



Corn & Soybean News

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COLLEGE OF AGRICULTURE, FOOD AND ENVIRONMENT
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Watch Corn Water Use Over the Next Few Weeks

At the posting of this newsletter, most of Kentucky received up to 1 inch of water from heavy storms that passed through the state. That water will be extremely helpful as we go into what is forecasted as two more weeks of very hot weather. The next two weeks could provide us with some strong indicators of corn yields this fall.

Corn water use increases from emergence to about V15 where it peaks until about R2 (blister stage) and then starts to drop off after that. At peak water demand, corn likely uses about 0.25 to 0.33 inches per day in our region. Air temperature, humidity and cloud cover all affect how much water is lost each day. Corn that is pollinating is the most sensitive to water stress.

Last year, about 20% of the Kentucky corn crop was pollinating by July 1. The 5-year average is closer to 35% of the corn crop pollinating by July 1. Corn planting was delayed a bit this year, but it is reasonable for us to assume that at least 15% or more of the corn crop will start pollinating in the next 10 days.

No-till and strip-till fields may be at an advantage over the next two weeks. Before corn gets tall enough to cover the rows, some water loss occurs from the soil. This evaporation is greater on tilled fields. Fields in no-till, strip till, and/or with excellent residue cover usually have less evaporation right now. Once the corn crop covers the rows, nearly all water loss is from the corn plants. That type of loss is transpiration. At this point, residue cover on the soil is less important than it was when corn plants were smaller. Deep roots are extremely important for the corn crop from here to the physiological maturity. Deep roots can access more water than corn plants with stunted roots from sidewall compaction or subsurface compaction. We may find out which fields were planted “just a bit too wet” this spring.

Farmers who can irrigate should be watching soil moisture and crop growth stages closely. Irrigation may need to begin in some areas where corn is farthest along. Irrigation should not overwater the field. Both dry soils and saturated soils can hurt pollinating corn. Soil moisture sensors can help greatly in targeting proper irrigation amounts.

Most farms do not have irrigation. In these fields, the heat and possible water stress are a matter of timing. Corn plants closest to pollination are likely at greatest risk over the next two weeks. Corn plants at earlier growth stages are a little more resilient. If irrigation is not an option, all we can do is watch the fields closely and monitor pollination success in a few weeks.



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Postemergence Herbicide Applications in 2022

Kentucky soybean planting is quickly wrapping up and the majority of corn has or is receiving a postemergence herbicide application as it quickly advances in growth stages. Postemergence applications on soybean will soon begin if they have not already begun. In this article we want to give farmers a few reminders when making postemergence applications in soybean. This year, more than ever before, farmers and applicators will need to focus on the small details as there may not be many second chances this year with the ongoing herbicide shortage.

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. This is especially important this year, with many farmers relying on tank mixes of selective herbicides to achieve weed control in the absence or lack of availability of glyphosate and glufosinate. Glyphosate can be very forgiving and can control weeds much larger than the recommended 2- to 4-inch height, but many of the alternative herbicides that will be going out this year are not be as flexible and forgiving. 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 as soon as possible to capture the weeds at their smallest size.

Check Tank Mix Compatibility

As discussed above many applicators and farmers will be forced to use tank mixtures of selective herbicides in the shortage of broad-spectrum herbicides such as glyphosate and glufosinate. If you are using a tank mixture of selective herbicides, make sure to check that the products are both physically compatible and will not antagonize each other's activity. A combination that is often considered in the absence of glyphosate and glufosinate in auxin resistant soybean (RR2Xtend, RR2XtendFlex, and Enlist E3 soybean) is a group 1 herbicide (i.e. Select or Assure) with a group 4 herbicide (Xtendimax or Enlist One). In this combination the group 4 herbicides can antagonize the herbicidal effects of the group 1's on (loss in control as compared to when applied alone) on certain grass weed species. Although the antagonism can be overcome by choosing either the correct rate structure or separating the application of products. The appropriate rates to overcome the antagonism can be found in the herbicide labels.

Postemergence Residuals Needed in 2022

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. 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. This can be especially important with the ongoing herbicide shortage.

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 postemergence 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 affecting those susceptible plants.

Sprayer setup is critical

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, although coverage is still important. Products such as Xtenimax, Engenia, Enlist Duo, and Enlist One can only be made with nozzles that are listed on the product label that reduce the potential for drift. There are a number of nozzles now available that can reduce drift potential while still achieving the coverage needed for maximum systemic herbicide activity.

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, applicators should strive to apply 15 to 20 gallons per acre to assure adequate coverage for maximum control.



