CFAES

OHIO STATE UNIVERSITY EXTENSION

COSHOCTON COUNTY AGRICULTURE & NATURAL RESOURCES

June 22 (Edition #152)

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Hello Coshocton County! Welcome to summer! Last week's scorching weather broke for a beautiful hay making weekend. Now, the heat and humidity has returned and concerns are popping up about a flash drought. Expect this weather rollercoaster to continue due to our La Nina weather pattern.

Last week, I was able to participate in our State Ag Conference in Miami County and then was able to set out 3 Western Bean Cutworm traps and a squash vine borer trap. Thanks to Alan Brinker, Mike Lower and Coy Johns for cooperating with these monitoring traps.

Poison hemlock has been in bloom across the county and you may also see wild parsnip as well. I have an included a really good information article on this weed in today's edition. Also have included a nice article on a perennial weed- Canada Thistle.

Be safe and hydrated. Have a great week!

Sincerely,

David L. Marrison

Coshocton County OSU Extension ANR Educator

It's Getting Hot in Here

By: Jamie Hampton & Taylor Dill
Source: https://agcrops.osu.edu/newsletter/corn-newsletter/2022-19/it%E2%80%99s-getting-hot-here

The 2022 crop has already seen its fair share of stress. But with the forecast of a flash drought and much higher than normal June temperatures, we will be seeing some extra stress that we may normally anticipate for later in the growing season. Nevertheless, our crops are very resilient.

The original corn plant was a tropical grass that can tolerate temperatures up to 112°F for a short amount of time, but optimal daytime growth ranges from 77°F to 91°F, though 86°F is what is used for growing degree days because that is the average temperature where a corn plant will start to experience water stress. Corn growth starts a rapid decline when temperatures exceed 95 degrees.

Temperatures exceeding 86°F can be calculated as stress degree days, which is a way of tracking how much stress a type of plant has been subjected to. According to agronomists with Iowa State, in years when corn exceeds 140 stress degree days, achieving above-average yield is difficult.

However, according to agronomists at the University of Illinois afternoon temperatures in the mid-90s are not usually a problem for corn when there is enough soil water available. Temperatures above 100°F can begin to damage leaves. Though it is important to remember adequate water can increase the ability of the plant to handle heat stress. The combination of dry and hot is more damaging.

Leaf rolling is a common symptom of high-temperature stress. Yield diminishes by 1% for every 12 hours of leaf rolling during vegetative growth but increases to 1% every four (4) hours. When water is deficient during a heat wave the loss of yield increases after four consecutive days of 93°F or above, not including the stress from leaf rolling. So, the impact of heat stress can be two-fold.

Soybeans have a similar range in temperature to corn for heat stress. Temperatures above 85°F for several consecutive days can cause heat stress. This heat can accelerate maturity because soybeans are photoperiod and temperature-controlled when it comes to flowering. During vegetative stages, these high temperatures can slow or stop photosynthesis because the plant is making an effort to conserve water. Thus, inhibiting new vegetative growth, which is vital for late-planted soybeans. Temperatures above 86°F can also reduce nodulation and therefore N-fixation in the soybean which could have an effect until the reproductive stages.

Summer Crop Insects- What to Watch For

By: Andy Michel & Kelley Tilmon
Source: https://agcrops.osu.edu/newsletter/corn-newsletter/2022-19/summer-crop-insects-%E2%80%93-what-watch

Almost every field season has its particular insect problems and surprising' gotcha' moments (we're looking at you, fall armyworm). But there is a seasonality to our common insect pests in agriculture, and this article outlines a few of the things to look out for in the remaining months of summer. We will continue to monitor Ohio insect problems and provide more in-depth updates as needed.

July

- Soybean defoliators of various types (caterpillars, Japanese beetles, etc.) often make their first appearances in July. Thresholds for defoliation in soybean have recently been revised to take into account modern crop values and input costs. Soybeans can tolerate a surprising amount of defoliation and still compensate for a good yield, so don't pull the trigger too soon. When deciding when to spray, make your decision based on the average condition across the whole field. Many soybean defoliators are concentrated on the edge and spraying the whole field will not provide an economic return.
- Potato leafhoppers are a potential threat to alfalfa from July through September. See our article from last week on scouting specifics.
- July is Western bean cutworm month in corn, but this pest varies widely from year to year. Check our weekly monitoring network for WBC and other moths/caterpillar pests, reported in the CORN newsletter each week. The flight usually begins in mid-June, but peak flight usually occurs in Mid-July.
- Stink bugs in soybean make their first appearances as pods begin to form. From R3 onward, keep an eye on them. This is another edge pest, and swelling populations can benefit from an edge application when needed.

