell					
	$ 76.75	**86.1**	11.10	$ 19.82	**14.8%**	$61.49
Plot 5	Control: 5 tons/acre poultry litter, applied to all plots and the field					
		75.0	-		**13.5%**	

Adding Pacific Gro and biological inoculants increase yield and return per acre. The highest yield was achieved in Plot 3, though the additional input cost was the least of the 4 treatments.

Value of Organic Wheat: 14.5 cents/lb

Value of Protein Premium: $125/ton for > 13% protein

Pacific Gro Application Rates	
Plot 1	PG Oceanic 7 gal/acre split in 2 soil applications and 1 foliar
Plot 2	PG Sea Phos 6 gal/acre split in 2 soil applications
Plot 3	PG Sea Phos 4 gal/acre and PG Oceanic 2 gal/acre
Plot 4	PG Sea Phos 4 gal/acre and PG Oceanic 4 gal/acre
Plot 5	None