



Corn & Soybean News

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We will build again at Princeton

We will build again at Princeton. Our commitment to western Kentucky and the entire region remains. The Category EF-4 tornado on December 10, 2021 damaged 49 of the 59 structures at the Research and Education Center. Forty-one of those structures were destroyed or damaged beyond repair, including barns, sheds, shops, houses, and the main building. The main building, which was recently renovated and expanded, received a direct hit from the tornado.

Cleanup is underway. Temporary offices are less than four weeks away. Temporary laboratories are coming as well. Two separate crews have been hired to assist with the cleanup and demolition of structures beyond repair. Assessment of the full extent of damage is ongoing. Equipment manufacturers and retailers are evaluating or will be evaluating the impact on our farm and research equipment. Much of the research equipment, like planters, sprayers and harvesters, are built-to-order. Those will likely take longer to assess than the commercial equipment. We know some tractors were lost, some will require major repairs, and some will require minimal repairs.



After taking a direct hit from the Dec. 10, 2021 tornado, plans are already underway to rebuild the University of Kentucky Research and Education Center at Princeton. Photo courtesy of UK Ag Communications.



Shown above was the UKREC's lobby entrance and the office wing for faculty and staff. Photo courtesy of UK Ag Communications.

The entire station is about 1,300 acres of field crops, horticulture crops and pastures/hayfields. We think debris was on about 95% of it after the tornado. There is about a three-quarter-mile path through the woodlands. We lost miles of fencing. Some of it was ripped out, posts and all, while other sections were taken out by trees, and in others the wires are gone but the posts remain. The beef crew and neighbors acted quickly to get cattle back into secure paddocks.

The main building housed research labs and service labs like the soil testing lab. For now, soil samples from western Kentucky will go to Lexington where that soil testing lab will have about a 40% greater workload. The same is happening with the Plant Disease Diagnostic Laboratory. We hope the temporary labs will help both service labs gain some function. Some of our research was lost. Graduate students who were working in those labs will be able to continue once the temporary labs are in place. Again, we do not know the full function of those labs.

We expect that some field research across all crops and livestock will be disrupted this spring. Debris must be removed, equipment function determined, and temporary laboratories established before we can understand the full impact on research we face. At least the forages and wheat are mostly dormant, and we hope debris removal will have minimal impact on results in those studies.

Amongst the rubble and ruin, we think we were able to save much of the research data on computers. We were able to save some of the data and notes written in lab books. The restored Farmall Cub tractor, which was one of the first tractors used at the station, has some bumps and bruises, but is mostly intact. The restored Allis-Chalmers 333 "No-Til" planter, a version of the first commercially accepted no-till planter, has broken seed boxes, but the frame and tires are sound. Some "new" seed boxes and a thorough cleaning should be about all that is needed.

Several volunteers were extremely helpful in removing debris, helping us gain access to some equipment, securing solar panels, working with adjusters, securing temporary offices and storage, and hauling water for beef cattle. Others have donated gloves, tools, and temporary fencing. Early on, some people stopped by with boxed lunches for whomever was working. Some farmers have donated their time

and that of their employees. They have burned their fuel, punctured their tires and put wear and tear on their equipment to help us. We appreciate the generosity of our neighbors and friends.

The Research and Education Center was established because of the demand by local farmers and citizens to see applied research in western Kentucky. Buildings and people followed because of our commitment to the people we serve. The Grain and Forage Center of Excellence brought the most recent renovation and expansion. That happened only because of farmers and citizens across Kentucky asking for it to happen – and helping us make it happen. We will build again in Princeton. We are here for you. We are here because of you.



Shown above is what was the interior entrance to the conference center gallery at the UKREC. Photo courtesy of UK Ag Communications.



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Considerations for spring burndown strategies when herbicides are in short supply

Note: This article represents the combined thinking of weed scientists from Indiana, Kentucky, Michigan, Ohio, and Pennsylvania.

There is a lot of speculation about herbicide shortages for the 2022 growing season, and some products are apparently getting more expensive and/or scarce now. This will affect herbicide buying and weed management decisions for the 2022 season. The two main active ingredients that we're hearing about right now are glyphosate (Roundup, others) and glufosinate (Liberty, others), for which prices have increased substantially. There will likely be limited supplies of other pesticide active ingredients as well, but in the short term, a shortage of these two active ingredients poses some major challenges for corn and soybean production. The purpose of this article is to discuss ways to minimize the impact of herbicide shortages, primarily glyphosate, on corn and soybean production. As you search for alternatives to these two herbicides and others, the weed control guides and technical guides produced by University Extension and industry are an important tool for planning weed management programs and herbicide purchases. Links to the University publications are at the end of this article.

