# Researchers look for genetic clues to combat herbicide resistant weeds

On Colorado's eastern plains, increasingly resilient strains of kochia have created a headache for both researchers and farmers.

At Colorado State University in Fort Collins, thousands of kochia samples collected on the Front Range grow in greenhouses run by the Department of Bioagricultural Sciences and Pest Management.

Here, researchers hope to find genetic clues on how to manage a species that now resists the industry's most effective herbicides, including glyphosate, known commercially as Roundup.

The advent of Roundup for crop control has brought a long list of benefits for farmers, CSU professor Scott Nissen said, including savings in fuel and water, as well as a reduction in soil erosion.

While the system has proven easy and effective, Nissen said reliance on a single control system has created an ideal environment for the strongest strains of kochia.

The ability to withstand Roundup has always existed in kochia's gene pool, Westra said, clarifying that so-called "super weeds" are not a creation of herbicides. Rather, these resilient strains have thrived in the absence of competition.

"There can sometimes be a misconception that herbicide use is creating these individuals or doing something to the genes," Westra said. "A lot of the resistance is naturally occurring in these populations, but with really low initial frequency."

As weaker strains succumb to herbicide applications, stronger strains are then left with more room to leave their seed and continue rolling across the plains.

As herbicide resistance spreads, CSU weed researcher and assistant professor Todd Gaines said the issue will need to be addressed not only in Colorado, but worldwide.

**The GLP aggregated and excerpted this blog/article to reflect the diversity of news, opinion and analysis. Read full, original post:** CSU researchers tackle super weeds tumbling across the Colorado plains