August

- Keep watching those potato leafhoppers in alfalfa.
- Defoliators and stink bugs in soybean tend to ramp up in August so keep these on your radar screen.
- Spider mites can strike many different crops during periods of sustained hot a dry weather, which can happen at any time of year but happens most commonly in August. There are several newer miticides on the market which are very effective when used timely.
- Remember soybean aphids? They are still a pest, but not as significant as before. If your field is infested, now is the time when they can cause damage.

Growth stage	Description	Threshold
V1 - R2	vegetative - bloom	30 %
R3 - R5	pod development - fill	10 %
R6	full seed	15 %

September

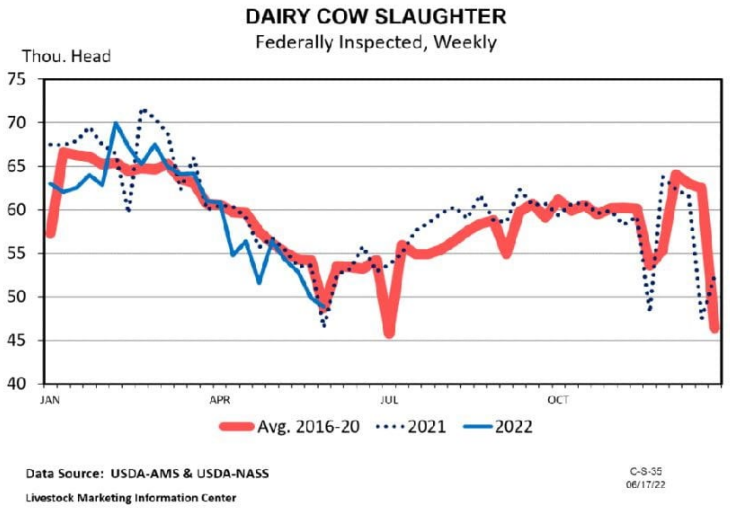
- If you have late-planted soybeans that are still green in September when other beans are maturing, they will be a magnet for both stink bugs and bean leaf beetles. Bean leaf beetles feeding on foliage are seldom a problem earlier in the season. But pod feeding on late-season beans holds more damage potential, through direct damage to the seed and also through the introduction of disease.
- When planting winter wheat, be mindful of the fly-free date for your county. Planting after this date can help minimize damage from Hessian fly and also feeding by aphids which can transmit disease, especially barley yellow dwarf virus

The Impact of Dairy Cow Slaughter on Cull Cow Markets

By: Dr. Kenny Burdine, Extension Professor, Livestock Marketing, University of Kentucky
Source: https://u.osu.edu/beef/2022/06/22/the-impact-of-dairy-cow-slaughter-on-cull-cow-markets/

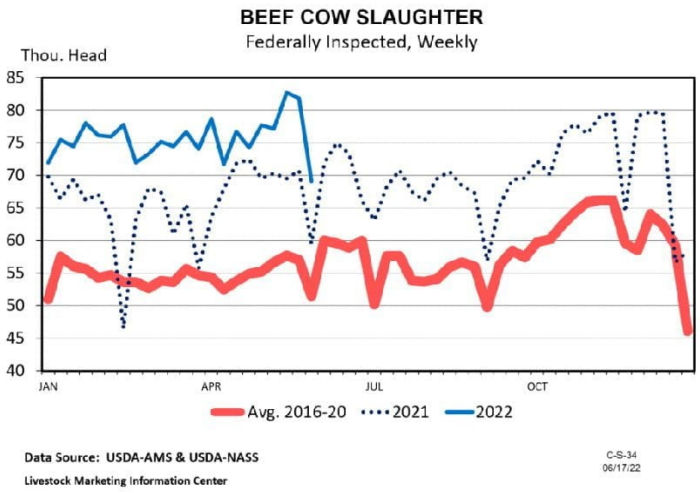
There has been much discussion about beef cow slaughter this year. Dry weather, rising input costs, and strong cull cow prices are resulting in large numbers of beef cows leaving cow-calf operations and moving into the beef system. It has actually been somewhat surprising that cull cow prices have remained as high as they have given beef cow slaughter levels. Certainly, some of this strength in prices is due to strong demand, but dairy cow slaughter is an often overlooked component of cow slaughter and I wanted to discuss that in a bit

more detail this week.



As of January 1, 2022, the USDA estimated there were a bit over 30 million beef cows, and just under 9.4 million dairy cows, in the US. While inventories of both fluctuate though the years, it is very common for there to be 3 to 3.5 times as many beef cows in the US as there are dairy cows. However, because the dairy cow herd gets culled more harder than the beef herd, dairy cow slaughter typically accounts for around 50% of all cow slaughter. One way to illustrate this would be to consider cow slaughter as a percentage of cow inventory for given year. Simply comparing USDA's estimate for cow inventory with slaughter levels would suggest that 11.5% of the beef cow herd was harvested in 2021, as compared to 32.9% of the dairy cow herd. Of course, the number of replacement heifers determine whether inventory actually increases or decreases for given year.

