



# Plant & Soil Sciences Extension Newsletter

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## Thinking About No-Till

Have higher fuel prices got you thinking about cutting out some tillage? Many wheat growers in Oklahoma are contemplating no-till or reduced tillage systems. If you are considering no-till for the coming year, you should be preparing for it before wheat harvest. One item often overlooked by the first-time no-tiller is spreading residue at harvest. Most combines are equipped with some type of straw spreader, but chaff and other material coming over the cleaning shoe is seldom spread. If we consider that wheat typically produces 100 pounds of residue per bushel of grain, a 30 bu/ac wheat crop will have 3000 lb/ac of straw and chaff. If half of the straw and chaff goes through the combine, you could leave up to 7500 lbs/ac in the strip behind the machine. Spreading the straw will greatly reduce this density, but the chaff can still cause problems. The small windrow of chaff behind the combine will have a higher volunteer seed concentration, will potentially intercept pesticides, and will insulate the soil surface. The cooler, wetter soil under the chaff can lead to emergence problems if you plant into it next spring. Cool, wet soil won't be a problem if you are planting wheat or canola in the fall. However, a windrow of chaff can cause poor planter or drill performance regardless of when the crop is planted. The extra residue in a chaff windrow can reduce emergence.

If you are considering a chaff spreader, the following are some questions should you ask:

- How far does it spread chaff? Make sure it will cover the width of your header or at least get close. If your header isn't too wide, you can probably get by with a less expensive model.
- Does it spread material uniformly? The spreader should spread chaff uniformly in both directions.
- How is the unit driven? Some units are hydraulically driven while others are belt driven. At least one type uses a fan mounted on the side of the combine to provide an air blast to spread material.
- Is it user friendly? Can the spreader be easily adjusted? How much trouble is it to inspect and adjust the combine after the spreader is installed? It's not a good idea if you have to completely remove the chaff spreader to get into the cleaning shoe.
- How much does it cost and can you get dealer support?

Remember, no-till is a feasible cropping system for Oklahoma. However, you need to plan ahead and think about how you can accomplish your goal of establishing and growing a crop after wheat. Getting a good stand in no-till is essential and it starts at harvest.

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## Pre-emergence peanut weed control considerations

As time nears for decisions on pre-emergence and burndown herbicide applications for peanut field's producers should consider a few questions:

- What are my problem weeds?
- Have I had good weed control with past herbicide programs or do I need to alter the line-up?
- Will I mechanically incorporate or water-in my herbicide?
- What will my timing of application be?

Observations made during the last few years and a survey from the 2009 Peanut Expo indicated that the most common weeds in peanut fields are nutsedge, morningglory, crabgrass, tropic croton, and several pigweed species. Traditionally, the yellow herbicides (Prowl, Prowl H<sub>2</sub>O, Treflan, etc) and metalachlor (Dual) have been used for early season weed control in peanut fields. Over the last several years many producers have observed a decrease in effectiveness of early season weed control, especially with pigweed species. This reduced control maybe a result of lack of incorporation with tillage, untimely incorporation from water, etc. We have looked for other products to help lengthen the window of early season weed control. The one product that we have seen an increased use of the last two years is Valor. Data from Florida (Table 1) indicates what we have observed here in that Valor does provide greater early season control of palmer amaranth compared to other products. Valor also has exceptional activity on morningglories. Valor SX may be applied either prior to planting or pre-emergence. Pre-emergence applications must be made within 48 hours after planting and prior to cracking. Make sure to read and follow label directions.

**Table 1. Length of time each herbicide provided satisfactory control of Palmer amaranth.**

Herbicide (Rate)	Duration of Palmer Amaranth Control* (in days)	
	Rye cover	No cover
Prowl H <sub>2</sub> O (2 pt/A)	4	2
Solicam (1.5 lb/A)	11	8
Dual Magnum (1.33 pt/A)	20	28
Valor (3 oz/A)	60	60
None	2	1

*Jason Ferrell and Michael Dobrow, 2009*

*\*Duration of control refers to the length of time (in days) that each herbicide held Palmer amaranth populations below the threshold of one plant per three feet of row.*

Including Valor in a herbicide program does not mean that the use of the yellow herbicides and Dual II Magnum should be stopped. Surveys from the Peanut Expo indicated that producers that were happy with early season weed control (28 days after planting) included both a yellow herbicide and Valor. In some instances Prowl H<sub>2</sub>O

or Treflan was applied 5-10 days prior to planting with glyphosate (burndown) and then followed up with Valor SX one day after planting with another glyphosate application. This is an example of a very intensive herbicide program but it did provide excellent early season control.

Incorporation is an important thing to consider, especially with the yellow herbicides. Treflan should be incorporated within 24 hours after application, Sonalan within 48 hours, and Prowl H<sub>2</sub>O must be incorporated prior to weed seed emergence.

