

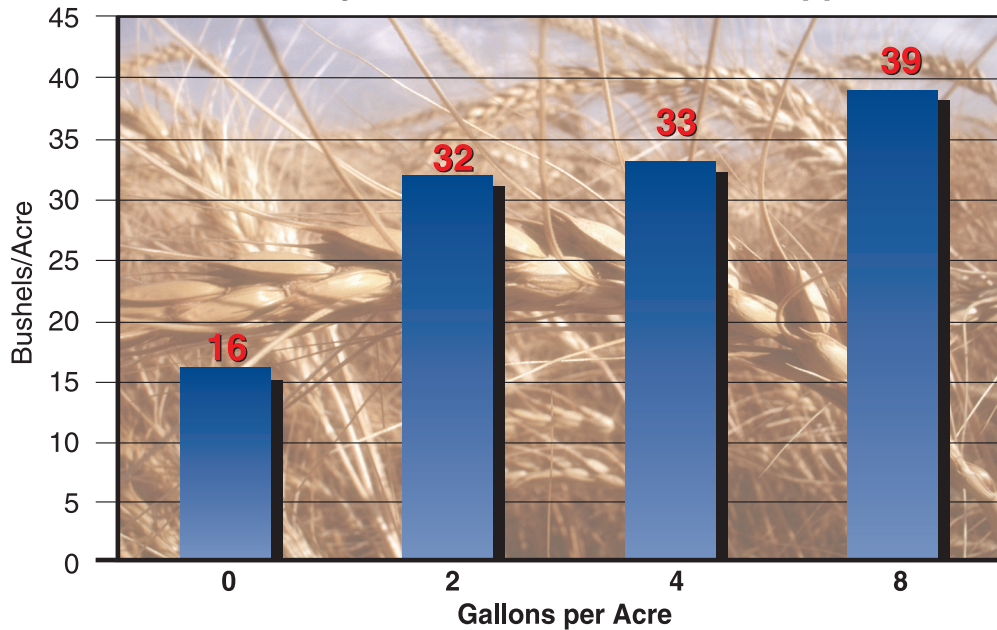
# PureGrade Liquid Plant Food

## Seed-Placed 9-18-9 Applied to Wheat Increases Yields<sup>1</sup>

Wheat responds to row-applied phosphorus more than any other commodity crop grown in the Midwest and Great Plains States. On a very low phosphorus testing soil (4 parts per million), row applied P doubled yield with only 2 gallons/acre of 9-18-9<sup>2</sup>. Yield continued upward as more P was applied, as shown in Chart 1, below.

Figure 1 shows the averages of 3 years of data collected in west central Kansas. Yields were lower than normal due to abnormally dry conditions. Adding row-placed 9-18-9 was very effective for increasing yields. Phosphorus helps wheat build a more extensive root system in the fall soon after wheat emerges. This helps wheat withstand dry periods better and results in higher yields, especially in soils that test low in phosphorus.

**FIGURE 1. Wheat yield increases due to row applied 9-18-9**



Nutra-Flo offers several high phosphorus analyses for row application to wheat and certain other crops. Two of the most commonly applied on wheat are 6-24-6 and 7-29-5. Table 1 shows how many gallons of 3 popular GoldStart analyses are needed to provide the desired amount of row-applied P.

Placing phosphorus with the seed is the most effective P placement available for wheat. Placing P close to the developing roots for quick uptake results in a more vigorous root system that better withstands the rigors of dry soil conditions and low winter temperatures. Proper phosphorus management that includes seed-placed P, helps reduce winterkill and encourages more tillers per plant for higher yield.

**TABLE 1.** Number of gallons needed to apply desired amount of P<sub>2</sub>O<sub>5</sub> per acre.

P <sub>2</sub> O <sub>5</sub> lbs/acre	GoldStart Analysis		
	9-18-9	6-24-6	7-29-5
4	2	1.50	1.25
8	4	3.00	2.50
12	6	4.50	3.75
16	8	6.00	5.00
20 <sup>a</sup>	10	7.5	6.25

<sup>a</sup>For wheat planted much later than the optimum time, university recommendations<sup>3</sup> call for up to 20 pounds of P<sub>2</sub>O<sub>5</sub> per acre to be applied in the seed furrow to increase yield.

<sup>1</sup>Kansas State University, Ft. Hays research station.

<sup>2</sup>The 9-18-9 used in this study was a low-salt, neutral pH, non-corrosive, starter fertilizer comparable to Nutra-Flo's GoldStart fertilizer products.

<sup>3</sup>University of Nebraska row placed phosphorus recommendations for wheat.