WHEAT RESEARCH UPDATE FROM UK SPECIALISTS

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***Articles in this Issue*:**

WHEAT SEEDING RATES

Jim Herbek - Extension Grain Crops Specialist

Wheat seeding rates are an important aspect of wheat planting management. Optimum stand establishment is needed to achieve full yield potential. Establishing a plant density of 1.1 to 1.3 million plants/acre should achieve optimum yields in most situations.

What is considered an optimum seeding rate? This is heavily influenced by the terms of measurement we use in seeding the wheat. If we use seeding rates that are expressed in terms of volume or weight (bushels or pounds) per acre, necessary seeding rates can vary from 1 1/4 bu/acre (75 lbs) to over 2 ½ bu/acre (150 lbs) to achieve the same wheat stand. Why? Because wheat seed size varies dramatically among varieties and can range from 10,000 seeds/lb or less (large seed) to 20,000 seeds/lb (small seed). Not only will seed size differ among varieties, but it can also differ within the same variety because seed size can be influenced by the production environment in which the variety was grown. Unless we know the seed
size of the variety being planted, it is difficult to

determine the precise seeding rate in pounds or bushels needed to achieve an adequate stand.

But it does not end there. Even if we know the seed size (from this we can then calculate the pounds or bushels needed), the seed size and shape can affect how well the seed is delivered in each drill. Additionally, drills may have worn parts that affect seed delivery and you will also find that seeding rate charts on drills are not precisely accurate. So what is the end result? We are not quite sure how many seeds we are planting on an area basis when we seed on a volume (pounds or bushel) per acre basis. We hope that when the wheat emerges we guessed right and that a sufficient stand was achieved. If we guessed wrong, it could cost us in yield potential. We will have to live with the stand achieved since the alternatives are not the best. If we replant, there are additional seed, time, labor and equipment costs and usually a yield penalty due to the later replanting date.

We cannot underestimate the importance of wheat seed size, particularly if we are seeding on a volume basis (lbs or bu/acre) and if we do not calibrate our drill. Consider, as an example, if we are seeding two varieties that differ greatly in seed

size and we utilize the same volume seeding rate for both varieties of 110 lbs/acre. Variety A is a large seeded variety with a seed size of 10,000 seeds/lb and variety B is a small seeded variety with a seed size of 18,000 seeds/lb. Variety A (large seeded), at a seeding rate of 110 lbs/acre, would fall 42 lbs/acre short of the calculated seeding rate of 152 lbs/acre that would be needed. This would have resulted in a seeding rate of 25

seeds/ft^2 or 1.1 million seeds/acre which would likely achieve a sub-optimal stand (<25 plants/ft^2 or <1 million plants/acre). Full yield potential would not be realized with this stand.

On the other hand, variety B (small seeded), at a seeding rate of 110 lbs/acre, would be 25 lbs/acre more than the calculated seeding rate of 85 lbs/acre that would be necessary. Resulting seeding rates would be 45 seeds/ft^2 or 2 million seeds/acre with wheat stands likely to be greater than needed (>35 plants/ft^2 or > 1.5 million plants/acre). This could result in lodging and greater potential for disease. Likewise, a seed cost savings of $5-9/acre (depending on variety price) could have been achieved if the drill had been properly calibrated for variety B (small seeded). The above example does not take into account the additional variability that is associated with seed size and shape that can affect seed delivery or the accuracy of seeding rate charts on drills. Thus, it is important that we try to achieve a precise, desired seeding rate. It is a basic but important step in a profitable wheat management program.

So how do we achieve a precise seeding rate and reduce the variability associated with seed size differences, seed delivery and drills? We need to calibrate each drill for each variety planted and express seeding rates in terms of number of seeds per unit area (per square foot or linear row foot). If we do this, then irregardless of seed size (variety) and drill used, we will achieve desired (not guessed) seeding rates and come closer to achieving optimum stands. Even though other factors such as planting depth, tillage, soil moisture, pests, etc. can affect the final stand achieved, by calibrating drills and basing seeding rates on number of seeds per unit area, we have eliminated the biggest variable factor (amount of seed delivered) in our goal of achieving an optimum stand.

