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Corn & Soybean News

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Reminders for postemergence herbicide applications in soybean

Nearly three quarters of Kentucky soybean were planted as of the June 6, 2021 crop progress report with over 60% being emerged. Now that the majority of soybean are in the ground and emerging it is time to start evaluating and thinking about postemergence herbicide applications. Assuming that residual herbicides were applied at planting, farmers can typically expect to need to make postemergence application four to six weeks after planting. Those who have not applied a residual will need to be making applications much sooner if they haven't already. In this article we want to give you a few reminders and tips to assist in maximizing those soon to be applied postemergence soybean herbicides.

Size Matters

Weed size matters and the smaller the better. All postemergence herbicides work best when applied to 2- to 4-inch tall weeds and failures are more likely to occur when applications are made to weeds larger than this size. While the 2- to 4-inch rule should apply to all weed species, it is especially important to remember when dealing with waterhemp and Palmer amaranth. While it is understandable that weather can keep sprayers out of the field for extended periods of time, applications should be made to weeds that are a maximum of 6-inches tall.

Add another Residual

If you're making a postemergence application, then it is likely that either your residual herbicide has broken and is no longer active or you did not apply a residual herbicide. Either way adding a residual herbicide to your postemergence tank mix can bring significant value to the application. Even when using a robust residual herbicide at planting the first postemergence application will likely occur several weeks prior to soybean canopy. A postemergence application with foliar active herbicides will only control what is emerged and allow additional weeds to emerge in the unshaded space between crop rows. The addition of a residual herbicide to the tank mix will suppress further weed emergence in these spaces and can potentially get the field to canopy and eliminate the need for a second postemergence application.

Residual herbicides that can be applied postemergence in soybean include the group 15 herbicides: S-metolachlor (Dual II Magnum, Prefix, and many others); pyroxasulfone (Zidua, Anthem Maxx, and Perpetuo); dimethenamid-P (Outlook); and acetochlor (Warrant and Warrant Ultra). The group 15 herbicide can be especially beneficial on fields dealing with small seed broadleaves and grass species.

Residual herbicides all have maximum cumulative rates that can be applied per growing season. If you plan to apply a residual herbicide postemergence that contains the same active ingredient as was applied in your preemergence application, make sure you will not be exceeding this limit.

Double Check Herbicide Traits

It may seem silly or even redundant, but double check the soybean variety and herbicide traits prior to postemer-

gence application in every field. We are all humans whose memories can fail us especially when trying to remember things from a busy time of year such as planting season. An extra minute double checking the soybean herbicide trait can go a long way in preventing a replant situation.

Check your surroundings

While you are checking the herbicide traits of the soybean in the field to be sprayed, also take a moment to check your surroundings and the weather. While dicamba has certainly received a lot of attention the last five years when it comes to off-target movement, all herbicides have the potential to move off-target. Double check surrounding fields and identify any potential susceptible plants and if the current weather conditions will allow for an application to be made without effecting those susceptible plants.

Glufosinate likes it Hot and Sunny

The use of glufosinate for postemergence applications is likely to be on the rise this season with numerous trait packages now available with glufosinate tolerance. Those who have not applied glufosinate in the past need to keep a few things in mind to maximize this herbicide.

1. Glufosinate is maximally effective when applied on hot sunny days, which is typically achievable in Kentucky.
2. Avoid applications of glufosinate during extended periods of overcast cloudy conditions.
3. Avoid applications of glufosinate in the late afternoon and evening.
4. Glufosinate is a contact herbicide and thus coverage is critical for maximum performance. Apply with nozzles that produce medium to coarse droplets and apply at a spray volume of at least 15 gallons per acre.

June 30th Cutoff for Dicamba

There were a number of additional restrictions placed on the latest registration of the dicamba herbicides for postemergence applications to dicamba tolerant soybean. One of the restrictions was a cutoff date of June 30th, after this date regardless of soybean growth stage dicamba is no longer allowed to be applied to soybean.

Sprayer setup is as important as product selection

While selecting the right herbicide(s) and applying at the right time are all very important, many times nozzle selection and sprayer setup can be the difference in a successful and unsuccessful herbicide application.

Selecting a nozzle for postemergence herbicide application depends on the type of herbicides being applied and the need for drift reduction. Systemic herbicide such as glyphosate, 2,4-D, and dicamba do not have to have maximum coverage to perform and thus can be applied with low-drift nozzles to reduce the potential of off target movement. Products such as dicamba and 2,4-D can only be made with nozzles that are listed on the product label that reduce the potential for drift.

Applications that contain a contact herbicide such as glufosinate should be made with nozzles that produce medium to coarse droplets. Contact herbicides need maximum coverage and thus nozzles that produce extremely coarse and ultra-coarse droplets should be avoided.

In either case if coverage is a major concern, then spray volume should be increased to help increase coverage. Research has consistently found that spray volume has as much if not more of an influence on coverage as compared to nozzle selection and droplet size. So, if coverage is needed, such as with contact herbicides, applicators should strive to apply 15 to 20 gallons per acre to assure adequate coverage.



