PURDUE UNIVERSITY

FACTS FOR FANCY FRUIT

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A Newsletter for Commercial and Advanced Amateur fruit growers.

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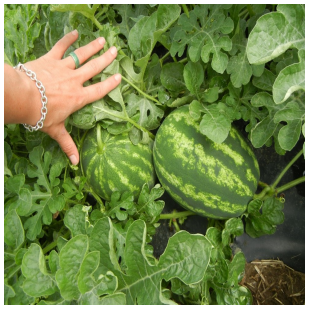
Crop conditions

(Chloe Rose Henscheid, richa267@purdue.edu) & *(Wil Brown-Grimm, wbrowngr@purdue.edu)*

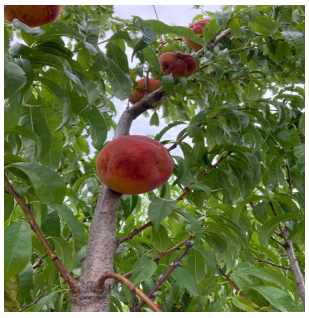
What a wet July we have had so far.. and summer for that matter! The timing and amount of rain has made it difficult to complete cover sprays in a timely manner. Even with all of this rain and limited spray windows, all of our fruit crops have remained disease free. Our peaches and blackberries have been large and juicy! Our apples, grapes, pears, and watermelon are sizing and looking like they will follow suit. Everything is still a few weeks ahead of the last few years, it is looking like an early but plentiful harvest across the board.



Watermelons: Fruit maturity

Pear: Maturation

Apple (Rosalee): Maturation



Peach: First harvest – Ripe fruit

Plum: Maturation

Paw Paw: Maturation

Aronia: Harvest – Ripe fruit

Blackberry: Green to ripe fruit

Black Currant: Harvest – Ripe fruit

Apple (Pixie Crunch): Maturation

Grapes: Veraison

Recent rain improves drought across Indiana

(Beth Hall, hall556@purdue.edu)

Since the start of July, most of Indiana has received at least 2 inches with up to 8 inches of precipitation (Figure 1). Except for southeastern and east-central Indiana, this precipitation has been well above normal (Figure 2). As a result, most locations have seen an improvement in the U.S. Drought Monitor (Figure 3). There are only a few counties categorized as *Abnormally Dry (D0)* with the rest of the state considered to be in *No Drought* status. The recent storms, however, brought a wide range of impacts from power outages and flooding, to downed trees and structural damage, to even a preliminarily designated tornado or two (still under official assessment). We hope that everyone made it through the events safely and any impacts to agricultural production were minimal.

Looking ahead, things should stay dry throughout the weekend with a chance of rainfall returning the first half of next week. Southern and eastern Indiana should benefit the most from those upcoming events. Over the next few weeks, temperatures are expected to stay near normal with a slight probability of above-normal precipitation.

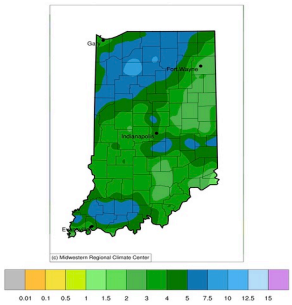


Figure 1. Total precipitation from July 1-17, 2024 in inches.

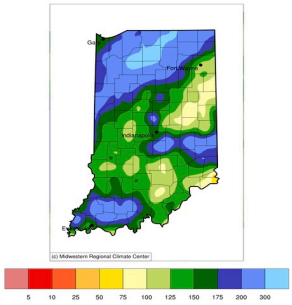


Figure 2. Percent of the 1991-2020 climate normal period for rainfall that fell from July 1-17, 2024.

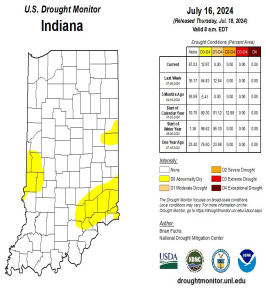


Figure 3. U.S. Drought Monitor for data through Tuesday, July 16, 2024.

Figure 4. Forecasted precipitation total (inches) for July 18-25, 2024.

Weed Spotlight: Yellow Nutsedge

(Stephen Meyers, slmeyers@purdue.edu) & *(Josue Cerritos, jcerrito@purdue.edu)*

Common names: Yellow nutsedge, yellow nutgrass, nut sedge, chufa, earth almond, northern nutgrass

Latin names: *Cyperus esculentus* L.