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Thrip damage observed in seedling corn in 2022

Description of the problem

While scouting for insects affecting corn and soybeans in early stages of development, large numbers of thrips were observed in corn seedlings (>20 thrips per plant) (Figure 1A-C). Corn plants with thrips were observed in fields near the Cumberland River in Livingston County during the last week of May but as usual, rainfalls reduced thrip populations. However, the absence of rain and high temperatures in the area during mid-June have increased these populations again. Thus, thrip infestations were observed in both corn and soybeans planted in Caldwell and Lyon counties.

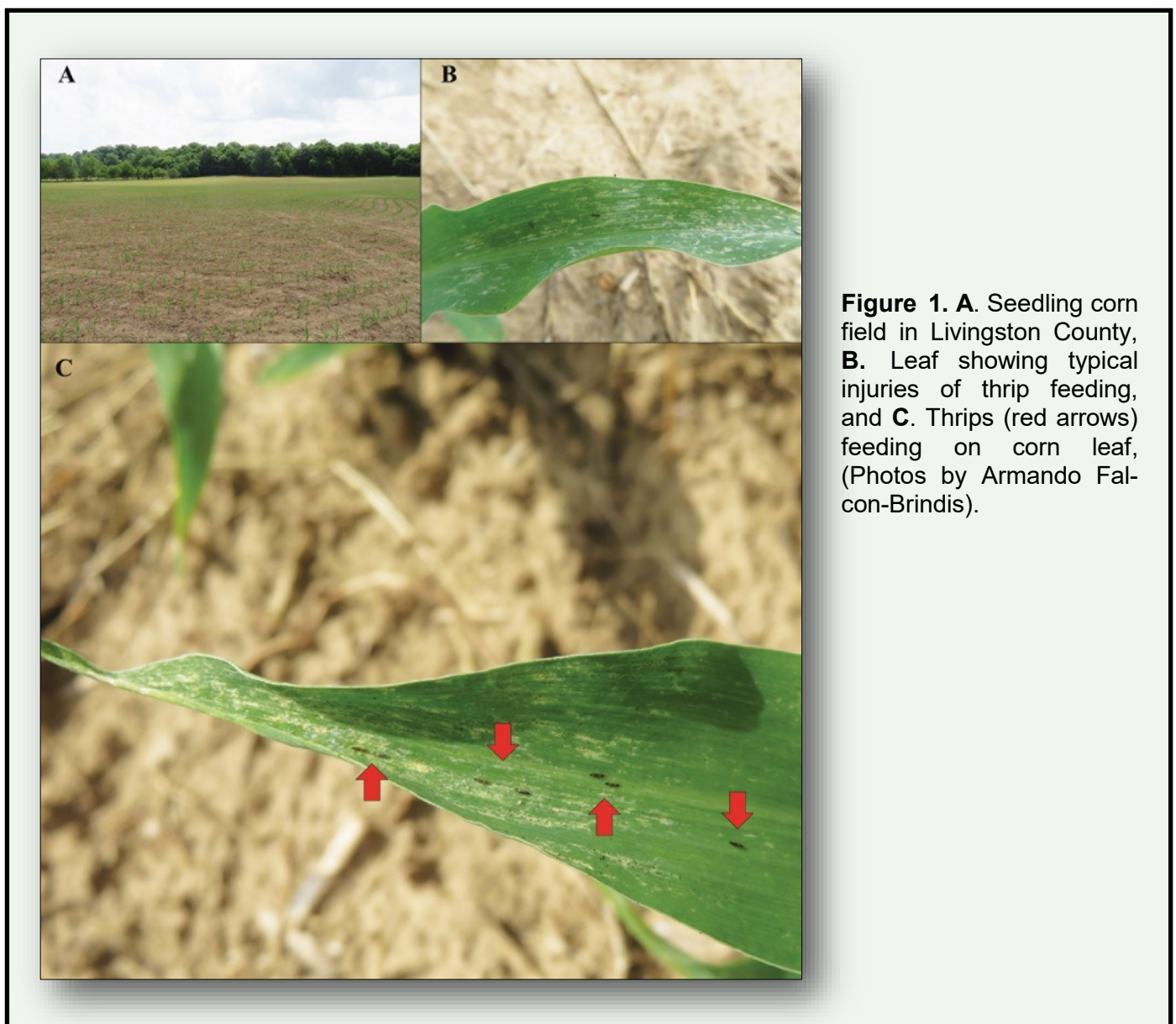
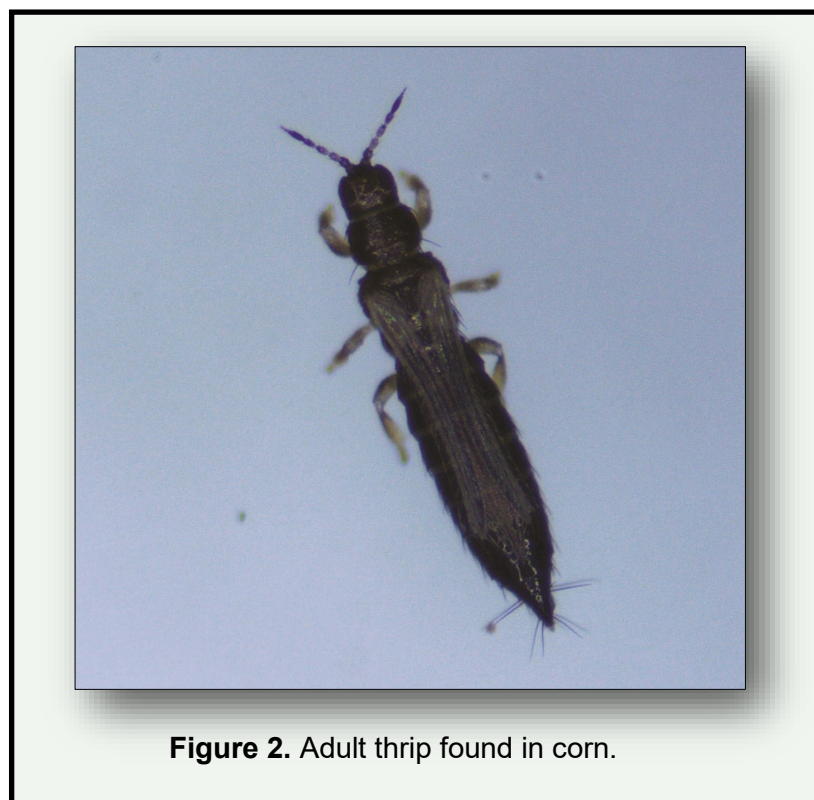


