

News Column

Stacy Campbell

Cottonwood Extension District, Hays

June 29, 2020

Considerations for weed control following wheat harvest

Post-harvest weed control in wheat stubble is very important to conserve soil moisture and prevent weeds from going to seed and adding to the weed seedbank. Weeds are likely to be growing quickly, especially where there are thin stands and some recent precipitation. Controlling these weeds while there is moisture and active growth, before they set seed, is a good idea.

The standard treatment for many years to control weeds and volunteer wheat in wheat stubble was glyphosate plus 2,4-D LVE. If kochia was present, we may have added some dicamba, but it generally wasn't added in the eastern areas of Kansas because of drift concerns to soybeans. Glyphosate plus 2,4-D and/or dicamba remain a primary option for weed control in stubble, but with the development of glyphosate-resistant weeds, these options certainly don't work as well or quickly as they used to.

Glyphosate used to be fairly foolproof, even on big weeds, but that is no longer the case. Dicamba and 2,4-D probably weren't contributing as much to the weed control in those tank mixes as we may have thought, so now we are struggling to achieve acceptable control. Timing and weed size is much more critical with almost all other herbicides than it was with glyphosate. Consequently, it is very important to try and apply those treatments before the weeds exceed 4 to 6 inches tall, but that often doesn't happen. In addition, treatment before weeds exceed 4 inches tall may require a number of applications to manage multiple flushes of weeds, which adds significantly to the cost of control.

Higher rates of the 2,4-D and dicamba may improve control, but in most cases we probably don't want to exceed 1 qt/acre of 2,4-D or a pint/acre of dicamba. Sharpen is another herbicide tank-mix partner that may help with control of the pigweeds and provide some residual control. Sharpen works best with the addition of methylated seed oil and can provide some pretty good burndown on smaller weeds, but if the weeds are very big, it tends to burn the tops and plants eventually resume growth. Applying 2 or 3 oz/acre of Sharpen instead of 1 oz/acre will improve control of larger weeds and provide longer residual control. Sharpen requires complete coverage so using 15 to 20 gallons/acre spray solution is important.

One herbicide alternative to glyphosate that can work well to control emerged pigweed and kochia is paraquat. Paraquat is a contact herbicide, so spray coverage is critical. Spray volumes of 20 gallons/acre or higher are preferred, especially on larger weeds or denser stands. Paraquat also needs to be applied with a non-ionic surfactant or oil concentrate to enhance surface coverage of the plant foliage. A tank mix with atrazine will enhance control and provide some

residual weed control if planning to plant corn or sorghum next spring. Likewise, metribuzin can be tank-mixed with paraquat if rotating to soybean to enhance control and provide some residual. If planting wheat this fall, a tank mix with Sharpen is an option to provide some residual control. **Recent work at K-State suggests that making the paraquat application as soon as possible following wheat harvest allows for better coverage and more effective control especially of the pigweeds.**

Another herbicide that can be added to the burndown treatments for residual broadleaf weed control in wheat stubble is flumioxazin (Valor and others). Flumioxazin has been used as a pre-plant/pre-emergence treatment in soybeans for years, but it hasn't been used much in wheat stubble because of the cost. However, with the recent reduction in flumioxazin prices, it may be worth considering as part of our stubble management treatments for residual weed control, especially the pigweeds. Wheat can be planted 30 days after 2 oz/ac, or 60 days after 3 oz/ac Valor application, if at least one inch of rain occurs between application and planting. Corn, sorghum, cotton, sunflowers, or soybeans can be planted the following spring following flumioxazin treatment. Residual weed control with flumioxazin will depend on rainfall for activation, just as with pre-plant treatment in soybeans.

Note: Recent data evaluating the efficacy of some of these herbicide programs and others on Palmer amaranth control in wheat stubble in western Kansas are available on our web site at www.cottonwood.ksu.edu in a companion article "New study evaluated different herbicide programs for Palmer amaranth control in post-harvest wheat stubble".

Stacy Campbell is an Agriculture and Natural Resources agent in the Cottonwood District (which includes Barton and Ellis counties) for K-State Research and Extension. You can contact him by e-mail at scampbel@ksu.edu or calling 785-628-9430.