

News Column

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Kochia control in early spring for fields in wheat or going to wheat this fall

Producers should begin soon in planning their program for controlling kochia. The spread of glyphosate-resistant kochia populations throughout western Kansas, and the difficulty growers have had controlling these populations, suggest that perhaps control measure should begin prior to emergence of kochia.

Major flushes of kochia emerge in early March and into April. If allowed to emerge, postemergence herbicide applications often will not provide adequate control. Incomplete control of these dense populations is likely in these situations. When the kochia is glyphosate-resistant and complete herbicide coverage is not possible, results can be very poor when trying to use postemergence products to control dense populations. The dense populations may also be stressed, which reduces the effectiveness of postemergence herbicide applications.

The choice of herbicides for effective preemergence control of kochia in late February and early March will vary depending on subsequent cropping intentions. Various cropping scenarios are discussed below.

Note: All information in this article are based on data from irrigated plots at the K-State Southwest Research-Extension Center at Tribune, and with populations of kochia that are susceptible to triazines. The kochia at this site is a mixed population of glyphosate-resistant and susceptible plants.

If kochia is emerging in row crop stubble intended to be planted to wheat this fall, herbicide options exist that provide residual kochia control. Atrazine cannot be used in this situation, as this treatment is off-label. The following herbicides could provide effective residual control of kochia for fields to be planted to wheat this fall: dicamba, metribuzin or Dimetric (Dimetric label indicates $\frac{1}{2}$ to $\frac{2}{3}$ of a pound), Corvus, Balance Flexx, Scoparia (equal to Balance Pro), and Lumax EZ. These products allow wheat to be planted 4 months following application.

Treatments of the above mentioned herbicides can be effective when made prior to kochia emergence. Herbicide trials suggest a November application of 1 lb of atrazine was effective through June 12, however, this treatment is labeled only if corn or sorghum will be planted the following year. The November application of Corvus was not adequate. The addition of metribuzin to Corvus would have improved kochia control. HPPD inhibitors should always be applied with a triazine. Only metribuzin, which is a triazine, can be applied in the late fall or early spring when wheat will be planted in the fall. February and March applications of Corvus and metribuzin were very similar and effective. This suggests that if weather cooperates and a

window for application is available in February, getting early treatments applied at that time could be beneficial.

Fields of standing wheat

If kochia is emerging in a field of growing wheat, the options for control depend on whether the population of kochia is susceptible or resistant to ALS-inhibitor herbicides and whether wheat has reached the jointing stage. There are three big challenges to kochia control in wheat:

- There are many populations of kochia with resistance to either ALS-inhibitor herbicides, or glyphosate. There may even be some populations resistant to dicamba.
- A majority of kochia emerges early in the spring, but some emergence can extend over a period of weeks or months. An herbicide applied early in the spring will need to have residual activity to be effective on later-emerging kochia. Several ALS-inhibitor herbicides have good residual activity, but are ineffective on ALS-resistant kochia.
- Dicamba, a non-ALS herbicide is one of the more effective products on most populations of kochia, but must be applied before the jointing stage of wheat.

Many populations of kochia present in wheat in western Kansas are resistant to ALS-inhibitor herbicides, however ALS inhibitor herbicide tank mixtures with dicamba or herbicides containing Starane can be very effective to control kochia. In general, 2,4-D, MCPA, Aim, and Cadet, are not very effective in controlling kochia.

Additional products containing dicamba include Rave (Amber + dicamba) or Pulsar (Starane + dicamba). These products have to be applied before the jointing stage of wheat. Dicamba has some residual soil activity, but not as much as most sulfonylurea herbicides. Rave will have residual activity from the Amber, but since Amber is a sulfonylurea herbicide, it would not provide any residual control of kochia populations that are resistant to ALS-inhibitor herbicides. Both ingredients in Pulsar have limited residual activity.

As mentioned above, another option producers have for kochia control is Starane or other fluroxypyr products. Like dicamba, Starane is a growth regulator herbicide, but it can be applied up to the early boot stage of wheat. Starane also has limited residual activity, so good coverage is still important for control. Starane is weak on mustard control.

Huskie is also effective on kochia. It is a broad-spectrum herbicide effective on most broadleaf weeds in wheat, and can be applied up to the boot stage of wheat. Huskie also has limited residual activity, so producers will need to make sure kochia plants are thoroughly covered with Huskie to get the best control. Ideally, the Huskie should be timed for application after the majority of kochia has emerged, but before the wheat canopy affects good spray coverage.

Buctril can control kochia and can be applied at later stages of wheat development, but is a contact herbicide with no soil residual activity. Consequently, Buctril has the same kind of challenges as Starane and Huskie in terms of getting good coverage. Getting thorough coverage is even more critical with Buctril since it is a true contact herbicide and not translocated in plants. Buctril is effective on very small kochia only.

Information provided by Dallas Peterson, Weed Management Specialist.