Your wheat seeding goal is to plant sufficient seed to allow for poor germination, seedbed conditions, and other losses due to winter kill, pests, etc. Our current recommended seeding rate is 35 seeds/ft^2 to achieve a stand objective of at least 25 plants/ft^2. What % plant stand establishment can be expected from seeding rates? This will vary depending on the drill, seedbed preparation, seed quality, soil moisture, etc. In most situations, expecting a 90% plant establishment of the seeding rate is more unlikely than likely. Expecting an 80-85% plant establishment of the seeding rate used is more the norm. Thus, if we seed at 35 seeds/ft^2, a wheat stand of at least 25 plants/ft^2 should be achieved. Can we seed at 30 seeds/ft^2? Yes, but the chances of achieving at least 25 plants/ft^2 are more marginal. For fields in which yields are not expected to be above 40-50 bu/acre, only 30 seeds/ft^2 may be sufficient. For wheat that is no-till seeded, plant stands are usually slightly less than wheat seeded in a tilled field. For this reason, seeding rates for no-till wheat should be increased about 10% (35-40 seeds/ft^2).

Grain drill calibration is necessary to achieve a precise seeding of a given number of seeds/ft^2. A five-step procedure for proper grain drill calibration follows:

Step 1. Based on seeding rates of 30-35 seeds/ft^2, the amount of seed needed per linear length of row (drill-row foot) will vary according to row width and also date of planting. Use the table below as a guide for seeding rates at various row widths when the seed germination test is 90% or higher.

For seed that has less than 90% germination, seeding rates should be increased. Seeding rate adjustments for germination can be calculated by dividing the desired seeding rate (seeds/ft^2 or seeds/row foot) by the % germination. For example, a desired seeding rate of 35 <u>viable</u> seeds/ft^2 with a seed germination of 80% would require a seeding rate of 44 seeds/ft^2 (35 ÷ .80 = 43.75).

Recommended number of wheat seeds to plant per drill-row foot to achieve 30 or 35 seeds per sq. ft.

	Seeds/row foot needed[a]	
Row Width (in.)	30 seeds/sq. ft.	35 seeds/sq. ft
4	10	12
6	15	18
7	17	20
8	20	23
10	25	29

[a]If planting time is delayed, increase seeding rates by two to three seeds/sq ft (one to two seeds/row ft) for every two-week delay beyond the optimum planting date (Oct. 10-30).

Step 2. Calculate the number of seeds required in 50 drill-row feet (A minimum of 50 feet should be used. Greater lengths would be more desirable). For example, with 7-inch wide rows and on-time planting, an appropriate seeding rate would be 20 seeds per row foot multiplied by 50 feet, which equals 1000 seeds planted every 50 feet of row. Count 1000 seeds of the variety and put them in a graduated tube, such as a rain gauge, or other clear tube or cylinder. Mark the level of the 1000 seeds in the tube. Do this for each variety that will be planted.

Step 3. Hook a tractor to the grain drill so that the drive wheels of the drill can be raised off the ground and the drive gears can be engaged. Jack up the drive wheel so it clears the ground and turn the wheel several revolutions to be certain all working parts are turning freely. Check all drill spouts for blockages.

Step 4. Determine the number of revolutions the drive wheel must make to travel 50 feet. Measure the distance around the drive wheel. This distance can be measured directly with a tape measure or calculated by measuring the diameter or distance across the tire and multiplying that distance by a factor of 3.2. For example, if the drive wheel measures 30 inches from tread to tread (diameter), the distance around the tire should measure 96 inches (30" x 3.2). The number of tire revolutions per 50 feet can then be calculated as follows: The inches in 50 feet = 600 inches (50' x 12"). Divide 600 inches by 96 inches (distance around the tire) to get 6.25 revolutions of the tire per 50 feet of travel. Make a mark on the wheel so the number of revolutions can be conveniently determined when the wheel is turned.

