

Response to Cucurbit Growers Early to Mid-Season Stress

The information below was compiled by Jim Jasinski, OSU Extension, IPM Program Coordinator

First off, thank you to all the respondents from VegNet and other listservs who told us about what issues you were being faced with due to the very wet spring and early summer most of Ohio experienced. While we can't control the weather, despite many of you asking us to, we can try to help make the best of a less than desirable situation. The information below is based on 36 grower responses from July 4th – 24th. It is our hope that some of this information is timely enough to help your operation through this season.

Q1. How many pumpkin/squash/melon/ cucumber acres did you EXPECT to plant in 2019?
-518.6 A

Q2. How many pumpkin/squash/melon/ cucumber acres did you ACTUALLY plant so far in 2019?
-508 A. If these were to represent only pumpkin acres, then this survey would account for about 8% of the total pumpkin acres on average in Ohio over the past few years.

Q3. As of July 5th, do you expect to plant anymore acres of pumpkin/squash/melon/cucumbers this season?
-No 72%, Not sure 14%, Yes 14%

Q4. What is the number one reason that your pumpkin/squash/melon/cucumbers crop has been delayed this season?
-Rain/flooding 94%, Other 6%

Q5. What are the top 2-3 things OSU research or Extension can help you with to try to salvage or make the best crop possible given the difficult planting conditions this spring / early summer?

Grower Response (unedited)	Extension Response
<p>up dates on diseases and chem to use at correct time, areas that have crops if ours fail</p>	<p>For updates on management of insects, weeds, and diseases, see current posts in OSU VegBlog such as: http://u.osu.edu/vegnetnews/author/miller-769-2/ https://u.osu.edu/vegnetnews/author/welty-1/ https://u.osu.edu/vegnetnews/author/jasinski-4-2/ https://u.osu.edu/vegnetnews/author/mattk/</p> <p>Don't forget to consult the Midwest Vegetable Production Guide for more information on pest control options. https://ag.purdue.edu/btny/midwest-vegetable-guide/Pages/default.aspx</p> <p>For fruit availability to market, check with local produce auction houses http://ohiofoodshed.org/listingtype/produce-auctions/</p>

<p>I have delayed planting until July 15 due to previous years of crops were ready to early in the season And due to wet conditions And my plants were infested with spotted cucumber beetles</p>	<p>For cucumber beetle control, there are many options ranging from pyrthroids to carbaryl</p> <p>https://ag.purdue.edu/btny/midwest-vegetable-guide/Documents/2019/ID-56_2019.pdf#page=116</p>
<p>We have been fortunate in our area to not have any difficulty planting this year.</p>	<p>That's great!</p>
<p>Keep updating on PM and Downey. Weed control options.</p>	<p>Recent updates on Powdery and Downy mildew have been made on VegNet/VegBlog</p> <p>http://u.osu.edu/vegnetnews/author/miller-769-2/</p> <p>For weed control, direct questions to OSU weed scientist Doug Doohan (doohan.1@osu.edu)</p>
<p>I'm not even sure at this point. We won't have a pumpkin crop this year but are hoping to take that land this fall and plant tulips, ranunculus and anemones for spring cut flower production, so at least we will have something in the ground.</p>	<p>Sorry to hear the weather ruined your crop, hopefully your alternative flower crops will be able to salvage some of the revenue for this year.</p>
<p>squash bugs weeds</p>	<p>Adult and nymph squash bugs are now out and laying eggs. For control options, consult the Midwest Veg Production Guide</p> <p>https://ag.purdue.edu/btny/midwest-vegetable-guide/Documents/2019/ID-56_2019.pdf#page=116</p> <p>For weed control, direct questions to OSU weed scientist Doug Doohan (doohan.1@osu.edu)</p>
<p>market identification and contacts</p>	<p>Aside from contacting the Produce Auction Houses as referenced above, you may want to look into using Market Maker to connect buyers and sellers</p> <p>https://u.osu.edu/ohioagmanager/2014/11/05/marketmaker-links-producers-and-potential-buyers/</p>
<p>Some varieties had great germination and growth, some almost no germination and rows are side by side. Was it no germination, low strength of the seed/plant after germination, or what?</p>	<p>We noticed in our hybrid pumpkin plots at the research station this year that about 3 of the 27 varieties had very poor germination. Given that all planting conditions were identical, we believe that some hybrids are very sensitive to cooler and wetter conditions leading to excessive seed rot in the furrow and ultimately poor germination.</p>
<p>nothing at this time</p>	<p>Good</p>

