



# ARKANSAS WHEAT



**Jason Kelley - Wheat and Feed Grains Extension Agronomist**

October 8, 2014

October is finally here and many producers are finish or making headway on harvesting, soybean, rice, corn, grain sorghum, and cotton. The month of September was dry for most areas of the state, but recent rains over the last week have improved soil moisture conditions and weather forecasts are indicating more rain is on the way for later this week. With adequate soil moisture and wrapping up summer crop harvest, many producers will be focusing on wheat in the coming weeks. As with most of our crops, prices have fallen dramatically compared to previous years and many are wondering how they will be able to turn a profit in 2015. Wheat producers are facing the same dilemma this year on how to maximize yields and still minimize input costs. The obvious answer to that dilemma is to make as high of yields as possible with the same inputs. In 2014, Arkansas set a statewide average yield record of 63 bu/acre. Many producers in portions of Arkansas were reporting the highest yields they ever harvested. With proper management and a little help from Mother Nature, high yields and profitable wheat can still be achieved in 2015.

There are numerous factors that impact yield, but below are some easy ways to maximize wheat yields and still keep input costs at a minimum.

## **Avoid Ryegrass Infested Fields**

Ryegrass is and continues to be our number one weed in wheat. Unfortunately many fields that are being planted to wheat have ryegrass problems. Continuous wheat, as is often the case in some dryland fields, generally has more ryegrass problems than fields that have been rotated to summer crops. Selecting fields to plant wheat in that do not have ryegrass problems would save a considerable amount of money on herbicides. In many instances, the ryegrass we are dealing with is resistant to many of our postemergence herbicides. In this case, Axiom or Zidua containing products become the first option for control. Both of these herbicides and Prowl H20 have restrictions on seeding depth to reduce wheat injury. To me, broadcast seeding of wheat should not be considered where ryegrass is an issue to allow greater flexibility of herbicides that can used. Get the wheat off to a good start!

## **Proper Pre-Plant Fertilizer, Planting Date, and Soil pH**

I have gotten several calls this week asking about how much fall nitrogen I should apply to my wheat. Our current recommendations only require fall nitrogen if planting wheat following rice or if the wheat is planted later than the optimum planting date. Optimum planting dates for Arkansas are:

<b>Region</b>	<b>Planting Date</b>
North Arkansas	October 1-November 1
Central Arkansas	October 10-November 10
South Arkansas	October 15-November 20

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We no longer specifically recommend fall nitrogen when following corn or grain sorghum. If soil analysis shows a need for phosphorus and DAP (18-46-0) is used, the nitrogen with that application would be sufficient for any fall needs. Having adequate levels of phosphorus is critical for adequate tillering and maximizing yield potential. As mentioned earlier, many of our wheat acres are being planted on dryland fields. One of the problems we have seen in the past on some of these fields is low soil pH. Planting wheat on a low pH soil (generally 5.5 or lower) is a yield limiting factor and profitability killer. We still have time to get a benefit for this wheat crop if lime is applied prior to planting.

## **Variety Selection**

There are numerous varieties on the market that will yield well across Arkansas. Selecting more than one variety is important to diversity to spread risks out. Stripe rust is generally our most worrisome foliar disease. In years with heavy stripe rust pressure, susceptible varieties may need to be sprayed twice with a foliar fungicide to maintain yield. Selecting varieties that have exhibited stripe rust resistance in past years should be considered over susceptible varieties. Yield loss from stripe rust plus foliar fungicide and application expense likely will reduce overall profitability.

The 2014 Wheat Update publication is a summary of the Arkansas Wheat Variety Testing Program, and contains current variety disease ratings, agronomic data including test weight, lodging, and relative maturity, and multi-year yield data. The 2014 Wheat Update can be found at the following link:

<http://www.uaex.edu/farm-ranch/crops-commercial-horticulture/wheat/>

The full report of the 2014 Arkansas Wheat Variety Testing program can be found at:

<http://arkansasvarietytesting.com/home/wheat/>

## **Seeding Rates**

One of the easiest ways and maybe an overlooked way to reduce input cost is to plant only the amount of seed you need. (Discussed in the previous newsletter, but worth repeating!)

Seeding rates can vary considerably, depending on planting date, quality of the seedbed, and whether wheat is drilled or broadcast seeded. Using a grain drill allows for more precise seed placement and generally allows for a lower seeding rate. Broadcasting wheat allows you to cover many acres quickly. I prefer to drill wheat, but concede that weather sometimes pushes us to get things done quickly to beat an incoming rain.