Step 5. Calibrate the drill.

a. Put seed (at least a quart) of the variety to be calibrated over at least two drill spouts. (You get better accuracy if you use more than one drill sprout). Turn the wheel to ensure the seed cups are full. Place a container to catch the seed (a plastic bag or small cloth bag is usually adequate) on the bottom of each drill spout to be calibrated.
b. Set the drill on a rate setting expected to be close to that desired, and turn the wheel the number of revolutions needed for 50 feet (as determined in step 4) while catching the seed from each spout in a separate container. Pour the seed caught in the container into the pre-calibrated tube (as determined in step 2), and check the level. Repeat for each of the drill spouts.
c. Change settings as needed, and repeat until you get the appropriate number of seeds (level marked on the tube). Repeat the above steps for each variety.

Option: The above procedure can also be used in the field under actual field conditions by catching seed while the drill is traveling a distance of 50 feet.

USING PELLETIZED LIME

Lloyd Murdock - Extension Soils Specialist

Pelletized lime is an excellent source of high quality lime and is made by granulating finely ground agricultural (ag) lime. The fine lime particles are bonded together with lignosulfonates during the pelletizing process. In general, the pelletized lime contains about 9% lignosulfonates. Some questions have been raised about recommended rates of this material and the speed at which it reacts compared to standard ag lime.

The recommended rates and the effect on soil pH of any agriculture lime product is related to the neutralizing value of the lime, which is a combination of the purity (calcium carbonate equivalent) and the fineness of grind (particle size). The information to calculate the neutralizing value should be on the pelletized lime bag, and the method to calculate the neutralizing value can be

found in publication AGR-106, University of Ky College of Agriculture. The recommended rate of pelletized lime will probably be about 75 to 80% of that for average-quality bulk ag lime. If less than this amount of pelletized lime is used, the expected soil pH change will probably not be obtained.

Contrary to popular belief, the speed of reaction of pelletized lime is no faster than that of bulk ag lime. Since pelletized lime is pelleted from finely ground lime, it is easy to assume that it will be faster reacting than bulk spread ag lime which has some larger, non-reactive particles as a part of its composition. Based on research, it appears that the pelletized lime reacts no faster to raise the soil pH than good quality ag lime applied at recommended rates. The slower than expected reaction of pelletized lime is probably due to 1) the lignosulfonate binding and 2) the distribution pattern. Thus, when comparing the two materials, less pelletized lime is needed to raise the soil pH to the desired level, but the increase in pH is no faster than with ag lime if both are applied on the basis of their neutralizing values. A more complete discussion can be found in UK publication Soil Science News and Views, Vol. 18 No. 9, 1997.

ON-FARM NO-TILL STUDIES

Larry Grabau, John Grove, and Colleen Steele
Research Agronomists

The Kentucky Small Grain Growers Association (KySGGA) has launched a major effort to significantly increase the percentage of the state's wheat managed using no-till strategies. As part of that effort, we conducted eight on-farm trials in 1996-97. It was our goal to find out what combinations of management practices would be make no-till wheat production successful.

Table 1 shows some of our results. Percent residue cover after planting was estimated using overhead slide shots. The slide shots were projected onto a grid, and the number of boxes on the grid with over 50% residue coverage were counted. Combining was handled by the growers themselves, and yields were determined through the use of weigh wagons.

Overall, conventional tillage resulted in a 7 bushel/A yield advantage over no-till. However, two cooperators (Rogers and Franks) had no-till yields within 2 bushel/A of their conventional tillage yields. Residue coverage varied somewhat among no-till sites, but was much more variable in the conventionally tilled treatments. The strongest contrast was between the conventional tillage on the Rogers and Hunt tests.