<p>Fungicides and how often to apply, and weed control</p>	<p>For fungicide applications, see these recent articles in VegNet / VegBlog</p> <p>http://u.osu.edu/vegnetnews/author/miller-769-2/</p>
<p>We managed to get everything planted albeit 2-3 weeks late. Where OSU can help would be 1) identifying good short-season varieties for when we do have to plant late - especially pumpkins that have a market deadline, 2) alternate planting techniques for when transplants are in trays too long or direct seeding though plastic</p>	<p>Most if not all of the seed companies post a maturity date on their pumpkins, squash, etc. in their catalog. In several hybrid trials conducted by Brad Bergefurd, the maturity and performance of these hybrids are reported. Brad can be reached at bergefurd.1@osu.edu for more information.</p> <p>Leggy transplants are difficult to deal with in a transplant situation. Years ago Mark Bennett did some work with growth regulators mostly in tomatoes trying to slow down seedlings in trays. I'm not sure who is current on this information at OSU, possible contact Brad Bergefurd (bergefurd.1@osu.edu) or Matt Kleinhenz (kleinhenz.1@osu.edu).</p>
<p>Disease Weeds</p>	<p>If you have diseased plants, send them to Sally Miller's Pathology Lab where they will be diagnosed FREE of charge https://u.osu.edu/vegetablepathologylab/diagnostic-submission/</p> <p>Weed questions should be directed to Doug Doohan (doohan.1@osu.edu)</p>
<p>Keeping plants health with large amounts of rain.</p>	<p>Monitor for diseases caused by excessive rains and treat with fungicides, bactericides, etc., as possible. Heavy rains will not only leach N from plantings but generally slow pumpkin growth.</p>
<p>insect updates disease updates</p>	<p>See periodic updates in OSU VegNet / VegBlog http://u.osu.edu/vegnetnews/</p>
<p>Disease control. Especially phytophthora in pumpkins</p>	<p>Information about disease control is posted in the VegNet newsletter (see above).</p> <p>Information specifically about phytophthora can be directed to Sally Miller (miller.769@osu.edu). Options include fungicides and long rotations. To date, no hybrids have been reported with resistance. Some new work focuses on the use of mustard cover crops as biofumigants, but this research is just beginning.</p> <p>http://u.osu.edu/vegnetnews/2019/06/16/introduction-to-using-mustard-cover-crops-for-biofumigation-in-pumpkin/</p>

<p>To be honest nothing unless you can change the climate back to what it used to be. Maybe lobby for policies that are better for the climate and environment, but I will not hold my breath.</p>	<p>While we are a powerful and determined group of Extension educators and researchers, we still can't control the weather...yet.... ☺</p>
<p>Weed control; disease control;</p>	<p>If you have diseased plants, send them to Sally Miller's Pathology Lab where they will be diagnosed FREE of charge https://u.osu.edu/vegetablepathologylab/diagnostic-submission/</p> <p>Weed questions should be directed to Doug Doohan (doohan.1@osu.edu)</p>
<p>Keep me updated on downy,</p>	<p>Will do...keep an eye on Vegnet newsletter where an update was just posted.</p> <p>http://u.osu.edu/vegnetnews/author/miller-769-2/</p>
<p>Maturity. Since we planted 3 weeks late I'm not sure larger pumpkins 110 day will be orange. Also various decorative gourds may not be mature enough to pick in September when retailers want them</p>	<p>The season length and warmth will determine if these will finish or not. As mentioned above, shorter maturing hybrids can be found in most seed company catalogs.</p> <p>Most if not all of the seed companies post a maturity date on their pumpkins, squash, etc. in their catalog. In several hybrid trials conducted by Brad Bergefurd, the maturity and performance of these hybrids are reported. Brad can be reached at bergefurd.1@osu.edu for more information.</p>
<p>Most of our crops look good with the exception of some of the pumpkins in the wet areas of the field.</p>	<p>Good news for you...I'm sure you will have no trouble marketing any of them!</p>
<p>Keep us up to date quickly as possible in regard to disease & insect problems</p>	<p>Will do our best as new pests come into the picture. In the meanwhile, don't forget to read and subscribe (free) to the Vegnet Newsletter, it's where all of our current information gets posted.</p> <p>http://u.osu.edu/vegnetnews/</p>
<p>Nothing they can not control the rain, 3.2 inches from July 3 thru July 6.</p>	<p>Sorry, we can't do that yet...</p>

