

IPM NEWSLETTER

Update for Field Crops and Their Pests

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Special Wheat Edition

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Wheat Crop Update (Chris Main, Extension Cotton and Small Grains Specialist)

As we head into fall and harvest is wrapping up it is time to start planting wheat. A few basics of wheat production we should review are outlined below to help us get off to a good start with this year's wheat crop:

Planting date (October 15 to November 15): Historically wheat planting date coincided with the date in which we are free from Hessian fly. In Tennessee, the Hessian fly free date is October 15 for most locations. Hessian fly lays eggs on wheat and larval feeding damages the stem and reduces plant vigor resulting in weak, stunted plants, which may die during winter. The best way to prevent Hessian fly damage is by observing planting date recommendations. Straw destruction and wheat resistance help control this pest, but once an infestation develops, there is no rescue treatment.

Planting should allow enough time for seedlings to become well rooted and have 3 to 4 inches of shoot growth and tiller initiation prior to the onset of winter.

Some research suggests that delaying planting till later in the recommended window can help reduce the chance of having an infestation barley yellow dwarf virus. Last year was a good example of later planted wheat producing since it survived the Easter freeze. Most wheat planted before mid-October was a complete loss.

Fertility: Fertilizer and lime needs should be applied according to soil test recommendations. Typically wheat will require 15 to 30 pounds of nitrogen, 40 to 80 pounds of P₂O₅ (phosphorous), and 20 to 40 pounds of K₂O (potash) per acre at planting. Wheat should be top dressed with 30 to 60 pounds of nitrogen per acre from February 15 to March 15. Some producers ask questions about using a split top-dress nitrogen application. This is only advisable if the wheat was planted later in the recommended window and does not have adequate tillers (2-4) by mid-December. Another popular question is regarding whether the UT recommended nitrogen rate is adequate to produce high yields. In 5 years of tests conducted at Jackson during the late 1990's wheat responded most consistently to 90-120 pounds of total nitrogen. While in some years 120 pounds yielded higher, 90 pounds was statistically similar most of the time. Rates up to 150 pounds tended to produce lodging and never yielded better than 120 pounds. Remember from last year that delaying topdress application until March helped acres survive the Easter freeze.

Seeding rate and depth: Wheat seed should be drilled $\frac{3}{4}$ to $1\frac{1}{2}$ inches deep into a firm seed bed with adequate moisture to insure uniform emergence. Seeding rates depend on many factors including

condition of the seedbed, time of seeding, method of seeding, quality of seed, and size of seed. Typically wheat grown for grain should be seeded at a rate of 1 to 1.5 bushels per acre. A good target population should be 26 to 30 seed per square foot or about 1.2 million seed per acre. To achieve this stand be refer to the tables below for seed drill calibration and seeding rate.

Drill row width (in)	Length of row needed for 1 ft ²	Seed/row ft to equal 26 seed/1ft ²	Seed/row ft to equal 30 seed/1ft ²
6	24.0	13	15
7	20.6	15	17
8	18	17	20
10	14.4	22	25

Seed size	Seeding rate (pounds/acre) % germination and expected survival		
	90%	80%	70%
Small	65	75	85
Medium	75	85	95
Large	95	105	120

Weed Management (Larry Steckel, Weed Specialist)

Volunteer Roundup Ready Corn Management. There have been many calls over the last week on how to manage volunteer Roundup Ready corn in fields to be planted to wheat. This used to not be a major issue but in 2007 over half the corn acres in the state were planted to a Roundup Ready hybrid. Tillage is one obvious answer and a number of folks look to be going that route. This however, is probably not a good option on many of our rolling fields due to erosion concerns. Moreover, we can get subsequent flushes of volunteer corn after tillage.