Table 1. Corn Residue Cover After Planting and Yields of 6 Completed On-Farm No-Till Tests from 1996-97.

County	Cooperator	No-Till	Conv. Till	No-Till	Conv. Till
		--%-- From Slides-		---bushels/A---	
Shelby	Mike Ellis	89	20	58	68
Hardin	Steve Rogers	98	71	61	63
Henderson	Hugh Johns	63	64	54	62
Christian	Steve Hunt	62	2	62	71
Todd	Allen & Tim Franks	84	27	70	72
Logan	Earl Wright	89	56	46	55
Avgs.		81	40	58	65

What management practices worked the best? Highest no-till yields were recorded on the Franks' farm. They did the best job of initial stand establishment under no-till conditions. Clearly, that is a major hurdle. Even with the new drills on the market, no-till stand establishment is still an important question. Looking over the results as a whole, we also felt that N management is a key factor for successful no-till wheat. Nitrogen amounts will have to be increased somewhat, and the spring splits may have to be handled differently. In addition, variety selection appears to be important. Good no-till wheat varieties should have a high capacity for tillering and strong winter hardiness. Other studies in 1997-98 will be looking at factors like flail versus bushhog chopping, and the selection of corn hybrids best suited to wheat production.

No-till wheat could save growers a good deal of topsoil, fuel, labor, and tillage equipment expense. No-till may cost growers more in additional seed at planting, higher N rates, and perhaps more expenses for weed, insect, and disease control. The University of Kentucky and

KySGGA, along with the Opti-Crop and Wheat Tech wheat consulting firms, will be looking at the balance between these savings and costs in further studies during 1997-98.

WHEAT MARKET UPDATE

Steve Riggins - Ag Economist

It may seem early to be thinking about pricing 1998 crop wheat since many farmers are just starting to think about seeding next year's crop. However, July 1998 Chicago Board of Trade wheat futures prices have been testing the near $4.00 per bushel area over the course of the past few weeks. Compared to wheat prices over much of the past 20 years this is a strong price level.

The USDA's August crop report places the 1997 harvest at 2.531 billion bushels. This is the second largest crop of the decade, exceeded only by the 1990 crop of 2.71 billion bushels. This large crop combined with nearly a 100 million bushels of imports from Canada and carryover supplies from prior harvest, provides a total supply for the 1997-98 marketing year of more than 3 billion bushels.

Unfortunately, demand for the current year is not forecast to increase as much as supply and ending stocks are projected to increase from a fairly modest 444 million bushels at the end of the 1996-97 season to nearly 700 million bushels by next May 31.

World wheat production for 1997-98 at 596 million metric tons, (mmt) is forecast to be record large, exceeding the old record of 588 mmt produced during the 1990-91 marketing year. The hope for stronger U.S. wheat prices hinges on the export market. Many of the major wheat exporting countries, Canada, Australia and Argentina are forecast to have smaller crops than last season. However, many of the major wheat importing nations are forecast to have better harvest than one year ago and therefore less need for imports.

Kentucky farmers should monitor weekly U.S. wheat export numbers and production conditions of next year's wheat crop. With more land expected to come into wheat production from expiring CRP contracts, it is likely that production will be quite large in the U.S. next summer. Therefore, farmers need to be thinking now about their marketing plan for the 1998 crop.

EARLY SEASON CONSIDERATIONS FOR INSECT CONTROL IN WHEAT

Doug Johnson - Extension Entomologist

It is time again to begin thinking about insect control in our wheat crop. In many cases you have probably already given consideration to such items as variety selection, seeding rates and tillage. Certainly pest control should also have your attention as decisions made before planting will have an effect on insect populations for the entire wheat growing season.

Without doubt one of the most important decisions you will make is that of planting date. This choice will shape all of the pest decisions you will have in the fall and may even impact your spring season. Do not treat it lightly. Planting date will directly affect all three of Kentucky's possible fall pests.