<p>Fungicide recommendation, insecticide recommendation, what to do with purple nightshade</p>	<p>For general recommendations on fungicides and insecticides, consult the Midwest Vegetable Production Guide https://ag.purdue.edu/btny/midwest-vegetable-guide/Documents/2019/ID-56_2019.pdf#page=116</p> <p>Sally Miller and Celeste Welty have made recommendations on VegNet about controlling diseases and insects http://u.osu.edu/vegnetnews/</p> <p>Jim Jasinski has also posted some powdery mildew fungicide trial results and general management guidelines at https://u.osu.edu/jasinski.4/pumpkins/</p> <p>For weed questions like controlling nightshade, contact Doug Doohan (doohan.1@osu.edu)</p>
<p>Research on wet soil disease like phytophthora which I'm concerned about.</p>	<p>Information specifically about phytophthora can be directed to Sally Miller (miller.769@osu.edu). Unfortunately when fields are wet, this disease thrives and is very difficult to control/manage. Options include fungicides and long rotations. To date, no hybrids have been reported with resistance. Some new work focuses on the use of mustard cover crops as biofumigants, but this research is just beginning. http://u.osu.edu/vegnetnews/2019/06/16/introduction-to-using-mustard-cover-crops-for-biofumigation-in-pumpkin/</p>
<p>Immediately provide us with the raw data of this survey for our future decision making. Tell us the best practices for preparing our current wet, compacted, weedy, soils for next year's pumpkin production.</p>	<p>Best practices for compacted soils may include sub-surface tilling such as rippers to break compaction. Contact Scott Shearer (shearer.95@osu.edu) at OSU's Food, Ag, and Biological Engineering for more information.</p> <p>Herbicides for cucurbits in general aren't extremely effective so planting in a field with lower weed pressure, such as after glyphosate tolerant soybeans, maybe a short term solution.</p> <p>Cover crops such as sudan grass can also help break up compaction. Alan Sundermeier (sundermeier.5@osu.edu) has conducted many trials regarding cover crops and soil health too. https://www.sare.org/Learning-Center/Books/Managing-Cover-Crops-Profitably-3rd-Edition</p> <p>http://mccc.msu.edu/species/grasses/sorghum-sudangrass/</p>
<p>Weed management Poor plant growth due to overly wet soil</p>	<p>For weed control issues, contact Doug Doohan (doohan.1@osu.edu)</p> <p>For possible drainage solutions, contact Larry Brown (brown.59@osu.edu)</p>

<p>1. make the rain go away 2. advise on fungicide and insecticide applications during wet and rainy times</p>	<p>Doing our best rain dance now.</p> <p>Please continue to read the postings in VegNet newsletter to address disease and insect issues, several recent reports have been posted</p> <p>http://u.osu.edu/vegnetnews/</p>
<p>Come up with a way to control the weather. That would be great</p>	<p>Working on it!</p>
<p>Disease development/treatments and nitrogen loss</p>	<p>Please continue to read the postings in VegNet newsletter to address disease and insect issues, several recent reports have been posted</p> <p>http://u.osu.edu/vegnetnews/</p> <p>Nitrogen loss due to excessive rains can possibly be addressed by additional side-dressing, fertigation, or foliar feeding (which is being researched). Soil fertility in general may be addressed by Steve Culman (culman.2@osu.edu)</p>
<p>Not growing like they should</p>	<p>Pumpkins and other crops don't like to be waterlogged and cold, as it dries up and warms up, these plants should begin to respond.</p>
<p>Not sure</p>	<p>OK, we're doing our best to help.</p>
<p>Managing an uneven emerging crop. Weed control post emergence.</p>	<p>Some crops can "catch up" if given enough time but in pumpkins there is often a split crop due to excessive heat during the middle of flowering which causes flower abortion. This usually leads to about a two week difference in fruit maturity.</p> <p>For weed control issues, contact Doug Doohan (doohan.1@osu.edu)</p>
<p>Bacterial issues- dealing with Fungal issues</p>	<p>Bacterial issues are difficult to deal with in many crops nor do we have good controls. Copper applications can help suppress bacteria for a while but are not a good long term solution.</p> <p>Bacterial and fungal issues can be directed to Sally Miller (miller.769@osu.edu). Some fungal issues have already been discussed in the VegNet newsletter.</p> <p>http://u.osu.edu/vegnetnews/?s=miller</p>