Figure 1. A. Seedling corn field in Livingston County, B. Leaf showing typical injuries of thrip feeding, and C. Thrips (red arrows) feeding on corn leaf, (Photos by Armando Falcon-Brindis).

Farmers and scouting personal should be aware of the presence of this pest. Although this insect does not require application of insecticides for its control sometimes damages are noticeable. Usually, corn seedlings outgrow the injury and insecticide applications are not necessary. Adult thrips are small (1/16 inch long), have two pairs of feather-like wings, and are dark in color (Figure 2). The immature instars or nymphs are yellow or orange.




Both nymphs and adult thrips suck out cells of leaves using their mouth parts. This feeding causes longitudinal, whitish scars that, a great number of thrips, result in entire leaves or even plants appearing desiccated. Damages are more severe when rains are absent or extended periods of hot, dry conditions.

Management

If drought persists for long periods, plants may become grayish in color and wilt. Severe thrips outbreaks in seedling corn can stunt plants, and insecticide treatment may be justified. The economic threshold for this insect is not established in Kentucky. Thrips populations can be reduced by heavy rains hence insecticide applications may not be necessary.



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Corn and Soybean Field Day and Farm Tour set for July 26

The summer field days have been cancelled at Princeton however this gives the UK Grain Crops Group an opportunity to showcase some of our research being conducted on other farms in Kentucky. Our team will highlight research efforts at two farms that we will visit. Topics range from agronomics, foliar fertilizers, cover crops, variable rate nitrogen, plant diseases, current insect issues, grain storage and more. Most of the research being discussed at the field day tour was funded in part by the Kentucky Soybean Board and the Kentucky Corn Growers Association.

The tour will start at Fresh Start Farms in Larue County where Ryan Bivens will host us at the main driveway to the farm. Then, we will move to a field of Richard Preston Farms in Hardin County. Our final slate of speakers will be at the Hardin County Extension Office where we will also enjoy lunch. The farm tour gives each of you a chance to see some crops on other farms in Kentucky.

Christian County farmer and Kentucky Corn leader, Joseph Sisk said, "Princeton REC is a cornerstone for applied agronomic research and a vital facility for practical learning. We understand the decision to shift UK's summer field day from Princeton to Central Kentucky and look forward, this year, to a unique opportunity to showcase on-farm partnerships between UK and Kentucky's grain commodity associations. We also believe that it is vital for the rebuild at Princeton that going forward all usual activities occur at the research station. It is important that the farming community witness the extraordinary efforts of the Princeton UK facilities team in the aftermath of the tornado."

We hope you can join us on July 26th. Please watch KyGrains.info for more information.



2022 Upcoming Events

Date

Event

July 26

Corn & Soybean
Field Day and
Farm Tour



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