Fall Armyworm - an unusual but certainly possible fall foliage feeder on small grains. Fall armyworm (FAW) is already in the area having lived on corn, sorghum and wild grass hosts since about July. Early planting and a late mild fall will favor this pest. FAW could survive until heavy frost. In general, FAW will eat off the above ground portions of the plant and do little lasting damage. There are no thresholds for control of this pest in small grains. Control should not be difficult, but the decision as to whether or not to make a spray is not at all clear. One thing is for sure, most plants will come back even if all the above ground parts are eaten, so producers are advised not to replant without considerable evidence that the original stand is damaged. Replanting usually results in a "double stand" which in turn results in severe lodging and other problems.

Hessian Fly - has not traditionally been considered a major pest of Kentucky's small grains. Unfortunately, that may be because we have never looked very hard. To get a better idea of how this insect affects Kentucky's crops, see Entfact-101. However, from an immediate practical standpoint there are only a few things you can do to manage

for this insect. **Again, the most important is planting date.** This is the insect for which the term "Fly Free Date" was coined. In general, crops planted after this date will not be infested with Hessian fly. In Kentucky, the date varies from about Oct 10 in the northern Wheat growing counties to Oct 15 in the southern tier of counties (See Entfact-101, ENT-56). In addition, it is important to pay strict attention to all agronomic practices and variety selection that will produce strong, vigorous plants that stand well. Though resistant varieties will help, (and should be used if other plant characteristics are appropriate for your management plan) the populations of this pest found in Kentucky are able to break all the deployed resistance.

Aphid Complex and Barley Yellow Dwarf - This is without doubt the most contentious problem we have to face. Though it is important to remember that the insect feeding itself is unimportant, the transfer of Barley Yellow Dwarf Virus (BYDV) is extremely important. Once again however, you have a very good management tool for avoiding the problem -- planting date. Though it is not absolute, as one plants later, the chances of a problem with transmittal of BYDV decrease. Though there is no definable calendar date for avoiding BYDV, the "Hessian Fly Free" makes a good compromise.

Beyond planting date, the fall weather will be the next most important factor in decisions concerning aphids and BYDV. Certainly, we would like to see the fall cool down to reduce the survival of incoming aphids and to slow the movement of aphids in the field. Producers/consultants should be on the lookout for aphids especially in the first 30 days after planting. The earlier aphids appear the more problem one would expect from BYDV.

You are likely to hear the continuing discussion about how many aphids should be present before there is a need to spray. In the past, scientific literature has suggested about 10 aphids per row foot. Many consultants think that 5 aphids per row foot is more appropriate. Additionally, there is some new research (not yet published) from Georgia that suggest (at least in the deep south, in the first 30 days post plant) that three aphids per row foot is the appropriate number. Though I will be very interested to see the work from Georgia in its entirety, I think that for Kentucky right now, that number is too low. Additionally, none of these numbers will matter much unless you do a **VERY GOOD job of sampling the crop.** Variation from poor sampling or too little sampling will completely wipe out any precision gained by having a more refined threshold, - **AND** - this will still not address whether or not the aphids are carrying the virus!

Fall control of aphids designed for control of BYDV will remain a difficult decision for awhile yet. However, I think the following factors still deserve your consideration.

A. Factors to consider when deciding on insecticide intervention.

1. Factors that do not favor attempting insecticidal control of aphids.

- Planting after Hessian Fly free date.
- Hot, dry preceding summer.
- Cool fall.
- Aphid numbers below 10 per row foot.
- Cold open winter.
- Late, cool following spring.
- Non-intensive management of other factors.

2. Factors that favor attempting insecticidal control of aphids.

- Planting before Hessian Fly free date.
- Normal summer temperatures with adequate rainfall.
- Late, warm fall.
- Aphid numbers greater than 10 per row foot.
- Mild winter or snow cover.
- Early warm following spring.
- Intensive Wheat Management.