The two herbicidal options would be Select Max and Gramoxone Inteon. The use rate of Select Max we have successfully used on volunteer corn at 1 to 2 leaf is 4 oz/A. I know of some producers that have applied Select Max over the last 10 days. The labeled recrop back to wheat after a Select Max application is 30 days. Therefore this is still an option for many folks who will not get their wheat planted until mid-October or later. Volunteer corn is typically not the only weed that is in these fields and glyphosate can be tank mixed with Select Max without antagonism concerns.

Closer to wheat planting time, Gramoxone Inteon is the only other option. In our research conducted this past spring where we were trying to control an old partial stand of Roundup Ready corn we needed 40 oz/A in



2 Leaf Volunteer Roundup Ready Corn



Typical Volunteer Corn Stand This Fall

order to get 80% corn control. Gramoxone Inteon at 48 oz/A provided more consistent control than 40 oz/A and may be better on some of these fields that have heavy volunteer corn stands.

After the wheat is up we have few good options. Neither Hoelon nor Axial will control corn. Osprey will provide some suppression and may be sufficient in fields without intense volunteer corn pressure. The bottom line is if the volunteer corn is not controlled by the time the wheat is up a killing freeze will be needed to take out the corn. On average the first killing freeze occurs in early to mid-October. If we get our first killing freeze late, like in 2003 which did not occur until mid-November, we could find establishing good wheat stands very difficult. Therefore it is critical to start the wheat crop off clean of all weeds, particularly volunteer corn.

Bluegrass Control in Wheat. Last year bluegrass was a very common problem in our wheat crop. In a number of cases it was so thick that it had the potential to smother out establishing wheat stands. By the time we got calls from producers about herbicides that would control bluegrass it was late-winter and no herbicide options were available. If a field has a history of bluegrass pressure the best option is metribuzin (Sencor) applied early post emergence at 2 oz/A. As many of you are aware there are wheat varieties that Sencor can injure. Some of these are listed on the herbicide label. Unfortunately, this list is very dated. Many of the varieties mentioned on the label have not been planted in 10 years. As a result last year we took a hand boom and sprayed a very high rate of Sencor in a 10 foot band across 4 of the county wheat variety tests. The good news is we saw no injury to the varieties in these tests which would suggest that most of the commonly planted wheat varieties in Tennessee have good tolerance to Sencor. However, this year with wheat in short supply some varieties brought in to fill the demand may be sensitive to Sencor. Check with your wheat seed supplier to make sure before using Sencor.

Insect Concerns (Scott Stewart, IPM Specialist).

Aphids. Aphid populations rarely reach levels that directly cause much or any yield loss in wheat. But control of aphids can prevent the fall transmission of barley yellow dwarf viruses. Several species of aphids are involved with vectoring this disease including the bird-cherry-oat aphid and rice root aphid. Corn leaf aphids and greenbug are other aphids that might be present. The bird cherry-oat aphid (pictured right) is usually the most common species present. No treatment thresholds have been established for this species. However, the insecticide seed treatments (Gaucho and Cruiser) are effective at controlling aphids and preventing at least some disease transmission. Using these seed treatments is often cost effective in early planted wheat (wheat planted before October 15 or before the first frost). Foliar applications of insecticide are also effective but must be applied before aphid populations are well established to prevent disease transmission. Insecticide choices include synthetic pyrethroids (Baythroid XL, Karate, Mustang Max, Prolex), dimethoate, Lannate LV and methyl parathion.



Treating for aphids in the spring is generally not justified unless populations are unusually heavy. Spring transmission of barley yellow dwarf has little impact on yield, and applications against these established populations are too late to prevent disease transmission anyway. One exception is the greenbug (pictured left). This aphid injects a toxin while feeding, and fewer aphids can cause more damage than other species of aphids. We had fair numbers of greenbug present

in some fields this past spring. The suggested treatment threshold for greenbug is when they are killing three or more leaves per plant. Some alternative thresholds used by some states are below.

