

## Weed control in winter wheat: Timing is everything

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Late-fall planting in certain areas of the state and unpredictable weather conditions have been troublesome for some of the 2017 winter wheat crop. These challenges have left Michigan winter wheat fields at various stages. In fields where herbicide applications have not been made, it is important to understand what the cutoff application stages are for the different herbicides. Herbicide applications after these stages can lead to excessive crop injury and reduce yield. Below is a review of the maximum application timings and weed control strengths for commonly used winter wheat herbicides.

**Feekes growth stage 6:** Feekes stage 6, also referred to as jointing, is the first application cutoff for several winter wheat herbicides. Among these are several of the plant growth regulator herbicides including: 2,4-D (amine and ester formulations), dicamba (Banvel or Clarity), MCPA, and Curtail (2,4-D amine + Stinger). These herbicides are typically good on summer annual weeds like common lambsquarters, pigweed, and common ragweed, but vary in their control of some of the more common winter annual weeds like common chickweed. 2,4-D, MCPA, and Curtail will not control chickweed. Osprey, PowerFlex HL, and Puma are other herbicides that need to be applied prior to Feekes stage 6. These herbicides are our best options to control several grass weeds, like windgrass, in winter wheat. PowerFlex also has good activity on some broadleaf weeds, including common chickweed. If winter wheat is at jointing these herbicides should no longer be used.

**Feekes growth stage 7.9:** Feekes stage 7.9, just prior to flag leaf emergence, is the next application cutoff for certain herbicides. Affinity BroadSpec, Harmony Extra, Harmony, Express, Huskie, Axial XL, and the new herbicide Quelex can be applied to wheat until just before the flag-leaf is visible. Affinity BroadSpec, Harmony Xtra Harmony, Express, Huskie, and Quelex all provide good to excellent control of common chickweed and several other winter and summer annual weed species. Axial XL can be used to control grasses, including annual ryegrass and windgrass, in winter wheat.

**Feekes growth stage 9:** The last application cutoff window for herbicide applications in winter wheat is Feekes stage 9, just prior to the boot stage. Herbicides that can be applied up to this point include: Buctril, Stinger, Starane Ultra, and Widematch (Stinger + Starane). These herbicides will control broadleaf weeds, however many have a fairly narrow weed control spectrum. For example, Buctril provides better control of summer annual weeds, but is not very effective against winter annual weeds. Starane Ultra has a very narrow weed control spectrum, but is excellent in controlling hemp dogbane. Stinger, on the other hand, provides excellent Canada thistle control.

For more information for control of winter and summer annual weeds including windgrass control can be found in Chapter 3 of the *MSU 2017 Weed Control Guide for Field Crops* (E0434) <http://msuweeds.com/assets/2017-Weed-Guide/2017WG-small-grains.pdf>