Likely Outcomes -

1. In epidemic years, sprays may pay for themselves, but will not likely protect the maximum yield potential.
2. In years of slight BYD, sprays will cost the producer.
3. In intermediate years, sprays will pay for themselves and a larger percentage of the potential yield will be protected.
4. Planting after the Hessian Fly free date is

worth one spray, possibly two.
5. Although there is some effect of spring infection/movement, fall effects appear to be far more important.
6. In the long term, obtaining the ability to predict, or at least estimate disease severity, will be the most important management tool for producers.

REFERENCES:

ENT-47 Insecticide Recommendations for Small Grains - 1997.
Entfact-101 Hessian Fly in Kentucky.
IPM- 4 Kentucky Integrated Crop Management Manual for Field Crops - Small Grains

WHEAT PRODUCTION PLANNING

Dick Trimble and Steve Isaacs
Extension Ag Economists

Wheat seeding time is fast approaching. No doubt you have been giving considerable thought to your wheat enterprise activities for the next production season. Crop rotation considerations, tillage practices, varieties, drill calibration, fertilization programs, pest control, and many other considerations have crossed your mind. But, have you really sat down and tried to put it all together to see how your plans will work? Have you started to make the hard decisions about specific actions you are going to take or will you simply leave this until you are out in the field in the heat of corn harvest or actual wheat seeding and let time force you into a less than optimal decision? Now is the time to make some of those decisions and see how they are going to work on paper rather than in the field at the end of the season.

The most common tool used to try to put everything together to see how your general plans are going to work is the enterprise budget. The idea behind using an enterprise budget is to make some decisions and run them through the budget to see how they may work on your farm. You can examine your standard production practices to see how they can be expected to work next season. Some of those new developments which you have learned about at Field Days and grower education programs and meetings can also be investigated. You may want to try some unusual practices and see how they work through with your enterprise budget. The whole idea is to use the enterprise budget to make some decisions and try to see how they could be expected to work when you actually put them into practice. Your objective should be to try to make some mistakes on paper to avoid making them in the real world which will be reflected in the performance of your wheat enterprise

If you have a wheat enterprise budget, that would be the best place to start the enterprise budgeting and planning process. If you have records summarizing the performance of your wheat crop from last year, these can be used to update and improve your existing enterprise budget, which you can use as a "base budget" for testing and trying some different production practices.

Table 1 (see last page of Newsletter) provides an example wheat enterprise budget for those producers that have not developed a wheat enterprise budget or those considering wheat production for the first time. This enterprise budget should reflect the general production situation for the typical Kentucky wheat producer using sound production practices. If you use this enterprise budget, be certain to use the "YOUR FARM" column to adapt the budget to fit your specific production circumstances. An alternative to using the "YOUR FARM" column in Table 1 is to simply download the computer-based spreadsheet budget template from the World Wide Web and make the changes directly to the enterprise budget. The address for downloading the template is:

http://www.uky.edu/Agriculture/AgriculturalEconomics/hort97.html

If you have Quattro Pro version 6.0 or greater, you should be able to download the budget template and use it to analyze the changes as discussed in the following.

The budget shown in Table 1 will not fit any farm situation perfectly. It should be used simply as a starting place or general format to help you consider and include most relevant production

variables. This wheat enterprise budget is essentially the same budget which was prepared for the last production season. The major change is in the expected wheat price. In conversations with Dr. Steve Riggins, University of Kentucky, Grain Marketing Specialist, he indicated that $3.80 per bushel would be a reasonable estimate of the most likely season average price for wheat during the upcoming year. (*Please see his article discussing the wheat market situation in this Newsletter*.) This is $.45 per bushel higher than the expected price used in our wheat enterprise budget last year and should indicate a fairly strong expected wheat price when compared to historical prices.