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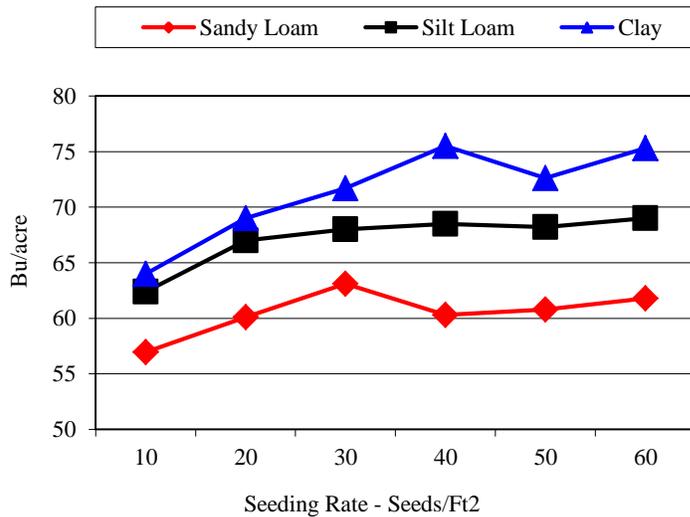
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Recommended seeding rates for drilled wheat planted within recommended planting dates is 26 seeds per square. The pounds per acre of seed planted to achieve 26 seeds per square foot can vary considerably with seed size, (**See Tables 1 and 2**) but with a normal seed size, this would be approximately 90 pounds of seed/acre (assuming you had good quality seed). **Figure 1** below shows a summary of 12 trials conducted in Arkansas over the last few years evaluating seeding rate response of drilled wheat when planted in October. Planting more than 26 seeds per square on sands or silt loams did not increase or decrease yields, while on clay soils, a slightly higher seeding rate was needed to achieve maximum yield. A higher seeding rate on the clay soil was likely needed to compensate for a rougher seedbed and/or potentially a lack of tillering.

**Figure 1.** Impact of Seeding Rate of Drilled Wheat on Yield in Arkansas in 12 Trials



Increasing seeding rates above recommended rates will increase the cost of production and increases the potential for lodging prior to harvest, especially if nitrogen rates are high.

**Table 1** below shows the number of seeds per foot of drill row to accomplish a desired seeding rate. For example, a seeding rate of 30 seeds per square foot using a grain drill with 7.5 inch row spacing would, you would need 19 seeds per foot of drill row to achieve 30 seeds per square foot.

<b>Table.1 Number of wheat seeds to plant per square foot or per drill row foot</b>				
Grain Drill Row Width	Seeds per Square Foot			
	25	30	35	40
	-----Seeds per Drill Row Foot Needed-----			
6 inches	13	15	18	20
7.5 inches	16	19	22	25
8 inches	17	20	23	27
10 inches	21	25	29	33

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**Table 2** below illustrates how seed size greatly impacts the pounds of seed planted. In the example of planting 30 seeds per square foot with a large seed of 10,000 seeds per pound, we would need 131 pounds of seed per acre to accomplish 30 seeds per square foot. If we had a small seeded variety with 18,000 seeds per pound, we would only need 73 pounds of seed per acre, a 58 pound difference in seeding rate. Considering seed size can help prevent you from planting too many or too few seeds to maximize yields and profits.

<b>Table 2. Number of pounds of wheat seed planted depending on seed size and seeding rate</b>				
Seeds/lb	Seeds per Square Foot			
	25	30	35	40
	-----Pounds of Seed/Acre-----			
10,000 (large seed)	109	131	152	174
12,000	91	109	127	145
14,000 (an average seed size)	78	93	109	124
16,000	68	82	95	109
18,000	61	73	85	97
20,000 (small seed)	54	65	76	87

If we are planting later in the planting window (November), planting into a rough seedbed, or planting no-till, increasing seeding rates 10-20% or more would be justified. Broadcast seeding generally takes higher rates of seed to obtain stands, since the seed is placed at varying depths with incorporation (some too deep, some on top of the soil). Having a good firm seedbed prior to spreading seed is important. Many producers are having good results broadcasting seed and then shallowly incorporating using a harrow, roller, or field cultivator with rolling baskets. Using a disk to incorporate often buries much of the seed too deep and can result in poor stands. How the seed is incorporated makes all the difference on how successful broadcast planting is.

Previous Arkansas Wheat Newsletters from this year can be found at:

<http://www.uaex.edu/farm-ranch/crops-commercial-horticulture/wheat/>

Timely information on wheat and other crops can also be found at: <http://arkansascrops.com/>

**Contact Information:**

Please contact me by email at [jkelly@uaex.edu](mailto:jkelly@uaex.edu) if you have questions or comments regarding this newsletter.

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