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Soybean Gall Midge, the “new pest” of soybeans in the Midwest, still not detected in Kentucky

Problem

The soybean gall midge, *Resseliella maxima* (Diptera: Cecidomyiidae), is a relatively new pest in this crop. Although some findings have been reported since 2011 ([CropWatch](#)), large populations were noticed in plants located at the edges of soybean fields by late June of 2018 in Iowa, Nebraska, Minnesota, and South Dakota (Figure 1). A total of 65 counties were affected in these states. A recent report showed that soybean gall midge is spreading rapidly, reaching 144 counties by September of 2020, including two western counties in Missouri (Atchinson and Holt) (Figure 2). **Thus far, the soybean gall midge has not been detected in Kentucky.**

In 2018 and 2019, infestations were much earlier than previous reports. In late June infested soybean plants were already showing signs of necrosis and wilting and, there were documented yield losses of up to 90% to 100% in those border plants, and yield loss averages reached up to 30% in some infested fields in 2018.



Figure 1. Soybean plants showing soybean gall midge damage in field edges. (Photo by University of Nebraska Lincoln)

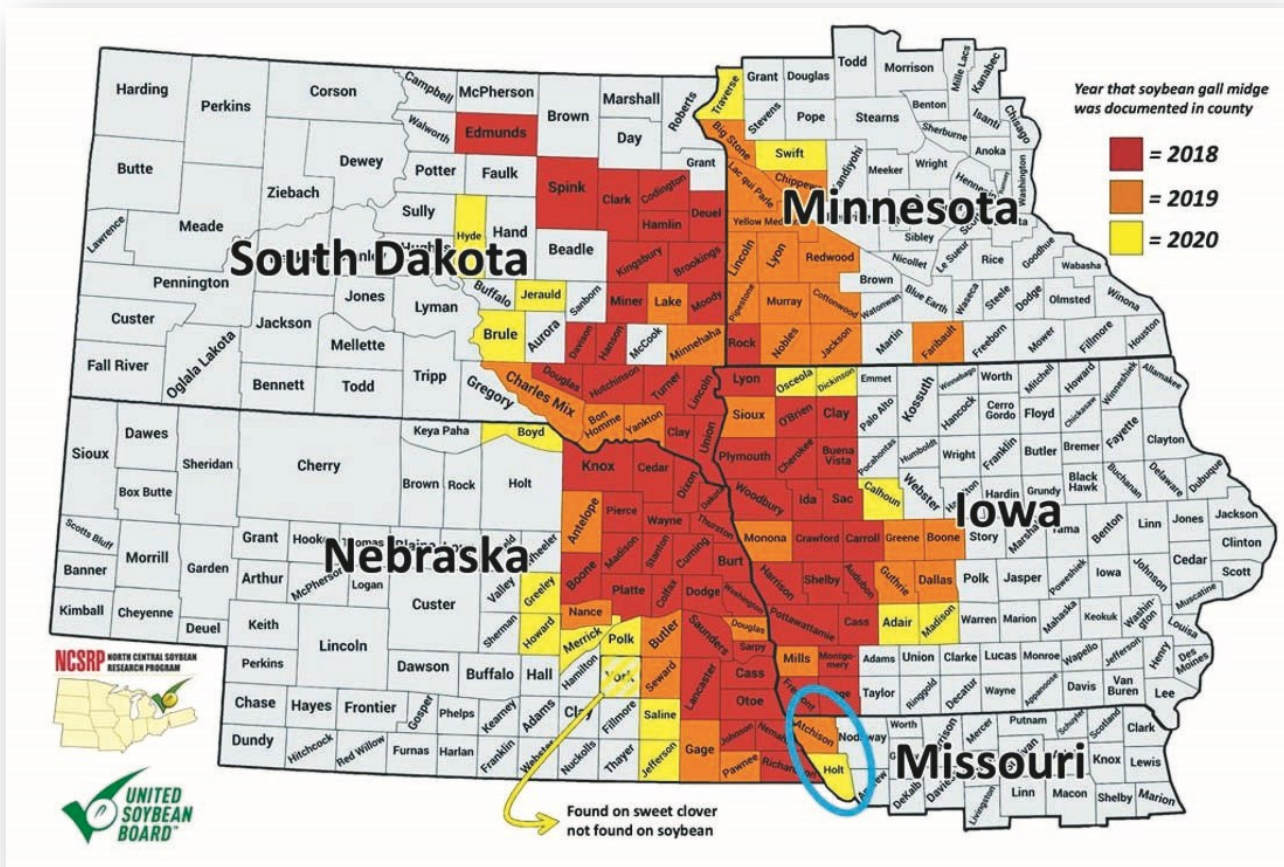


Figure 2. Geographical distribution of the soybean gall midge. Atchison and Holt counties (encircled in blue) in northwest Missouri are the closest locations to Kentucky. (Photo source [Soybean Gall Midge Alert Network](#))

Affected soybean plants have dark marks in the stem near the soil surface (Figures 3a and 3b) that can extend up to the unifoliate node. Symptomatic plants easily snap off near the soil surface and white to orange maggots are found feeding within the darkened area of the plant stem (Figure 4).