Because so many dairy cows end up in the beef system, dairy cow slaughter has a significant impact on cull cow markets. In the same way that profitability of cow-calf operations impact how hard the beef cow herd is culled, dairy profitability impacts how hard the dairy herd is culled. While feed costs are very high, farm level milk prices were at unprecedented levels this spring. The US All Milk price set a record in March and then set a new record in April. Improvement in milk prices has resulted in dairy operations keeping cows in production a bit longer. While beef cow slaughter has been up by more than 15% from last year, dairy cow slaughter is actually down by more than 3% so far in 2022.



While total cow slaughter is definitely running high, decreases in dairy cow slaughter are partially offsetting the increases in beef cow slaughter. Looking ahead, this trend is likely to continue. As I write this on June 21st, CME© Class III milk futures are above $22 per cwt through the end of 2022. To the extent that milk prices remain high, I think we can expect dairy cow slaughter levels to remain relatively low and provide some support for cull beef cow prices.

Planning with Second Marriages

By: Robert Moore, Attorney and Research Specialist, OSU Agricultural & Resource Law Program
Source: https://farmoffice.osu.edu/blog/thu-06162022-752pm/farm-succession-planning-second-marriages

Second marriages can present a unique challenge for farm succession planning. The challenge occurs when one or both spouses have children from a prior marriage. The spouses often want a plan that will ensure the surviving spouse has adequate income for the remainder of their life but at the death of the surviving spouse they will usually want their assets to go to their children, not their spouse's children. So, the issue becomes, how to establish a plan to take care of the surviving spouse while ensuring the deceased spouse's assets go to their own children?

Consider the following example, a typical second-marriage, farm succession scenario. Mark and Mindy each have two children from previous marriages. Mark farmed his whole life and built a large farming operation prior to marrying Mindy. Mindy is not involved in the farming operation. Mark's two children plan to take over the farming operation. If Mark dies before Mindy, he wants to make sure Mindy has adequate income for the rest of her life. However, he wants his assets to ultimately go to his children and not Mindy's children.

Let's first look at what a bad plan might look like. If Mark and Mindy do not have an estate plan or a simple estate plan where everything goes to the surviving spouse then to the children, Mindy's children could end up with some or all of Mark's assets. Let's assume they each have a will that says everything to each other then to the children. If Mark dies first, all of his assets will go to Mindy. At that point, Mindy will have total control of the assets and could sell them all or leave them all to her children. For second marriages, no plan or a simple plan is usually not adequate to meet the goals of a farm succession plan.

The better plan is to use a trust. The trust can hold the deceased spouse's assets in trust for the surviving spouse's life, thus providing income. Then, at the surviving spouse's death, the assets are distributed to the deceased spouse's children. The surviving spouse never has ownership of the deceased spouse's trust assets so the assets are never in danger of ending up with the surviving spouse's children.

Using the example above, Mark establishes a trust with the following terms: "Upon my death, my assets shall be held in trust for the life of Mindy. While held in trust for Mindy, my Trustee shall distribute all income to Mindy. Upon the death of Mindy, my Trustee shall distribute the assets to my children." This trust will provide income to Mindy but ultimately distribute the assets to Mark's children.

Sometimes we may want some assets to go directly to the deceased spouse's children at death and some held in trust. This is very common for farm plans. When children will be taking over the farming operation, we may not want to tie up the operating assets in trust but instead have those go directly to the farming children. To implement this plan, the trust may have these provisions: "Upon my death, my Trustee shall distribute all my farm machinery, grain, crops and other farm operating assets to my children. The remainder of my assets, including my farmland, shall be held in trust for Mindy. While held in trust for Mindy, my Trustee shall distribute all income to Mindy. My Trustee shall offer to lease the farmland to my children for 80% of the county cash rent average. Upon the death of Mindy, my Trustee shall distribute all remaining trust assets to my children."

As the examples show, trusts can be very effective at establishing plans for second marriages. The surviving spouse can be provided with adequate income while protecting the assets for the deceased spouse's children. A simple plan or no plan can result in some or all of the deceased spouse's assets being inherited by the other spouse's children. A trust can be designed with a great deal of flexibility and creativity. Farmer's in second marriages should consult with legal counsel to determine if a trust may be best for their succession plan.

Ohio Coyote Ecology and Management Project

By: Stan Gehrt and Brady Campbell
Source: https://u.osu.edu/sheep/2022/06/21/ohio-coyote-ecology-and-management-project/

Few animals elicit such strong, and opposing, emotions as the coyote. But love 'em or hate 'em, after decades of range expansion across the United States, coyotes are an established predator throughout Ohio. So, the question we can all agree on is: How do we minimize potential conflicts with coyotes in this state? And to answer that question, we need data.

