



UNIVERSITY OF WISCONSIN AGRONOMY, SOYBEAN RESEARCH, UNIVERSITY OF WISCONSIN-EXTENSION

**In-Furrow Starter Fertilizer for Winter Wheat - 2017**  
 Shawn Conley, State Soybean and Small Grains Specialist  
 John Gaska, Senior Outreach Specialist  
 Adam Roth, Program Manager

A research trial was initiated in the fall of 2016 at three locations (Arlington, Sharon, and Fond du Lac) to assess the impact of starter fertilizer on early season growth, grain yield, and grain quality of soft red winter wheat. Dry granular starter fertilizer was applied in-furrow with the seed at planting time. Treatments were selected based on common availability of dry starter fertilizers and previous research using similar rates. No early growth, vigor, or phytotoxicity differences were noted in any of the fertilizer treatments compared to the non-treated control. Normal, UWEX (A2809) recommended corrective and nitrogen fertilization practices were used at each location in addition to the individual fertilizer treatments.

Table 1. Materials, methods, and location information.

<b>Year:</b>	<b>2016-2017</b>	
<b>Expt. No.</b>	<b>17093-94-95</b>	
<b>Title:</b>	<b>Effect of Starter Fertilizer on Winter Wheat Yield</b>	
<b>Personnel:</b>	<b>Dr. Shawn Conley, John Gaska, and Adam Roth</b>	
<b>Organization:</b>	<b>University of Wisconsin-Madison, Dept. of Agronomy</b>	
<b>FIELD INFORMATION</b>		
Arlington	Nitrogen:	55 lb N/a
	Herbicide:	Husky 15 fl oz/a
	Planted:	4-Oct-16
	Harvested:	18-Jul-17
	Soil fertility:	pH: 6.9 O.M.: 3.7 % P: 42 ppm K: 112 ppm
	Previous crop:	soybean
Fond du Lac	Nitrogen:	55 lb N/a
	Herbicide:	Husky 15 fl oz/a
	Planted:	10-Oct-16
	Harvested:	25-Jul-17
	Soil fertility:	pH: 6.7 O.M.: 2.5 % P: 17 ppm K: 69 ppm
	Previous crop:	soybean
Sharon	Nitrogen:	55 lb N/a
	Herbicide:	Husky 15 fl oz/a
	Planted:	5-Oct-16
	Harvested:	18-Jul-17
	Soil fertility:	pH: 6.4 O.M.: 3.5 % P: 33 ppm K: 154 ppm
	Previous crop:	soybean
<b>EXPERIMENTAL PROCEDURE</b>		
Exp. design:	RCB	
Replicates:	4	
Variables:	6 starter fertilizer treatments	
Locations:	3	
Tillage:	No-till at all locations	
Seeding rate:	1.5 million seeds/acre	
Plot size:	Planted:	8' x 25'
	Harvested:	5' x 21'
Row spacing:	7.5"	
Cultivar:	Pioneer 25R40	

Table 2. Grain yield and test weight of various starter fertilizer treatments.

Starter fertilizer	Analysis				Actual			Grain yield	Test weight
	N	P	K	Rate	N	P	K		
	%			lbs/a	lbs/a			bu/ac	lbs/bu
<b>NTC</b>				0				103.8	56.4
<b>Starter-L</b>	9	23	30	50	5	12	15	99.6	56.2
<b>Starter-H</b>	9	23	30	100	9	23	30	99.6	56.5
<b>DAP-L</b>	18	46	0	50	9	23	0	104.0	56.4
<b>DAP-H</b>	18	46	0	100	18	46	0	101.9	56.7
<b>Potash</b>	0	0	62	50	0	0	31	102.2	56.3
Means								101.9	56.4

**Probability (Pr>F)**

Starter treatment	0.8416	0.0186
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**Results**

No differences in yield were seen in any of the in-furrow fertilizer treatments compared to the non-treated control. Moreover, no deleterious effects of the fertilizer were seen in early season growth and development of the wheat. No firm conclusions can be made based on one year of data. This study will be repeated in 2018.