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### **Fall Herbicide Applications – Beyond the Weeds**

The fall weed control window is open. While we're looking directly at getting rid of weeds with most programs, there are often other benefits as well, as outlined in a 2013 University of Missouri Integrated Pest Management article by Extension Weed Scientist Dr. Kevin Bradley. In that article, he not only discussed spring weather uncertainty and longer term (residual) weed control benefits, as well others worth thinking about as well.

The first was soil temperature. While a dense mat of winter annual weeds may make planting conditions more difficult, temperature differences can be significant as well. Missouri research comparing sites where weeds were present versus where they were absent showed temperatures differences approaching five degrees Fahrenheit in corn and as much as eight degrees Fahrenheit in soybeans. Warmer temperatures in weed free areas may not seem significant, until stands are reduced by below optimum soil temperatures due to weed pressure.

Winter annual weed presence also led to reductions in soil moisture content at planting. When weeds were removed via fall or early spring pre-plant herbicide applications, soil moisture content at corn planting was as much as 13 percent higher and up to six percent higher at soybean planting time. With ample moisture that may not be a penalty. If the spring is dry, however, it might become more important.

Fertility levels may be impacted, too. Kansas State University research into nitrogen uptake by winter annuals (14 sites) showed an average N uptake of almost 16 pounds per acre. Weed pressure also affected developing corn plants the following spring.

Winter annual weeds (henbit, pennycress, shepherd's purse, etc...) can result in pest issues, too, serving as alternate hosts for soybean cyst nematode with henbit also found to be an attractant for black cutworm moths. A soybean study showed insect populations 10 times greater in soybean stands when winter annuals were left uncontrolled until seven days before planting.

There are many factors (cost...time...etc...) influencing whether a fall weed control program is worth it, but this work underscores how it's not all about the weeds. Want more information? A couple of recent KSU Agronomy eUpdate (<https://eupdate.agronomy.ksu.edu/>) articles by KSU Extension Weed Management Specialist Dr. Sarah Lancaster outline some fall options to consider. They are also available upon request from any District Office.