Livestock production is a cultural and economic staple in Ohio but it differs in many ways from production in the western US, where most of the coyote research has been done. Although Ohio produces more sheep and

lambs than any other state east of the Mississippi River, the average flock size is 36 head, which means the loss of even a single animal exacts a disproportionate financial toll from local operators. Additionally, ecosystems in the Midwest are vastly different than those in the west. For any management strategy to effectively protect against coyote predation in Ohio, we need to know more about Ohio coyotes.

Some basic questions include: What do Ohio coyotes eat, and how does their diet change throughout the year? Do males and females eat the same things? Which coyotes are a bigger threat to livestock? How many coyotes are living in a given area? We can make educated guesses based on expert opinion and the research from other regions, but without local data it is speculation.

With support from the Ohio Division of Wildlife, our team at The Ohio State University has begun a multi-year study 1) to provide unbiased data on the extent to which coyotes consume livestock in Ohio, and 2) to identify strategies for managing the conflict. For this project to be successful, we aim to form partnerships among Ohio livestock producers. We want to provide a clear picture of the coyote-livestock situation and evaluate some management strategies that have shown promise in other regions of the US. We are collaborating with US Department of Agriculture/Wildlife Services and OSU Extension to reach out about this project and help us identify some potential partners.

The overall purpose of this project is to provide practical information to minimize livestock-coyote conflict in Ohio. If you are interested in contributing to the project, as a producer partner or with assistance collecting samples, please contact us for more information.

Principal investigator: Dr. Stan Gehrt, Professor and Wildlife Extension Specialist
Interested? Contact the OSU Coyote Project at:

OHcoyote@osu.edu
(614) 300-0754

Dr. Brady Campbell at:
campbell.1279@osu.edu

Relentless Canada Thistle

By: Christine Gelley, Agriculture and Natural Resources Educator, Noble County OSU Extension
Source: https://u.osu.edu/beef/2022/06/22/relentless-canada-thistle/

The time has come for Canada thistle flowers to line the roadways and begin to bud in pastures and hayfields. The lavender-colored aggregate flowers that develop into fluffy seed are one of the most distinguishing characteristics of the plant. They are easy to find blooming from June through August. If it wasn't such an unpleasant plant to encounter, I might call it pretty. It isn't poisonous, thank goodness, but it certainly is troublesome. Some animals will tolerate it while grazing, but most will avoid it while it is growing or sort it out of a hay bale.

Its common name may give the impression that the plant is native to North America, but alas, it is not. It is actually native to Eurasia and was probably introduced here during colonial times in ship ballast. In its home range it is commonly known as "creeping thistle". It was labeled with the name "Canada thistle" by New Englanders who blamed its introduction on French tradesmen from Canada. Whatever you choose to call the plant, it is a noxious weed in many countries worldwide, along with the State of Ohio. Because of this status in Ohio, it is every landowners' legal responsibility to work to control Canada thistle.

There are multiple reasons why controlling Canada thistle is a difficult task. It is well adapted to many environments and will even grow unassisted in sand,

although clay loam soils are preferred. It spreads easily by creeping underground roots. One plant has the ability to produce thousands of seeds that can be dispersed by wind, water, and wildlife and have the ability to remain viable in the soil for 20 years. It is especially common to find in drained marshy or frequently flooded ground.

If it were easy to control, it wouldn't be on the noxious weeds list. Due to factors listed above, it will take multiple approaches and seasons to control Canada thistle. Aggressive mowing may be helpful to suppress seedhead development, but it will readily grow back from the creeping root system. Hand pulling or tillage can be helpful, but the roots may lie 3 feet below the surface and spread laterally in extensive networks. It is responsive to some systemic herbicides, but it is also developing resistance to many "go-to" options. Grazing may be a possibility if you train animals to consume it or find one that seems to enjoy the plant (yes, I have heard they exist).

I suggest trying some of everything if you have a Canada thistle problem. Strategic defoliation in combination with well-timed herbicide application may work best for perennial grassland ecosystems. Herbicides that provide good to excellent control on Canada thistle include: glyphosate, dicamba, 2,4-D, clopyralid, and aminopyralid and combination mixes of these ingredients. Appropriate timing and rates for application depend on the conditions of the site, the time of year, and the surrounding desirable vegetation. Always follow the instructions on the herbicide label. For assistance finding the best selection for your situation, contact your local ANR Educator to discuss the options that will address both Canada thistle and other problematic weeds that are prevalent on your property.

Wild Parsnip: Too Late to Control, Not Too Late to Identify

By: Joe Boggs
Source: https://bygl.osu.edu/node/1997

Wild Parsnip (Pastinaca sativa L., family Apiaceae (previously Umbelliferae)) is in full bloom in Ohio with recent hot temperatures accelerating seed development, particularly in the southern part of the state. This means it's too late to reduce the seed bank of this highly dangerous non-native invasive weed by mechanical removal (e.g, mowing with caution!) or using herbicides.