Some guiding principles:

The following are based on our experience that may help with decisions, especially where glyphosate will not be in all applications:

1. Spring tillage can be an option to replace herbicide burndown. Although, this can cause long-term compaction problems if tilled when too wet. Waiting until weeds are large makes tillage less effective. Weeds that survive tillage will be difficult to control with POST herbicides.
2. Where it's only possible to use glyphosate once, it may be needed most in the burndown. Saflufenacil (Sharpen) can be added for enhanced control of rye and ryegrass, and marehail. ACCase herbicides (e.g. clethodim (Select, etc.), quizalofop (Assure II)) can be then used for POST grass control in soybeans. Glufosinate (Liberty, etc.), Enlist Duo, or XtendiMax/Engenia can be used for many broadleaf weeds, especially the glyphosate-resistant ones. Where residual herbicides are omitted, or do not provide enough control, we would expect POST treatments to struggle more in the absence of glyphosate with weeds such as lambsquarters (So use residuals). Glyphosate is still more than just a grass herbicide.
3. If glyphosate is omitted from burndown, grasses become a bigger issue than broadleaf weeds. Options for annual grasses: Gramoxone; rimsulfuron (Resolve Q, Realm Q, etc) – when small (corn only); ACCase herbicides – clethodim (wait 7 days to plant corn), quizalofop (soybeans only) – need 60 degree days, apply alone if possible, weak on winter annuals under cold conditions. Where trying to reduce glyphosate rates, a rate of 0.38 lb ae/A will control most annual grasses.
4. Burndown programs typically contain two to three “burndown” herbicides in order to ensure control of a diversity of weeds under various environmental conditions. This is why glyphosate is not used alone in burndown

programs, but mixed with 2,4-D, dicamba, or Sharpen. We suggest following this same strategy when glyphosate is omitted – try to have at least two herbicides with substantial burndown activity in the mix. Increasing rates of components of the burndown mix should be generally helpful, in accordance with label guidelines for soil type, weed size, time until planting, etc. There are also other herbicides that can improve control in some mixes although we don't consider them "burndown" herbicides on their own – chlorimuron, atrazine, metribuzin.

5. There are generally more options for burndown and POST applications in corn compared with soybeans, so it might make sense to save a limited supply of glyphosate and glufosinate for use in soybeans.

6. Control of little barley and annual (Italian) ryegrass in a burndown requires glyphosate; ACCase herbicides are not good enough in spring. For annual bluegrass – ACCase can work - 60 degree day, no tank mixes. High rates of metribuzin can provide fair control of bluegrass.

7. For burndown of a legume cover prior to corn, clopyralid and dicamba are the most effective herbicides. For cereal rye, Gramoxone plus atrazine or metribuzin may be best option in the absence of glyphosate.

8. In some situations it may be possible to cut a cover crop for haylage or silage, then use glyphosate POST to kill regrowth. The addition of an ACCase herbicide may help control regrowth in soybeans. POST corn herbicides will not kill the rye, including nicosulfuron, rimsulfuron, and Group 27 herbicides (Impact, Shieldex, Laudis etc).

9. Mixing ACCase herbicides with dicamba or 2,4-D (no glyphosate) can cause reduction in grass control due to antagonism. Apply separately to avoid this.

10. Increasing the number of applications can help with weed and herbicide management when certain products are short or glyphosate rates need to be reduced. For example, three applications instead of two: 1) Fall or early spring burndown when weeds are small; 2) residuals plus possibly additional low-rate burndown at planting; 3) apply POST treatments.

11. Best opportunity to omit glyphosate or reduce the rate will be: 1) in fields treated the previous fall, or those with a low population of small weeds; and 2) where the POST program is comprehensive enough to control weeds that escape the burndown – Enlist, XtendiFlex, LL GT27 (their effectiveness also depends upon whether glyphosate is being used POST).

12. Take all necessary steps to maximize herbicide activity - optimize adjuvants and sprayer set up (nozzles, volume, pressure, speed) per label guidelines.

13. Check on availability of premix herbicides that may contain glyphosate or another herbicide that is unavailable as a single ingredient product. Examples that contain glyphosate – Sequence, Expert, Halex GT, Acuron GT, Extreme, Flexstar GT.

Burndown programs that deemphasize use of glyphosate – pros and cons.

Can be used in corn and soybeans

Gramoxone (paraquat) + 2,4-D + metribuzin/atrazine (atrazine – corn only)

Strengths: best non-glyphosate option for rye burndown; adequate for general spring weeds including maretail <6" tall; can be applied before either corn or soybeans (depending on rate); has activity on grasses

Weakness: perennial weeds; large maretail; annual ryegrass; special training required to apply paraquat

Comments: Metribuzin rate for corn varies by soil type and is limited to a maximum of 5.33 oz of 75DF.