Another important variable in the wheat enterprise budget is the expected yield. We have used an expected yield of 60 bushels per acre. As shown in Figure 1, this is a bit higher than the recent state average yield of 52-to-53 bushels per acre. However, a state average of 60 bushels was achieved in 1994 and there is a definite upward trend in wheat yields in Kentucky. This improvement in wheat yields is a result of technological innovations and improved management of the enterprise by wheat producers across the Commonwealth. Further, a wheat producer should strive to improve the management and performance of the enterprise to increase yields and profit of the business.

On the other side of the ledger, there seems to have been little major change in the expected cost of producing wheat. Soil fertility and machinery repair and maintenance costs may be up just a bit and pesticide costs may be down slightly, but there does not seem to be any drastic changes from last year. You should make the appropriate changes to your production costs in your enterprise budget.

Considering these possible changes to price, yield, and costs of production; how does your bottom line look? In the example wheat budget in Table 1, the return to Land, Capital, and Management was $41.24 per acre. This is an increase of $27.00 per acre over the expected performance of the wheat enterprise last season. All of the change is a result of the improvement in expected wheat price.

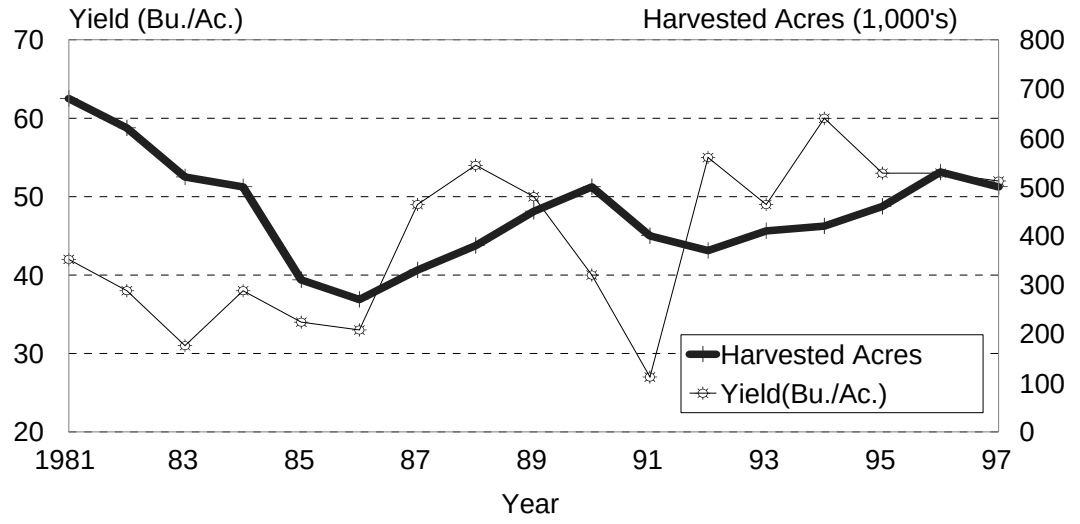
If you are pleased with the expected outcome from your wheat enterprise then you should be able to go into your production season with the confidence that you have made good decisions and should expect outstanding results from your wheat enterprise. However, if you are not satisfied with the expected results of your wheat enterprise, now is the time to make some changes and the enterprise budget is the place to try out those new ideas to see if they make economic sense. Will the changes you are considering pay for themselves and ultimately contribute to the bottom line of the wheat enterprise? If so, then it should be worthwhile to give them a try this season. If they will not pay on your farm, then you may need to investigate the reason for this and see if there is anything you can change to make them work for you as they have for other producers.

One of the things you must remember as you go about making changes to your enterprise budget involves the many interactions that can take place in the production of any crop or livestock enterprise. As an example, you may want to examine the benefits of splitting the application of nitrogen on your wheat crop. As you do this, you must remember that this will increase your machinery costs for the additional application cost(s). Similarly, you may want to consider increased levels of fertility to increase yields. Will it pay? How much can you increase fertility until you increase lodging and start reducing yields? What kind of pest problems will the increased fertility create? Will you have heavier weed or disease pressure? Will these require costly controls? These are only examples of the type of interactions that you must be aware of as you start making changes to the enterprise budget.