The slow but relentless spread of this good vegetable gone bad was on display along I-71 as I drove from Cincinnati to Columbus last Thursday. Masses of 3 – 4 ft. tall plants capped by clusters of bright yellow "flat-topped" flowers were a common sight on each side of the interstate right-of-way for the entire trip. There was a time not long ago when I would go out of the way to take pictures of wild parsnip.

It's also common to see another dangerous non-native invasive, Poison hemlock (Conium maculatum), growing near or among the wild parsnip. The two growing together creates a high-risk scenario for the uninformed. I reported in an Alert last week to report that it's also too late to control poison hemlock in Ohio [see BYGL Alert, "Poison Hemlock: TOO LATE!," June 17, 2022].

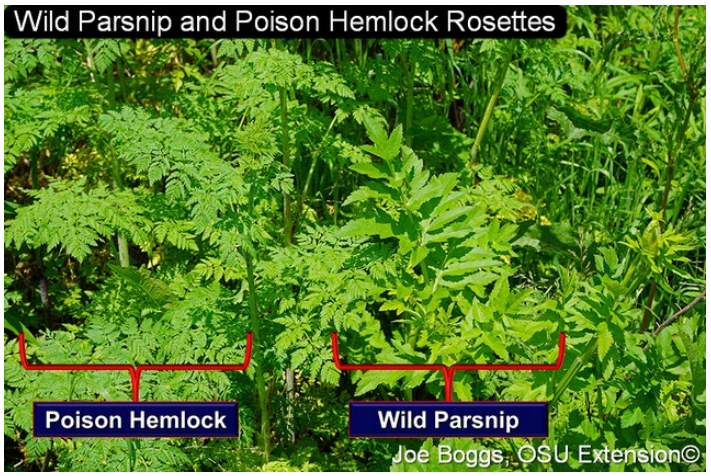
Why Worry?
Most consider poison hemlock to be one of the most dangerous plants in North America owing to the highly toxic piperidine alkaloid compounds it produces for chemical defense. Indeed, history tells us poison hemlock "tea" was used to kill Socrates as well as the Greek statemen Theramenes and Phocion. Accidental poisonings have occurred in the U.S.

The toxins in poison hemlock must be ingested or enter through the eyes, nasal passages, and cuts in the skin to induce poisoning. There's also anecdotal evidence that mechanical removal may cause the sap containing the toxins to become aerosolized and inhaled. However, poison hemlock toxins do not cause skin rashes or blistering.

The defense chemicals produced by wild parsnip are very different and have a vastly different mode of action. Skin contact with wild parsnip sap can produce painful severe blistering requiring medical attention. Various

online reports describe the skin damage as being comparable to a 2nd-degree chemical burn and hospital treatment commonly involves burn units.

It's important to note that it is not unusual to find poison hemlock and wild parsnip growing together which can create misinterpretations of exposure symptomology. This may account for some online resources incorrectly attributing skin blistering to contact with poison hemlock.



The goal of this BYGL Alert and the previous posting on poison hemlock is not to scare readers into avoiding the outdoors. It's to raise awareness of plants we should avoid. The same goal is exemplified by, "leaves (leaflets) of three, leave it be." Many of us were taught this saying as a way to learn how to avoid contact with Poison Ivy (Toxicodendron spp.).

Word of the Week: Phytophotodermatitis

Wild parsnip sap contains psoralen which is a naturally occurring phytochemical grouped in a family of organic compounds known as linear furanocoumarins. Psoralen acts as a photosensitizing compound because of its ability to crosslink DNA to interfere with transcription in epidermal cells which kills these light-shielding cells responsible for protecting us from long-wave ultraviolet radiation (LWUVR) bombarding us in sunlight.

Severe blistering occurs when the affected skin is exposed to LWUVR. The synergistic effect is called phytophotodermatitis (a.k.a. Berloque dermatitis) and the burn-like symptoms, as well as skin discoloration, may last for several months. When you say the effect out loud, it sounds like "fido," although dogs have nothing to do with it.

Skin blistering takes around 24 hours for symptoms to first appear after exposure to LWURV and severe blistering typically doesn't peak until 48 -72 hours. The time required for symptoms to appear after exposure to the sap means the effect may be disconnected from the cause.

All in the Family

Psoralens are also found in several other members of the Apiaceae (carrot family). They are used as chemical warfare agents against herbivores intent on consuming parts of the plants.

The most notorious member of Apiaceae with high concentrations of psoralens is Giant Hogweed (Heracleum mantegazzianum) which has captured national attention in the past. However, giant hogweed has not become widespread in Ohio with confirmations confined to the northeast part of the state.

Wild parsnip is found throughout the state and is equally damaging. Of course, the name giant hogweed sounds more threatening. Wild parsnip just sounds like a vegetable gone wild, which it actually is!

Parsnips have been cultivated as a root crop in Europe for thousands of years. The "L." in the scientific name Pastinaca sativa L. means Linnaeus first described the species. Both the cultivated and wild types share the same scientific name; however, it is clear that there are significant differences in toxic biochemical properties between the two types.