Life Cycle

Eggs are laid at the base of soybean plants at the V3 stage or later, and larvae (1/8 inch or < 3 mm) enter stems. It has three larval instars. The 3rd instar soybean gall larvae overwinter in the soil as silken cocoons that pupate in late spring. Adults start to emerge in early to mid-June and can be seen for 6 to 8 weeks in the field in Nebraska. Adults are small slender flies, ¼ inch (6 mm) in length (Figure 5). They can be recognized by black-and-white stripes on the legs, orange abdomens, and mottled wings; however, adults are rarely observed in soybean fields. Current research suggests they have at least two generations per year in the Midwest. To have an idea of its size and body shape, the soybean midge is in the same family (Cecidomyiidae) as the Hessian fly, *Mayetiola destructor* or the sorghum midge, *Contarinia sorghicola*; in both species the adults are 1/8 and 1/10 inch long, respectively.



Figure 3. Soybean plant with (a) dark discoloration at the base of the stem and (b) the presence of orange gall midge after removing outer plant tissue. (Photos by J. McMechan, University of Nebraska –Lincoln)



Figure 4. Soybean gall midge larvae. Earlier instars are whitish, and later instars are orange to red (Photo by J. McMechan, University of Nebraska Lincoln)

Management

The soybean gall midge is an insect that is difficult to manage due to its feeding behavior. The midge or larva dwells inside the stem where it feeds on inner tissues and is protected from pesticides (Figures 2 and 4). Insecticides used to control this pest are limited. Research conducted in Nebraska by Dr. Justin McMechan in 2019 showed that pyrethroid insecticides applied within 10 days of adult emergence may yield benefits. However, adult flies (Figure 5) have a prolonged emergence period, thus repeated applications of insecticides can be economically costly.

Cultural practices can be tools that may be used by farmers. McMechan reported in 2019 that late planting soybeans (late June) did not show infestations compared to earlier planting dates in Nebraska. He reported that maturity groups 1 and 2 showed visible signs of damage at or near the soil surface, whereas groups 3 and 4 showed signs of plant damage in the axils of the trifoliolate leaves approximately 6-8 inches from the soil surface.



Figure 5. Adult midge, approximately ¼ inch in length with an orange abdomen (not visible under the wings). A key characteristic is the black and white banding on its legs. (Photos by Justin McMechan, University of Nebraska Lincoln).

More Information

[Soybean Gall Midge Alert Network](#)

[Soybean gall midge in Minnesota soybean](#) - University of Minnesota

[Soybean Gall Midge and White-mold Gall Midge in Soybean](#) - North Dakota State University

[Soybean Gall Midge: What We Know So Far](#) - South Dakota State University

[Soybean Gall Midge Updates and Tools for 2021](#) - University of Nebraska-Lincoln

[Soybean Gall Midge](#) - University of Missouri





Registration now underway for University of Kentucky Pest Management Field Day at the UKREC

The University of Kentucky Weed Science Program is happy to announce the 2021 Pest Management Field Day will be held on June 29, 2021 at the UKREC in Princeton, Kentucky. The field day will begin at 8:30 a.m. and wrap up by 12:30 p.m., with box lunches to go.

Pre-registration is required to attend the field day. This step is necessary to assure that the field day can be coordinated to keep all attendees and speakers safe as we return to in person field days. You can pre-register as an individual or register numerous individuals at your company through this link (https://uky.az1.qualtrics.com/jfe/form/SV_5BgpJFU60VoyCSa) or you can call (270) 365-7541 Ext. 0. Registration for the field day closes on June 27th.

The field day will include plot tours of weed science research in corn and soybean, plot tours of waterhemp and Palmer amaranth control research, as well as research updates from University of Kentucky plant pathology and entomology specialist.

Pre-registration links can also be found on the University of Kentucky Weed Science website. You can also follow @TravisLegleiter on Twitter for further updates on the field day.

CCA CEU credits and PAT credits will be requested.

Any questions can be directed to Dr. Travis Legleiter (Travis.Legleiter@uky.edu).



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SAVE THE DATE

July 27, 2021



Corn, Soybean & Tobacco Field Day

8:00 am to 12:30 pm (central time)

Registration at 7:30 am

UKREC Farm, Princeton KY

Cooperative Extension Service
Agriculture and Natural Resources
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LEXINGTON, KY 40546



Disabilities accommodated with prior notification.



Useful Resources



2021 Upcoming Events



<u>Date</u>	<u>Event</u>
June 15	KATS – Forage Workshop
June 29	Pest Management Field Day
July 15	KATS –Spray Clinic
July 22	UK 2021 High School Crop Scouting Competition
July 27	2021 Corn, Soybean and Tobacco Field Day
TBD	KATS – Developing Management Zones for Soil Sampling (online, interactive)
TBD	KATS – Self-Led Educational Plot Tour (in person)

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