As you can see there may be numerous wheat enterprise budget changes you want to consider. The enterprise budget should provide a good way to evaluate the economic results of most changes you are considering. Using it, you should be able to try some changes without waiting a year to see how they might work. Also, it will not cost much! It will take some of your time and a bit of

concentrated thinking about your wheat enterprise. But, this process should help to put you in a position to make better production decisions and improve the profits from your wheat enterprise and the overall performance of your farm business.

Figure 1. Kentucky Wheat Yields and Harvested Acres, 1981-1997



Source: Kentucky Agricultural Statistics, Various Years

TABLE 1.
WHEAT, REDUCED TILLAGE
ESTIMATED ENTERPRISE COSTS AND RETURNS FOR 1997-98

	AMOUNT	UNIT	PRICE	TOTAL	YOUR FARM
GROSS RETURNS PER ACRE					
Wheat	60	bu	3.80	228.00	
TOTAL GROSS RETURNS PER ACRE				228.00	
VARIABLE COSTS PER ACRE					
Seed	120	lb	0.125	15.00	
Fertilizer	1	acre	46.80	46.80	
Lime	1	ton	12.12	12.12	
Herbicides	1	acre	15.00	15.00	
Insecticides	1	acre	0.00	0.00	
Fungicides	1	acre	10.00	10.00	
Fuel and Oil	1.3	hrs	5.91	7.68	
Repairs	1	acre	12.65	12.65	
Custom Hire	1	acre	4.12	4.12	
Equipment Rental	1	acre	0.32	0.32	
Drying	60	bu	0.00	0.00	
Crop Insurance	0	acre	6.84	0.00	
Cash Land Rent	1	acre	0.00	0.00	
Hired Labor	0	hrs	0.00	0.00	
Interest (1/2 year)	123.69	dollars	0.045	5.57	
TOTAL VARIABLE COST				129.26	
RETURN ABOVE VARIABLE COST				98.74	
BUDGETED FIXED COSTS/ACRE					
Depreciation				30.00	
Taxes and Insurance				10.00	
TOTAL BUDGETED FIXED COST				40.00	
RETURN TO OPERATOR LABOR, LAND, CAPITAL, AND MGT				58.74	
Less Operator Labor	2.5	hrs	7.00	17.50	
RETURN TO LAND, CAPITAL, AND MANAGEMENT				41.24	

The expected wheat price of $3.80 per bushel used in this planning budget is a projected season average price. Throughout the marketing year the wheat price may reach a high of $4.25 per bushel and a low, normally at harvest, of $3.50 per bushel.

Intensive Wheat Management School for Ky Wheat Producers

Wheat Tech, Inc., University of Kentucky and Small Grain Growers Association

September 23 (Tues.) **8AM-12 Noon (CST)**

Hickman County at the Curtis Hancock Farm

Located between Hwy 307 and Hwy 45 (watch for signs). From Mayfield, take Hwy 45 S, right on Hwy 94 and go 1.3 miles. From Fulton, take Purchase Pkwy, Exit 2, go North on 307 about 1.5 miles, turn right on Hwy 94. It will be the 4th house on the right.

Hardin County is planning a similar training and will be announced later this month.

Notes of Interest:

Growing Wheat Well

Sept. 18, 8-10 PM (CST) C-Band:Galaxy 4(G4), Channel 9, 3880 MHZ.

Program will look at the advantages and disadvantages of various wheat varieties available for the 1998 planting season; field demonstrations of drill calibration; wheat producers experiences through the season with a new variety about to be made available; and discussions of herbicide management, insect and disease situations. Produced by University of Nebraska. Contact Jim Randall, 800-755-7765; agcm014@unlvm.unl.edu

WHEAT SCIENCE AT UK

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