It is theorized that the wild parsnip plants in Ohio represent escapes from cultivated types brought to North America from Europe and a reversion back to a wild type. The wild genes were always there but remained suppressed until revealed through natural selection shaped by herbivory.

As I noted in my BYGL Alert on poison hemlock, plant defense chemicals are most commonly secondary metabolites meaning that they don't play a role in any primary plant physiological processes. However, secondary metabolites are not synthesized at no cost to the plant. Plants must dedicate resources to their production at the expense of other enterprises such as growth and reproduction.

In other words, if there is no need for parsnip plants to crank up their secondary metabolite synthesis machinery to defend against herbivores, the biennial plants can shift resources during their first growing season to form large taproots to store carbohydrates that will support second-year flowering plants with more flowers and seeds. The side benefit for us is large taproots make a tasty side dish if roasted to caramelize all of that extra stored sugar. There are many other recipes.

The non-native Parsnip Webworm (Depressaria pastinacella, family Depressariidae) was not originally imported into North America along with its vegetable host. The webworm focuses its entire attention on its namesake host; it doesn't eat anything else. The webworms feed within silk webbing encasing the flowers and seed. Late instar caterpillars bore into and feed on the stems.

The webworm thwarts the plant's chemical warfare by excreting most of the plant toxins in their feces. However, some of the toxins are incorporated into the caterpillar's silk webbing. The purpose is unknown, but it is speculated that the toxins protect against predators and parasitoids given that the webbing surrounds the caterpillars as they feed on the flower parts.

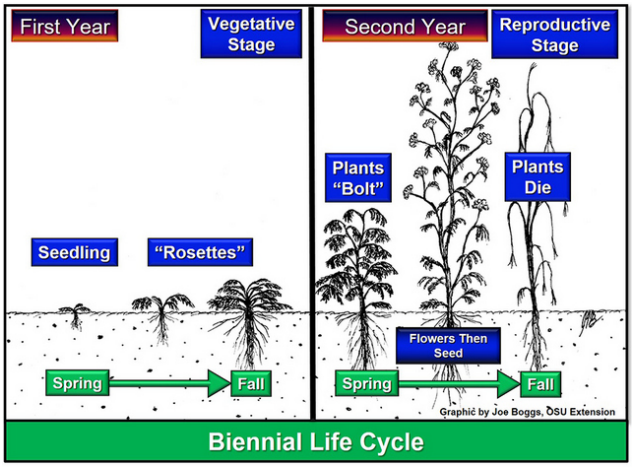
The parsnip webworm arrived in North America in the 1850s. Research has revealed that its arrival exerted selective pressure on wild parsnip to invoke its chemical arsenal.

Plants stored in herbariums before the arrival of parsnip webworm showed a significantly lower concentration of psoralens compared to plants collected after webworms had become established. Instead of behaving like a classical biocontrol agent by devastating its host, the webworms had increased the noxious nature of an already noxious non-native weed.

Wild Parsnip Life Cycle

Wild parsnip has a biennial life cycle. The first year is spent in the "vegetative stage" as a low-growing basal rosette. While in this stage, the plant produces a long, thick taproot to store carbohydrates to support the following season's production of flowers and seeds.

Plants "bolt" during the second year "reproductive stage" to produce erect multi-branched stems topped with yellow umbrella-like flowers. Of course, plants bolted long ago in southwest Ohio.

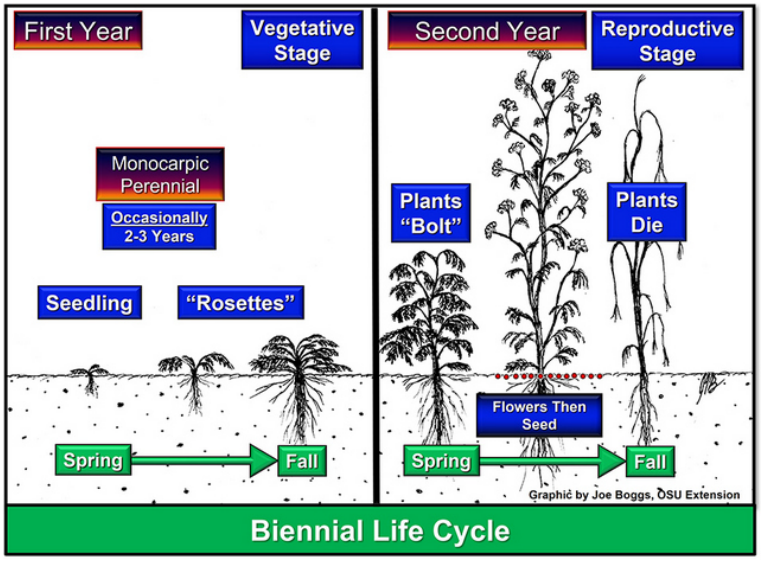


It's important to keep in mind that the graphic above provides a generalized view of a biennial life cycle. In reality, there can be considerable variability in the timing of events meaning that the growth stages within a group of wild parsnip plants are seldom synchronized. It's common for first-season vegetive plants to be mixed with second-season reproductive plants.