Family: Cyperaceae (Sedge family)

General Description

Perennial sedges are among the most troublesome weed species globally. Because nutsedges look like grasses (Figure 1), they are often referred to as “nutgrasses”. They can be differentiated from grasses by looking at their stems. Grasses have round or flat stems, but nutsedges have triangular stems (Figure 2). They typically reproduce through tubers, which can remain viable for up to 10 years. However, they are also capable of reproducing by seeds. From April to mid-July, tubers begin to sprout, and seedlings start to emerge. Nutsedges can also be propagated by underground stems called “rhizomes”. They frequently thrive in well-drained, sandy soils as well as in wet locations.

Figure 1. A yellow nutsedge plant taken from a strawberry field. Photo by J. Cerritos.

Figure 2. Nutsedge stems are triangular in cross-section. Photo by J. Cerritos.

Identification and Biology

Several nutsedges species exist, however the most common and troublesome ones are yellow nutsedge (*Cyperus esculentus* L.) and purple nutsedge (*Cyperus rotundus* L.). Both are perennials that spread asexually through

rhizomes (Figure 3). These rhizomes extend from the mother plant to form new shoots or tubers. Tubers are initially rounded, ridged, and white, but they gradually turn brown and black (Figure 4). They form at the ends of rhizomes and can be found within the top 6 inches (15 cm) of the soil profile. These tubers overwinter in the soil and once conditions are favorable, they break dormancy and sprout. Yellow nutsedge leaves are yellow-green, have a long, tapered point and grow in clusters (Figure 5).

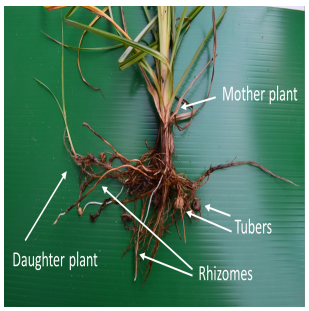


Figure 3. The structure of a yellow nutsedge plant. Photo by S. Meyers.

Figure 4. Yellow nutsedge tubers. Photo by S. Meyers.

Figure 5. Yellow nutsedge plants growing on plasticulture strawberries. Photos by J. Cerritos.

Yellow and Purple nutsedge

They are often mistaken for each other due to their similar appearance. However, yellow nutsedge has yellow-green leaves with leaf blades that come to a sharp point. In contrast, purple nutsedge features deep green leaves that end in an abrupt point (Figure 6). The inflorescence (or flower structure) of yellow nutsedge is straw colored, whereas the inflorescence on purple nutsedge is reddish-purple (Figure 7). In Indiana, yellow nutsedge is far more common.

Figure 6. A purple nutsedge leaf (left) and yellow nutsedge leaf (right). Photo by S. Meyers.

Figure 7. Floral structures of purple (left) and yellow nutsedge (right). Photo by S. Meyers.

Management

Yellow nutsedge can be a challenging weed to control due to its ability to reproduce easily through various propagation methods. Nutsedges can significantly impact crop yield through several mechanisms. They compete with crops for essential resources such as light, water, and nutrients. Additionally, nutsedges exhibit allelopathic effects, releasing chemicals that inhibit the growth and establishment of crops, further reducing overall yield. The strategies that can be deployed will vary with the crop being grown and your production system.

Sanitation and Exclusion:

Because nutsedge can reproduce through plantlets, rhizomes, and tubers, it is important to remove visible nutsedge parts and soil before moving ground-engaging equipment from nutsedge infested fields to those without nutsedge (Figure 8).

Figure 8. Nutsedge plants hang on the back of a sweetpotato harvester and can easily be moved within or between fields without proper sanitation. Photo by S. Meyers.

Mechanical Control:

Cultivation and hand-removal are only effective short-term solutions. Nutsedges can regrow if the plants are not entirely removed, including both the stems and root systems. Cultivation is most effective when performed on small nutsedges that have not yet developed tubers and have underdeveloped root systems. Repeated mechanical tillage can help suppress nutsedge, but there is a risk of spreading the plants and tubers to other fields via the equipment.

In some fruit crops, plastic mulches are used for weed control. However, these mulches do not fully suppress yellow nutsedge, as the plants can grow through the plastic (Figure 9).

Figure 9. Yellow nutsedge plants grow through white plastic mulch in a strawberry field. Photos by J. Cerritos.

Figure 9. Yellow nutsedge plants grow through white plastic mulch in a strawberry field. Photos by J. Cerritos.

