

SEEDING RATES

Optimum seeding rates for wheat can vary widely due to differences in seed quality, genetics, planting conditions or planting dates, and planting methods (drill or broadcast). Seeding based on seeds per acre is much more accurate than seeding based on weight per acre. Multiple seeding rates studies have been conducted throughout the southeastern U.S. and most show that seeding 1.2 million to 1.5 million seeds per acre is optimum. This is equal to seeding about 30 - 35 seeds per square foot. However, to reach this rate will require knowledge of seed size (aka-number of seeds per pound).

In a normal year, wheat cultivars vary between 10,000 and 18,000 seeds per pound. This difference can impact the actual seeding rate if a grower seeds wheat in bushels per acre. For example, in Table 8 seeds per pound of variety 4 and variety 6 vary by 35%. If a grower planted in bushels per acre, he would plant 35% more seed of variety 6 than variety 4, potentially over-planting or under-planting one of the cultivars. For that reason, it is important to focus attention on purchasing the amount of wheat for seeding not by bushels but ultimately that needed to give you the 30 to 35 seeds per square feet.

Table 8. Example of seeds per pound of wheat grown in one year in Georgia.

Variety	Seed/pound
1	9,610
2	11,340
3	14,823
4	12,064
5	11,172
6	16,316
7	12,741
8	14,538
9	15,534
Average # seeds per pound	13,126

Information in table 9 provides appropriate seeds per row foot for various row widths. When planting on 7.5 inch row widths each linear foot of row should contain 20-25 seeds depending on germination. This should give you enough seed to achieve the right amount of live plants per acre for high yield. If planting date is delayed, seeding rates should be increased by 15-20%.

The use of certified seed will help insure you are planting seed with a minimum germination of 85% and free of noxious weeds. Bin run seed is not recommended however, if you choose to use bin run seed, it is important that it is tested for germination. Thorough seed cleaning will often increase the germination of a seed lot because it eliminates some non-viable seed.

Table 9. Seeds per row foot needed to achieve certain seeds per square foot at different seeding widths.

Row widths in.	Seeds /sq. ft.			
	30	35	40	45
6	15	18	20	23
7	18	20	23	26
7.5	19	22	25	28
8	20	23	27	30
10	25	29	33	38

Information in table 10, illustrates the differences in pounds per acre between two lots of seed planted at various row widths and seeds per row foot. If you had a variety that had approximately 12,000 seeds per pound and you planted in 7.5 inch row width and wanted to plant 22 seeds per row foot, then you would need to purchase 127.7 lbs of seed per acre. If the seed were small and the variety had 15,000 seed per pound, then the amount of lbs needed to purchase would only be 102.2 lbs per acre.

Yield potential is maintained when wheat is planted as accurately as possible. Therefore calibrate grain drills each time you change cultivar or seed lots so as to achieve the desired number of plants per acre.

Table 10. Pounds of seed per acre as determined by row width, seeding rate and seeds per pound.

Seed/row ft.	Row width					
	6"		7.5"		10"	
	12,000	15,000	12,000	15,000	12,000	15,000
18	130.7	104.5	104.5	83.6	78.4	62.7
22	159.7	127.8	127.7	102.2	95.8	76.7
26	188.8	151.0	151.0	120.8	113.3	90.6
30	217.8	174.2	174.2	139.4	130.7	104.5

Straw Utilization

Straw utilization has become increasingly important in the economic value of wheat production. There are many uses of wheat straw such as; residue for conservation tillage, landscaping, residue to reduce soil erosion during road or building construction, mushroom production, horse bedding, hay feeding and others.

Varieties vary in their ability to produce straw from year to year. Table 11 is provided to demonstrate differences found in varieties. It appears the difference in dry matter production between varieties that are over 36" tall versus those less than 36" on average is about 30 lbs/A. Therefore, height is a good indicator of total dry matter production. If the straw is removed from the field, remember to apply the same amount of nutrients to the subsequent crop that are removed by the straw.

Table 11. Example of Straw Yield of Different Soft Red Winter Wheat Varieties (lbs/A), Griffin.

Variety	Ht-in	Griffin
1	38	2572
2	36	3149
3	38	2021
4	37	2777
5	40	2666
6	36	2173
7	34	2352
8	34	2235
9	33	2478