WHEAT PRODUCTION NEWSLETTER

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Phosphorus Sources

By Jeff Edwards

There have been several questions from farmers this fall regarding phosphorus fertilizer sources and their effectiveness. While the questions vary slightly, the answer is generally the same……all forms of commercially-available P fertilizers will provide similar crop performance. In other words……the plant does not really care whether you are a dry or a liquid guy.

As far as the plant is concerned there are only two big issues. These are placement and amount. Placing the P fertilizer in-furrow will increase efficiency and early-season plant availability, and the majority of wheat farmers in Oklahoma have a high likelihood of benefiting from an in-furrow application of P fertilizer.

The amount of P fertilizer needed will depend on the soil, but approximately 23 lb/ac of P_2O_5 (50 lb/ac of 18-46-0) in-furrow is what we use for all of our variety trials and this would not be a bad starting point for most Oklahoma farmers. Broadcast applications can work too, but the amount of P fertilizer needed is generally much greater than required for an in-furrow application.

Dry and liquid forms of phosphorus are equally effective under most conditions. So, make decisions on phosphorus source based on equipment capabilities and fertilizer price.

Diammonium phosphate or DAP (18-46-0) is used for the vast majority of in-furrow applications of dry fertilizer in Oklahoma. There are many formulations of liquid P fertilizer available such as 10-34-0 and 11-37-0 and choosing among them can sometimes be difficult. Remember, though, that to the plant a pound of phosphorus is a pound of phosphorus and comparisons among sources should mostly be based on cost.

To compare costs among two fertilizer sources, simply figure out the amount of actual P_2O_5 per ton of fertilizer. For example, DAP or 18-46-0 is 46% P_2O_5 so there would be 920 lbs of P_2O_5 per ton of product. To figure the cost per unit P_2O_5 one would then simply divide the price per ton by the lbs of actual P_2O_5 per ton of product. Most P fertilizers sold in Oklahoma also include some nitrogen, so when comparing the costs among fertilizer sources don't forget to place a value on this nitrogen.

Finally, avoid the temptation to "spike" in-furrow fertilizer applications with additional nitrogen. Nitrogen and potassium are salts that can inhibit wheat germination. The general rule of thumb for wheat is to never apply more than 30 lb total of N and/or K in-furrow. Most farmers will already get 10 - 15 lb/ac of N from their P source and will likely not see a great benefit from additional N in-furrow, so the best bet is to stick with the N already in your P fertilizer.

Fall Armyworm Q & A

By Tom A. Royer

Q. "A couple of years ago, fall armyworms seemed to destroy my pasture "overnight", where do they come from?"

A. Fall armyworm is a tropical insect and overwinters only in the warmest areas of the US. As populations build throughout the summer, they move northward on weather fronts, often arriving in Oklahoma in late summer. Because several generations develop during the summer, the generations overlap and effectively create a continuous supply of moths (and eggs). Any fall-planted wheat field that is emerging out of the ground could become infested.

Fall armyworm infestations often go unnoticed for a while because they don't cause obvious damage until they get bigger. The caterpillars shed their skin five times before they quit feeding. To indicate the stage of growth that a caterpillar is in, we refer to them as instars. The first instar is the caterpillar just after it hatches. A second instar is the caterpillar after it has shed its skin for the first time. A sixth instar has shed its skin five times and will feed, bury itself in the soil, and pupate.

If you were to ration out a supply of food to feed each instar, you would need to reserve 70% of the total supply just to feed a sixth instar caterpillar. It is similar to trying to feed a hungry teenager. Like a teenager, a sixth instar fall armyworm can eat lots of food in a relatively short period of time, and leave little leftover for anyone else.

Q. Is my wheat susceptible to fall armyworm?

A. YES. Producers should be monitoring any emerged wheat for signs of fall armyworm feeding.

Q. "How can I recognize a fall armyworm infestation before it causes major injury?

A. During the first three instars, the caterpillar does not remove much plant tissue. It will scrape off the epidermis of the leaf, leaving a clear, papery membrane that you can see through. This type of feeding is called "windowpaning" or skeletonizing. As the caterpillar gets larger, it chews through the leaf and begins eating along the margin of the leaf blade. Fourth through sixth instars chew along leaf margins and eat the entire leaf blade, as well as stems. The key is to look for the "windowpaning" as an early sign that you have an infestation.

Q. How many fall armyworms are too many, and how do I control them?

A. In fall seeded wheat, treat if you find two to three armyworms per foot of row. In pasture, no established treatment threshold has been determined, however a general guideline for fall armyworm control in the southeastern US suggests that if you find two or three large larvae per square foot in grass pasture, consider treating.

Several insecticides are registered for control of fall armyworm in wheat, including Lorsban SG, methomyl (Lannate), Warrior T, and parathion (methyl or ethyl). Remember to follow all label restrictions.

In pasture, Sevin , malathion, Lannate (for bermuda pasture only), Confirm2F, and methyl parathion are labeled for control of fall armyworm.

Fall armyworm can quickly devastate a wheat field and regular scouting is essential to preventing economic damage

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Q. "Once this brood of armyworms is gone, can we quit worrying about them?

A. The short answer is no. Fall armyworms are likely to be with us until we have a killing frost. However, we are getting late enough in the year that this will probably be the last generation that we see. The bottom line is that producers should remain vigilant.

Q. If I treat for fall armyworm, when can I put my cattle back out to graze?

A. **Grazing restrictions are as follows for wheat:**

Sevin	7 days
Karate (RUP)	30 days
Lannate (RUP)	10 days
malathion	7 days
methyl parathion (RUP)	15 days
ethyl parathion (RUP)	15 days
Lorsban 4E-SG	14 days - 28 days for harvest

Grazing restrictions for pasture

carbaryl, (Sevin and other names - check label for specific recommendations)	0-14 days
Confirm	0 days
malathion	0 days
methomyl (Lannate) bermuda only	7 days
parathion (methyl)	15 days

Q. If I have a wheat field that has been chewed to the ground, will it come back if I control the worms, or should I consider replanting?

A. The answer to this question involves several considerations. First, the armyworms are not controlled, they will continue to feed and keep the leaves from getting above ground. At some point, the plants will simply "wear out" and die. If the wheat was very small seedling stage and under stress the plants may not have enough energy reserve to recover. However, if the wheat had some time to develop top growth before the armyworms chewed them down to the base and you have adequate soil moisture, you may see a nice recovery of the stand.

Before you decide on whether to spray or replant, answer the following questions:

- *Was your stand marginal to begin with?* If the answer is yes, you might want to consider replanting.

- *How much will it cost to replant versus spraying?* You should consider the economics of controlling the current infestation with the costs of a replant. If you replant, you might want to delay planting for several days to make sure the armyworms have either pupated or "marched" out of the field.

Q. "My lawn is infested, what should I do?"

A. There are products available for control, but for bermuda turf, you might consider not doing anything. It is late in the year, and fall armyworm will not likely cause serious damage. If you decide that control is required, several products are registered, including *Bacillus thuringiensis* (Javalin), diazinon, Orthene or Sevin. You may still find Dursban in stores, but it will no longer be sold to homeowners after 12/31/01, so you should probably consider other products.

A couple of new pyrethroid insecticides are available for homeowners as well. One line is the Bayer Advanced Lawn and Garden Multi-Insect Killer which contains cyfluthrin. Another line is the Ortho Home Defense Indoor and Outdoor Insect Killer, which contains bifenthrin. Both are very effective at very low dosages. Remember to follow all label directions before applying any pesticide.

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