Whatever your peanut weed control program is for 2009, I would recommend not trying to reduce herbicide input costs by cutting products that you know work. The importance of a clean peanut field at harvest is worth the investment. For example, research has indicated as few as 1 palmer amaranth plant per 3 foot of row can reduce peanut yield by 30%.

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**Peanut field that has a large population of pigweed species. Yield can easily be reduced by 30% from pigweed species.**

## Harvesting Tips for Short, Thin Wheat

Some wheat in the state will be shorter and thinner than usual resulting in difficult harvest conditions. As with any harvest, there is no substitute for preparation. Have the combine ready to harvest when the wheat is ready. A thin crop means that gathering will be difficult. A shorter crop means the header will need to be operated closer to the ground. Both of these items will create challenges, but some minor adjustments can improve harvest efficiency in these challenging conditions.

Adjustment Tips for an Efficient Harvest:

**Cutter Bar Angle.** Tilt the cutter bar or header up so that the skid plates are exposed and the header can be operated closer to the ground without gathering dirt into the header. For common combinations of feeder house length and tire size, the best adjustment is often near the upper end of its range. Tilting the cutter bar up too far will not allow the cutter bar to cut low enough.

**Accumulators.** Check the gas charge of the header accumulator. A properly charged accumulator allows more effective use of the header skid plates when harvesting short crops. Conversely, a flat accumulator will result in high forces on the feeder house and header pivot areas.

**Header Lateral Leveling.** Level the header from side to side before harvest. Check tire inflation pressure before leveling.

**Reel Speed and Position.** High reel speeds will shatter grain while slow reel speeds will cause poor feeding. Operate the reel at a speed that is fast enough and a height that is low enough that the crop gently moves onto the cutter bar. Reel speed should be slightly faster than ground speed. In short crops, moving the reel down and forward will help move the crop across the cutter bar. Be careful not to move it too far forward or the crop will feed in bunches. Make sure the reel is level relative to the cutter bar.

**Pickup Reel Adjustment.** Tine pitch should be adjusted to hold the crop against the cutter bar then sweep it into the cross auger. In extreme short, thin wheat, it may be necessary to cover tines with plywood or other material to make a solid bat.

**Cutter Bar Fore/Aft Position.** Some headers have two or more positions for the cutter bar. If this is the case, the forward position allows the reel to be operated lower so that it can sweep the cutter bar without contacting the cross auger.

**Knife Condition.** Thin crops require a clean cut for best feeding so pay attention to knives and cutter bar condition. Make sure knife hold downs are adjusted properly and all knife sections are sharp and not broken. Make sure that you have spare knife sections available in the field.

**Finger Timing.** The amount of extension on the fingers in the center of the auger is not adjustable, but the timing is. Finger extension timing should be retarded (fingers extending later) for thin crops. If fingers are operated in the normal position, they may not positively convey the light wheat to the feeder house chain. This will result in bunched feeding. If timing is changed, check the clearance between fingers and the platform floor.

## Harvesting Tips for Short, Thin Wheat (Cont.)

**Ground Speed.** With a thin crop there will be a tendency to operate faster in an effort to keep the machine full. However, driving too fast will result in poor cutter bar performance and increase header losses. Driving too fast will drag the crop under the cutter bar before it can be cut.

**Hydrostat Durability.** Operating a combine in road gear with the hydrostat pulled back to a low setting results in high pressure in the hydrostatic system. A better option is to run in a lower gear with a higher hydrostat setting.

**Adjustments for Low Test Weight.** If poor weather conditions persist, this year's wheat crop may have a low test weight and that means it will be harder to clean. Pay close attention to fan settings and sieve openings. Use only enough fan blast to keep the layer of material on the cleaning shoe suspended. More air will increase grain loss.

**Operator's Manual.** There is no better place to find information about combine and header adjustment than the operator's manual. Operator's manuals provide adjustment procedures and troubleshooting charts that are specific for a piece of equipment. If you cannot find your operator's manual, check with your local dealer. Many companies are also putting operator's manuals on the internet.

**Strippers.** Check the operator's manual for the recommended clearance between auger flighting and strippers. As you make this adjustment, be sure to allow clearance for the auger runout induced by solar heating that occurs while the combine is parked (especially on wide headers).

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**Wheat Disease Update – 05 May 2009**

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**Oklahoma:** Rain has prevented extensive field scouting, but in examining the variety demonstration strips yesterday here at Stillwater I observed leaf rust moving up the canopy in Jagalene and Jagger. In spots, I found leaf rust at about the 15S level on flag leaves and in the 40-65 MS/S level on leaves below the flag. Plots were still not uniformly infected, but given the temperatures and abundance of free moisture, leaf rust will certainly be increasing. Leaf rust in nearly all other varieties was much less than in Jagalene and Jagger. Dr. Brett Carver (OSU Wheat Breeder) observed similar rust incidence in his breeder plots near Marshall, OK (about 25 miles west of Stillwater), but rain kept him from looking at plots near Lahoma and elsewhere. No stripe rust was observed. Powdery mildew continues to be present on lower leaves. With this wet weather, leaf rust and other foliar diseases should increase dramatically over the next couple of weeks. If a fungicide application is being contemplated, remember the latest at which fungicides can be applied is at full heading before flowering (anthesis) begins.

