

SUPER PHOS® and SUPER NITRO® Improve Spring Wheat Grain Yield and Quality

Research Report

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Objective

The objectives of this study were: (1) to compare the Micro Carbon Technology®-based phosphorus (P) product Super Phos® (SP) with traditional phosphorus (P) fertilizers ammonium polyphosphate (APP), and diammonium phosphate (DAP); and (2) to compare the Micro Carbon Technology®-based nitrogen (N) product Super Nitro® (SN) with the traditional nitrogen fertilizer, UAN.

Materials and Methods

A field experiment of spring wheat was conducted near Conrad, Mont. The P and N fertilizers were compared for effectiveness on yield, grain test weight, and biomass weight for two different application methods—side-dress and foliar—and two different rate/times as indicated in the following table:

Treatment (Trt)	N Fertilizer				P Fertilizer			
	Source*	Target Rate, lb N/ac	Time	Method	Source	App. Rate, lb P ₂ O ₅ /ac	Time	Method
1	n/a	0	n/a	n/a	n/a	0	n/a	n/a
2	UAN	150	seeding	side-dress	n/a	0	n/a	n/a
3	SN	130	seeding	side-dress	SP	30	seeding	side-dress
	SN	20	tillering	foliar				
4	SN	130	seeding	side-dress	SP	15	tillering	foliar
	SN	20	tillering	foliar				
5	UAN	130	seeding	side-dress	APP	30	seeding	side-dress
	UAN	20	tillering	foliar				
6	UAN	130	seeding	side-dress	APP	15	tillering	foliar
	UAN	20	tillering	foliar				
7	UAN	130	seeding	side-dress	DAP	30	seeding	side-dress
	UAN	20	tillering	foliar				
8	UAN	130	seeding	side-dress	DAP	15	tillering	side-dress
	UAN	20	tillering	foliar				

* SN = Super Nitro®; UAN = UAN-32; SP = Super Phos®; APP = ammonium polyphosphate; DAP = diammonium phosphate

Results

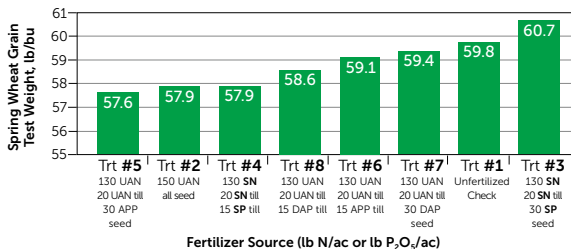


Figure 1. Spring Wheat Grain Test Weight as a Function of P and N Fertilizer Source, Rate, Time, and Placement

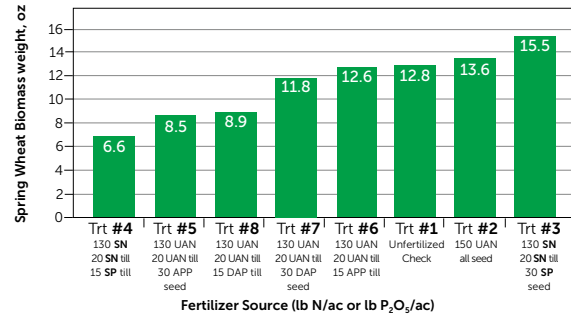


Figure 2. Spring Wheat Biomass Weight as a Function of P and N Fertilizer Source, Rate, Time, and Placement

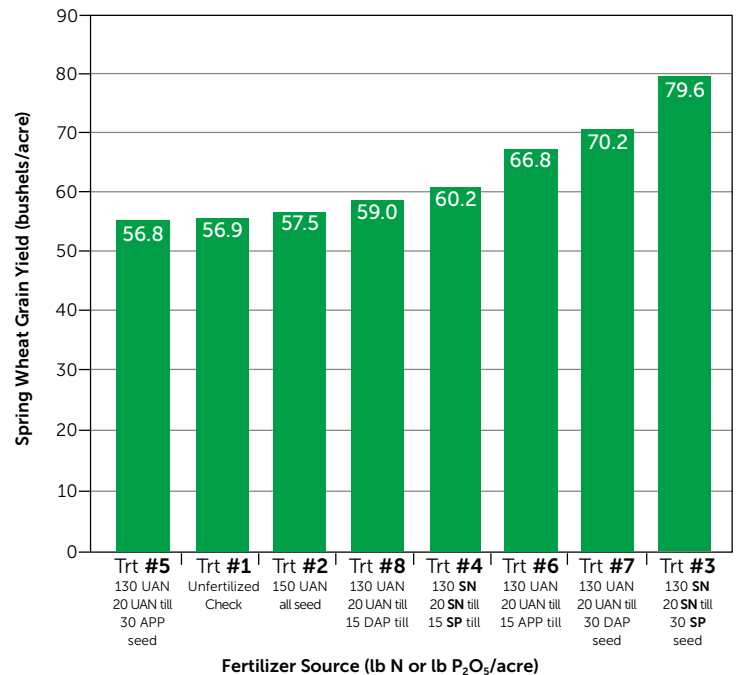


Figure 3. Spring Wheat Grain Yield as a Function of P and N Fertilizer Source, Rate, Time, and Placement

Conclusions

Huma Gro® Super Nitro® followed by 30 lb P₂O₅ per acre of Super Phos® (Treatment #3) contributed to the highest grain test weights, biomass, and yield.

This study also indicates that Super Phos® is less corrosive and less likely to cause damage to the seeds as a dribble and suggests that Super Phos® could be applied with the seed at a higher rate compared with other P sources.