Greenbug treatment thresholds:

- For wheat less than 6 inches tall, treat if greenbugs number 50 or more per linear foot.
- For wheat 6 - 10 inches tall, treat if greenbugs number 200 or more per linear foot.
- For wheat 18 - 20 inches tall, treat if greenbugs number 300 or more per linear foot.
- Or consider treatment anytime symptoms of injury are occurring and greenbugs are present. Symptoms may include leaves that are yellowing and dying with no other obvious cause (wet spots, fertility problems and other agronomic factors can also cause yellowing of leaves).

Armyworms. There are two armyworm species that may potentially affect wheat. Both species are primarily defoliators. Fall armyworm sometimes attack seedling wheat in the fall. Heavy infestations can destroy stands. Early planted wheat is most likely to be infested, and I get the most calls about wildlife food plots. True armyworm is the species which occurs in late spring and should be scouted for weekly once plants begin to produce heads. Larvae sometimes move up plants and cut the stems of wheat heads as plants begin to mature. Recent data from the University of Arkansas suggests that treatment for this pest is unnecessary unless larvae are clipping the heads off of plants. However, UT still recommends treatment for either armyworm species if 4 or more larvae are present per square foot. Recommended insecticides include Baythroid XL (1.8-2.4 oz/a), Karate (1.28-1.92 oz/a), Mustang Max (3.2-4 oz/a), Prolex (1.02-1.54 oz/a), Tracer (1.5-3.0 oz/a), Lannate LV (12-24 oz/a), Sevin (32 oz/a) and methyl parathion (24 oz/a). *True armyworm photo courtesy of Univ. of Georgia*



Hessian Fly, *Mayetiola destructor* (Say). Dr. Main already made some comments about this pest, and yes, you can find this critter in Tennessee if you look hard enough. However, it has been many years since an economically damaging infestation of Hessian fly has been found. In part, some varieties have resistance to Hessian fly (depending upon the strain of flies present). Planting after October 15 will greatly reduce the likelihood of infestation. October 20th is the approximate “fly-free date” for our state. After this, most adult Hessian flies die before the crop emerges and therefore cannot lay eggs, and it is the fall generation that is potentially the most destructive. Insecticides are normally not recommended because timing an application is difficult. You can read more about this pest at <http://extension.missouri.edu/explore/agguides/pests/g07180.htm>.

Farm Management Update (Chuck Danehower, Area Specialist – Farm Management)

The price for wheat has increased 75% since the first of the year and reached an all time high earlier in the month. Although the wheat market has backed off some, it is still at a historically high level. World supplies for wheat are currently tight causing this all time high price. Typically, this historically high price will encourage overproduction as producers worldwide try to capture record prices. If these historically high prices encourage wheat acreage expansion, the supply/demand picture will be dramatically changed by the 2008 harvest (and with it, crop prices).

As noted in IPM Newsletter #26, wheat double cropped with soybeans has the potential to be the acreage with the highest return for 2008. This is particularly true on ground that is cash rented or owned. On share rented ground at average yields, corn returns the best followed by wheat/soybeans,

then single crop soybeans and cotton. I would note that with current price levels, we are really looking at just a few bushels difference with the wheat, soybeans, and corn crops. It could almost be considered a toss up between those crops. Of course, it is important to run your own numbers with your yield, costs, and rental situation.

Producers that have decided to plant wheat should consider forward pricing at current levels. If you are concerned about over booking your crop, as what may have happened in 2007, then explore Multi Peril Crop Insurance (MPCI). However, the deadline for signing up the 2008 wheat crop is **September 30** in Tennessee. When prices are historically high early in the year, a Revenue Insurance Plan such as Crop Revenue Coverage (CRC) may provide adequate protection and allow an aggressive forward pricing program. There are other Revenue Insurance Plans, check with your crop insurance agent for what is available for your level of risk tolerance. For wheat, unless you previously had insurance, you need to sign up before the closing date of September 30. If we can assist you on crop decisions, please contact your local Extension office.

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