The literature notes that some plants may occasionally behave as monocarpic perennials spending more than one year in the vegetative stage before flowering once and then dying. This would help to explain the rapid rise in asynchronous life cycles in developing wild parsnip infestations.

The timing of seed germination may also affect what we see. While most of the seeds germinate in the spring, some will also germinate in the fall. As a result, first-year rosettes commonly range in size from small plants if seeds germinated in the spring to larger plants if seeds germinated in the fall.

Finally, wild parsnip is a prolific seed producer. Although the literature notes that seeds may remain viable for only around 4 years, management tactics must account for new plants arising annually from the "seed bank" until there are no longer any viable seeds to contribute to infestations.



Identification

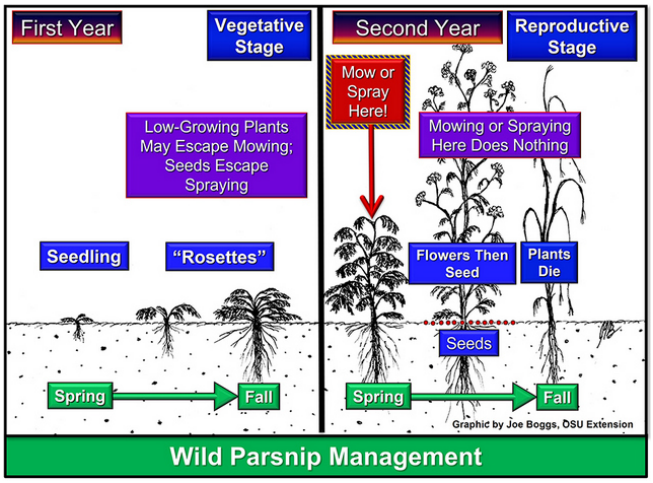
Wild parsnip plants have celery-like leaves. The leaves are pinnately compound, branched, and have saw-toothed edges. Each leaf has 5 – 15 ovate to oblong leaflets with variable toothed edges and deep lobes.

During the first-year rosette stage, the leaves are confined to growing from a short stem near the ground. Once plants bolt in the spring, the leaves alternate on the flower stalks. The mature flowering plants have a single, thick, deeply grooved, greenish-yellow stem that sprouts lateral branches topped with hundreds of clusters of the yellow umbellate flowers. Mature wild parsnip plants are shorter in stature compared to poison hemlock but still impressive at up to 4 – 5 ft. tall.

Be aware that certain cultivated members of the Apiaceae family may be mistaken for wild parsnip and vice versa. Two of the most commonly reported look-a-likes are Fennel (Foeniculum vulgare) and Golden Alexanders (Golden Zizia) (Zizia aurea).

Wild Parsnip Management

Unfortunately, wild parsnip is becoming more common throughout Ohio. Worse, this dangerous non-native weed is increasingly being found growing near people which increases risks to human health. Wild parsnip is becoming too widespread in Ohio to be eradicated from the state. However, infestations that present a clear and present danger to the public should be targeted for elimination.



Various online reports note that wild parsnip can be managed by mechanic removal (e.g., mowing) or hand pulling. However, the benefits must be weighed against the risks. Hand pulling presents a direct route for exposure to the photosensitizing chemicals in the sap. While chemical-resistant gloves will prevent direct contact with the skin, long-sleeved shirts may allow the sap to soak through. String trimmers and brush saws should not be used. Both can fling sap.

Mowing just after plants begin to bolt but before they bloom can be highly effective. However, most mowers will pass over the low-growing rosettes and even if they are cut, the plants will produce new stems. But equipment operators should approach mowing large wild parsnip infestations with caution. Equipment with unshrouded blades should not be used. PPE should be considered even if brush or flail mowers are shrouded.

The graphic below shows the biennial life cycle with an arrow pointing to the best time of the year to mow or spray. Note that management strategies targeting the second-year plants after they start bolting may have a limited impact on first-year rosettes. This means wild parsnip infestations are not likely to be eliminated in a single season.

Mowing after seeds are produced is a good recipe for spreading wild parsnip. The seeds can easily hitchhike on mowing equipment, particularly atop mower decks. Heavy infestations along roadways and within other rights-of-ways provide anecdotal evidence that human-assisted spread has played a significant role in spreading this non-native invasive weed in Ohio. Mowers should be thoroughly cleaned before moving to new locations if mowing must be done after wild parsnip has produced seeds.

Given the problematic nature of controlling wild parsnip by physical removal, herbicides may be the safest option. Fortunately, the non-native weed is susceptible to several selective and non-selective postemergent herbicides.

