K-STATE Research and Extension | Meadowlark District

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Using Plant Life Cycle to Our Advantage

There's a chart at the front end of the weed and brush control section of the *2024 KSU Chemical Weed Control Guide* that provides an overview of various mechanical and chemical control methods available for selected weed species. For example: it notes that Eastern red cedar is an evergreen perennial with control options including foliar *and* soil herbicide treatments as well as mechanical removal options.

Sometimes that information doesn't mean much, but sometimes it can help direct a control program, particularly when it comes to enhancing chemical control. In the instance of annual plants that complete their lifecycle in one growing season vs. perennials (same plant comes back every year) or biennials that take two years to complete their life cycle, sometimes the control approach can – and should – be different.

In the case of annual weeds (ragweed, cocklebur, cheat, etc.…), herbicide efficacy is greatest when weeds are in their small seedling stage. We need to catch them early.

Biannual (thistle) plants spend the first growing season in a vegetative stage and produce reproductive structures in the second. By the time they reach that second year, they're difficult to control, so control efforts should be focused on the first growing season, or at the very latest the early vegetative stages of the second growing season.

Perennial plants are even more complicated, with best results achieved when chemical applications can be timed to coincide with translocation of carbohydrates to the roots. Doing so can aid herbicide movement to the roots for a more effective kill of the perennial root system. This timing can be a challenge. Optimal translocation most often occurs when plants have 'fully leafed out' or produced a significant vegetative growth. For perennial weeds, when they reach 10 to 20" of growth, herbicide applications are often effective at killing the perennial root systems. For summer brush species this stage is typically reached in late-May or mid-June depending on the plant species, spring weather, and region of Kansas. Many brush species are best controlled in June, however buckbrush is best controlled in early-May, while blackberry and multiflora rose are best controlled after late-May.

While we're often after multiple species when we do an application, a little understanding of life cycle can help enhance control, or better explain why a particular product didn't perform as well as hoped. There are lots of great resources to help. The aforementioned KSU Chemical Weed Control Guide (available online at https://bookstore.ksre.ksu.edu/pubs/chemweedguide.pdf or upon request in any District Office) is a good one. Numerous online and print resources are also excellent as well. Drop me a line if you are interested in some of those.