Sharpen + glyphosate (low rate 0.38 - 0.56 lb ae/A) + 2,4-D

Strengths: adequate cereal rye and other cover crop burndown; maretail control; can be applied before either corn or soybeans (depending on rate)

Weakness: large weeds; overall weed control is fair due to low glyphosate rate

Comments: Rates higher than 1 oz require wait of 15 to 30 days to plant soybeans. Must wait 2 weeks to plant soybeans if 1 oz is mixed with flumioxazin or sulfentrazone product.

Sharpen + 2,4-D + metribuzin/atrazine (atrazine – corn only)

Strengths: good foliar and residual maretail control; good initial Palmer/waterhemp control; burndown and residual in one pass

Weakness: does not control grasses (atrazine control grass up to an inch when applied with oil); must wait 2 weeks to plant soybeans if mixed with flumioxazin or sulfentrazone product. Metribuzin rate for corn varies by soil type and is limited to a maximum of 5.33 oz of 75DF.

Leadoff/Crusher/other rimsulfuron products + 2,4-D + metribuzin/atrazine

Comments: some grass control; limited burndown activity on several key species; better used in corn due to long wait to plant soybeans (15 to 60 days)

Harmony Extra/similar products + 2,4-D + metribuzin

Comments: average (70-80%) control on many key broadleaves; no grass control; additional residuals and POST products necessary for in crop weed control; can be used in corn or soybean

Corn only

Acuron/Lexar/generic equivalents/Resicore + atrazine

Strengths: winter and summer annuals; burndown and residual in one-pass; can add more atrazine or 2,4-D

Weakness: poor control of cereal rye and ryegrass; corn only

Soybeans only

2,4-D + metribuzin + clethodim

Strengths: some grass suppression including cereal rye and ryegrass;

Weakness: 2,4-D antagonizes clethodim activity; cool weather limits clethodim activity; use rate of clethodim is not high enough if used before corn planting

Metribuzin + 2,4-D + chlorimuron product

Comments: good fit in fields that were treated prior fall; Some chlorimuron products contain metribuzin – suggest supplementing with additional metribuzin so total is the equivalent of 6 to 12 oz 75DF. Does not control grasses. Canopy EX/Cloak EX contains tribenuron, which improves control of chickweed.

Additional Resources

["2022 Weed Control Recommendations for Kentucky Field Crops"](#)



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KATS January workshop focuses on fertilizer costs

The University of Kentucky KATS program will be holding an interactive workshop in response to rising fertilizer costs. "Approaches to Dealing with High Fertilizer Prices" will be held at the Caldwell County Extension office in Princeton on January 27, 2022, from 9 a.m. until noon, with a provided lunch to follow.

Information and the registration link can be found at <https://kats.ca.uky.edu/upcoming-workshops> or you can contact Lori Rogers lori.rogers@uky.edu or 270-625-2143.



*** Change of Date! ***

2022 Winter Wheat Meeting

February 8th 9:00 am - 3:00 pm (C S T)

**The Bruce Convention Center
303 Conference Center Drive Hopkinsville, KY 42240**

Pre-registration Required by 1-25-2022

<https://www.eventbrite.com/e/2022-kentucky-winter-wheat-meeting-tickets-234478109337>

2022 IPM Training School scheduled March 9

The outreach programs of the UK Research and Education Center at Princeton are on schedule for 2022 in spite of the devastation of our facilities from the December 10, 2021 tornado. Our commitment to students, farmers, consultants, and all Kentucky communities strengthens our determination to continue providing education that will contribute to successful agriculture in the region.

The 2022 Integrated Pest Management School Training will be held in person on March 9 at the UK Christian County Extension Office (Hopkinsville, KY), and livestreamed via Zoom.

To attend either in person or virtually, it is necessary to register at [2022-IPM](#). Ten UK-College of Agriculture, Food and Environment specialists will present and discuss updated findings on diverse topics about field and horticultural crop production arranged in two sessions. Pesticide applicators and Certified Crop Advisers will receive CEUs for each attended session. Your active participation makes us stronger.

2022 Upcoming Events



<u>Date</u>	<u>Event</u>
January 26	Ag Expo—Daviness County
January 27	KATS - Approaches to Dealing with High Fertilizer Prices
February 8	Winter Wheat Meeting
March 9	IPM Training School
May 10	Wheat Field Day
June 30	Pest Management Field Day
July 21 or 26	Corn, Soybean & Tobacco Field Day
July 28 (tentative)	High School Crop Scouting Competition

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