Jen Olson (Plant Disease Diagnostician) has received about six wheat foliage samples for virus testing over the last week from northwestern OK and the panhandle. Most of these tested positive for barley yellow dwarf virus although a few were negative for all viruses. One observation I would make here is that although BYDV is common in the state this year, there also is considerable yellowing and discoloration of wheat leaves due to the late freeze. I checked with both Drs. Carver and Edwards, and they confirmed that a freeze such as the one we had on April 7<sup>th</sup> will cause damaged tillers to abort, and those aborted tillers and leaves will turn yellow as nitrogen is redirected to living, fertile tillers. Hence, to make a long story short, there is a lot of yellow/yellowing wheat that is the result of the freeze rather than BYDV or other viruses. BYDV certainly is prevalent in the state as testing in the Diagnostic Lab demonstrates, but there also is yellowing & discoloration present not from BYDV or other viruses, but likely from the freeze.

Gary Strickland (OSU Extension Educator, Jackson County) reports seeing much of the same regarding BYDV in Jackson County (southwestern OK) as well as some root rot symptoms in fields in southwestern OK.

**Updates from other states:**

**Arkansas:** 04-May; Dr. Gene Milus, Wheat Pathologist, University of Arkansas. Plots at Lonoke (25 miles east of Little Rock) were mostly just past flowering. No stripe rust. No stem rust on McNair 701. Trace leaf rust on some unadapted lines but none on varieties. Septoria leaf blotch on lower leaves but did not move up much because of previous week's hot dry weather. BYD was the most prevalent disease. Some take-all showing up. Powdery mildew essentially disappeared. Hessian fly damage and pupae were easy to find, and damage likely will be severe in some plots.

Plots at Hamburg (southeast corner) were mostly in soft dough with early varieties approaching maturity. No stripe rust. No stem rust on McNair 701. Up to 15% leaf rust on some unadapted lines and trace on varieties. Septoria leaf blotch on lower leaves but did not move up at all because of previous week's hot dry weather. The only exception was on Roane that had about 50% leaf blotch in non-treated plots. BYD was the most prevalent disease. Bacterial streak and black chaff on a few varieties - likely from seedborne inoculum.

We have been in monsoon season for past week, so disease situation may change.



**Leaf rust pustules on the flag leaf of wheat.**



**Purple and yellow leaves due to barley yellow dwarf virus.**

## Upcoming Events

- 2009 Wheat Field Days (**Contact County Extension Office for more details**)
  - NW area field days ([click here](#))
  - Apache Wheat Field Day—May 8
  - El Reno Wheat Field Day — May 11
  - Woods County Wheat Field Day—May 14
  - Lahoma Wheat Field Day -- May 15
  - Kay County Field Day—May 18
  - Logan County Wheat Tour—May 19
  - Panhandle wheat tour—June 3
- Oklahoma Ag Technology Field Day  
July 28, 2009 Northwest Technology Center Fairview, OK
- 2009 Summer Crops Field day
  - August 19 at the Lahoma Research Station—more details to follow
- 2009 OSU Winter Crop School
  - December 15 & 16—Wes Watkins Center, Stillwater—more details to follow

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### Subscription information

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## 2009 NW Oklahoma Wheat Tours

<b>Date</b>	<b>County</b>	<b>Time</b>	<b>Location</b>
April 28	Noble	3 pm	Billings, 1 mile West on HWY 15
May 5	Kingfisher	8 am	Kingfisher Co. Fairgrounds
May 11	Alfalfa	6 pm	Cherokee, 3 mi. North on HWY 8
May 12	Harper	1 pm	Buffalo @ NRCS Service Center
May 13	Blaine	Noon	Wheeler Bros. Grain Elevator
May 13	Major	6 pm	Homestead, 1.5 mi. north of elevator
May 14	Dewey	9 am	Taloga with Leedey following
May 14	Woods	6 pm	Alva, 4 mi. west on HWY 64
May 15	Lahoma Wheat Tour	9am	Lahoma, 1 mi. west on HWY 412
May 18	Kay	8am	Kildare, 3 west and 1 south of HWY 11 & 77 Junction
May 19	Logan	1:15 pm	Marshall Res. Station
May 20	Grant	10 am  1:30	Kirby Farms 5 mi. west of Lamont on HWY 60  Berline Farms 1 mi. East and 12 mi. north of HWY 74 & 11 Junction
May 21	Woodward	1:30 pm	So. Great Plains Res. Station