As with mowing, herbicide applications should be made after plants begin to bolt in the spring but before flowering. The time window for making effective herbicide applications can vary from year to year depending on springtime temperatures. A warm spring means the window may open and close rapidly which emphasizes the need to identify wild parsnip and make management plans long before infestations reveal themselves by yellow blooms.

Keep in mind that non-selective herbicides such as glyphosate (e.g. Roundup) can also illuminate plants that compete with wild parsnip. Herbicidal openings produced by non-selective herbicides provide perfect opportunities for wild parsnip to spring forth from previously deposited seed. Thus, it's important to have a plan for establishing competitive plants such as over-seeding with grasses.

Selective post-emergent herbicides will preserve competitive plants. Herbicides effective against wild parsnip include clopyralid (e.g. Transline), metsulfuron (e.g. Escort XP), triclopyr (e.g. Triclopyr 4), and combination products such as those that contain 2,4-D, mecoprop, and dichlorprop (e.g. Triamine). However, herbicide timing is critical. It’s too late for herbicide applications to prevent seed production this season in Ohio.

Are You An Employer of Choice?

By: David Marrison, Extension Educator
Source: Written for The Beacon Newspaper, June 23

Hello Coshocton County! I know many involved in agriculture have had a lot of worries on their minds this year. Front and center of course are the challenges which our La Nina weather patterns have presented. Other stressors include our recent power outages, supply chain shortages, high fuel and fertilizer prices, eroding capital, inflation, and the constant struggle with labor.

Today, I would like to share some thoughts on one of these issues: this being labor. In the May edition of OSU Extension’s Farm Office Live webinar, Dr. Margaret Jodlowski provided an agricultural labor update. She reported many farm and non-farm businesses are struggling to attract and maintain good employees. Dr. Jodlowski also shared that summer job postings are 40 percent higher than in February and that labor wages continue to rise.

Many Ohio farms have primarily relied on family members to provide the necessary labor. However, as farm businesses grow in size and complexity, our workforces are expanding to include non-family labor. Operating a highly competitive farm operation requires the talents of many people especially when field and animal activities are being conducted simultaneously. So, to meet today’s labor challenges, how can your farm become an “employer of choice?”

Recently, two Extension colleagues from Michigan State University completed a study on the effects of employer management on employee recruitment, satisfaction, engagement, and retention on large U.S. dairy farms. Stan Moore and Phil Durst identified six common management areas as weaknesses on many dairy farms.

The areas identified were: failure to specify goals, failure to encourage employee input, employee-to-employee

problems, lack of communication, failure to provide training, and failure to provide specific positive feedback. They found that employees who had a good relationship with their employer and who understood goals, directions, and how their work fit into the accomplishment of those goals were more likely to be satisfied in their jobs.

So how are you doing with your labor management? This summer, I would encourage you to take some time to think about the ways you can enhance your employee management program. Are job duties and expectations clearly defined? Should an employee handbook be developed? Are we providing coaching and instruction at opportune times? Do we hold employee meetings? How can we increase the skills of our employees? In what ways can we improve the working environment for our employees? In what areas would we like our employees to improve and how can we help them improve? How can we remove employee dis-satisfiers such as unsafe equipment, unreasonable rules and policies, and conflict with co-workers? How can we encourage and reward initiative, innovation, and new ideas?

It is no secret that motivated employees are more productive. Dr. Bernie Erven, OSU Professor Emeritus, often cited an employee paradigm that states*: "You can buy people's time: you can buy their physical presence at a given place, you can even buy a measured number of their skilled muscular motions per hour. But you cannot buy the devotion of their hearts, minds or souls. You must earn these."*

How are you doing in keeping your employees motivated? Have you taken time to ask your employees what motivates them? Many employers would be shocked to learn that good wages and job security are not necessarily the ultimate motivators.

A study conducted some time ago by George Mason University showed the top three motivators for employees were interesting work, appreciation, and feeling in on things. Granted with today's inflation, competitive wages are a crucial part to being an employer of choice. Have you checked to see how your wages compare to other industries in your region?

Some employees are internally motivated while others are motivated by external rewards. By listening to employees, you can develop strategies to reward and motivate them. Some of these strategies could include: verbal praise, free meals, work uniforms, annual salary increase, free gas, tickets to a ball game, unexpected paid time off, bonuses, flexible work schedules, special gifts for special occasions, and extra vacation days. And never forget how far a sincere thank you or compliment can go for any employee including family members.

If you are looking to add to your employee management tool box, I would encourage you to check out the University of Wisconsin-Madison's "Becoming the Employer of Choice" resources at: https://farms.extension.wisc.edu/programs/becoming-the-employer-of-choice/

Good luck as you continue to negotiate and manage through these topsy-turvy times. And remember to keep employee management as a top priority. The investment that you put into your employees today will reward you in the future. Have a good and safe day!