Biological and Cultural Controls:

Interestingly, yellow nutsedge tubers are particularly palatable to some animals. In fact, yellow nutsedge marketed as “chufa” is sold to wildlife food plot enthusiasts for turkey. It is said that hogs will root in the soil for the tubers as well. Unfortunately, for perennial fruit crops, the utility of wild or domesticated animals to reduce yellow nutsedge population is impractical.

If your cropping system permits, summer cover crops can be an effective option, as they compete with nutsedge for light, water, and nutrients, which ultimately help to reduce its spread. This may mean cover cropping between rows for tree fruits or after the final harvest of a strawberry patch coming out of production. Choose cover crop species that grow quickly and/or that will grow above the nutsedge canopy. Buckwheat and sorghum-Sudan grass are two common choices, but others will work as well.

Herbicides:

Herbicide options for fruit crops are limited compared to agronomic crops, primarily due to the risk of crop injury and the pre-harvest interval (PHI), which is the required minimum time between pesticide application and crop harvest. However, when available, chemical control using herbicides with active ingredients

like sulfentrazone, halosulfuron, and S-metolachlor can help manage these weeds effectively. Soil-applied herbicides should be sprayed and incorporated before nutsedge emerges. If the label allows it, sequential applications of postemergence herbicides 2 weeks apart can increase nutsedge control compared to a single application. Unfortunately, grass-selective herbicides such as clethodim and sethoxydim do not control nutsedges. Yellow nutsedge is a persistent weed that may require multiple herbicide applications for effective control. Always read the label and follow approved rates and guidelines for application. Consult the Midwest Fruit Pest Management Guide (https://ag.purdue.edu/department/hla/extension/_docs/id-465.pdf) for more information about herbicides registered in the fruit crops you grow.

References

Meyers, S. L., & Shankle, M. W. (2015). Nutsedge Management in Mississippi Sweetpotatoes. Mississippi State University Extension. https://extension.msstate.edu/sites/default/files/publications/publications/p2909.pdf

Neal, J.C., Uva, R.H., DiTommaso, J. M., DiTommaso, A. (2023). Weeds of the Northeast. Second edition by Cornell University.

Purdue Small Farm Education Field Day, July 25, 2024

(Lori K Jolly-Brown, ljollybr@purdue.edu)

Time is running out to register for the annual Purdue Small Farm Education field day!

July 25, 2024, at the Purdue Student Farm, West Lafayette, IN.

The deadline to register is July 22nd at 12:00 p.m. ET.

Register here: Purdue Small Farm Education Field Day

The program is now available. Download HERE.

SF2024_FIeldDay_Demo_Schedule

SF2024_FIeldDay_Demo_Descriptions

Contact Lori Jolly-Brown or Petrus Langenhoven if you have any questions.

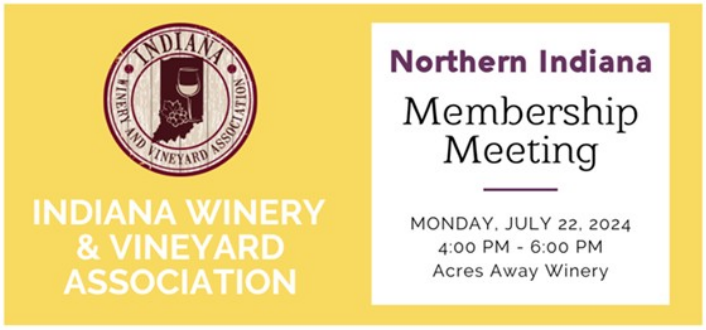
Indiana Vineyard & Winery Association Summer Meetups

(Miranda Purcell, mrpurcel@purdue.edu)

Indiana Winery & Vineyard Association Membership Meetups

Cost is $25 for members $45 for non-members

For more information and to register, click here.


INDIANA WINERY & VINEYARD ASSOCIATION
Northern Indiana
Membership Meeting
MONDAY, JULY 22, 2024
4:00 PM - 6:00 PM
Acres Away Winery


INDIANA WINERY & VINEYARD ASSOCIATION
Central Indiana
Membership Meeting
MONDAY, AUGUST 26, 2024
4:00 PM - 6:00 PM
The Rejoicing Vine Winery


INDIANA WINERY & VINEYARD ASSOCIATION
Southern Indiana
Membership Meeting
MONDAY, NOVEMBER 2, 2024
4:00 PM - 6:00 PM
Owen Valley Winery

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