Q 6. What county is your operation located?

Allen	1
Clermont	2
Clinton	3
Darke	1
Delaware	1
Fairfield	2
Franklin	1
Geauga	1
Greene	1
Hardin	1
Hocking	1
Licking	1
Logan	1
Loraine	1
Lucas	1
Madison	1
Mahoning	2
Mercer	1
Miami	1
Morrow	1
Perry	1
Pickaway	1
Pike	1
Putnam	1
Ross	1
Sandusky	1
Union	1
Warren	3
Washington	2
West central indiana	1

Q 7. Anything else you would like to tell us?

Grower Statement (unedited, 1 name removed for confidentiality)	Extension Response
43 years doing this with all the problems I still love it!!	Keep it up!
We had a blight that appeared in a field of melons and the variety that showed the first problems was Solstice. Is anyone else having problems with this variety. The Aphrodite and Superstar melons in the same field were fine.	Haven't heard of any issues with those hybrids. Suggest contacting Matt Kleinhenz (kleinhenz.1@osu.edu) for further help.
I am trying a pressurized sponge to help with weed control when the weeds get taller than the pumpkins.	Wicks, mops, and other methods to stripe and wipe herbicide on weeds has been tried in the past...good luck and keep us posted if you think it works.
No, thanks	Sure, your welcome.
I planted on June 30th everything is up and looking good i'm going to wait a see how everything goes , Weed control will be an issue in the next couple of weeks.	<p>Hope the crop continues to look good and progress. Weed control is always an issue! Consult the Midwest Veg Production Guide https://ag.purdue.edu/btny/midwest-vegetable-guide/Documents/2019/ID-56_2019.pdf#page=116</p> <p>Or</p> <p>Doug Doohan (doohan.1@osu.edu) for options</p>
It would be useful to know the timing of cucurbit pests and disease so we know how to change spray programs for later planting	<p>The pests, insects, weeds, and diseases will show up, and depending on your location and crop maturity, might be a little delayed.</p> <p>Keep scouting every few days to a week and treat when they exceed the threshold.</p>
no a CHALLENGING year	For sure, let us know if there is anything specific to help with.

<p>I try to keep up by planting in flats and then transplanting later, but even that catches up at some point which will be 2 weeks from now. Its a matter of constantly trying to fit 2 months of work into 2 weeks or even less at times.</p>	<p>Yes, we understand. If it's any comfort, most of our research is 1-4 weeks behind too.</p>
<p>Mouse feeding has been severe this year, possibly related to late planting. Other than that crop looks good but will be late</p>	<p>Mouse feeding on seeds is usually associated with cover crops or reduced tillage. We have been battling them for years on the research station for almost a decade at the station and there is really no good solution at this point, as broadcast baits are illegal. If you can encourage natural predators such as coyotes and hawks to visit your farm, they can be of some help. Unfortunately what seems to work best is disking or light tillage which scares them out of the field for a short while allowing the pumpkin seeds to germinate and escape most of the danger.</p>
<p>Ask us again to report in after the season. Thanks</p>	<p>We will likely do a follow up to see how the season turned out to be...hopefully it won't be as bad as it seems right now.</p>
<p>We are 2 to 3 weeks behind and have several drowned out spots and did not replant anything. At least a 75% loss.</p>	<p>We hope you can salvage as much of the field as possible, sorry to hear about the loss.</p>
<p>I am 62 years old and never had a wet season like this one never got in the field until june 12, as of this date crops are still trying to get established, tomatoes, peppers , etc. Sweet corn is emerged tallest 6 inches.</p>	<p>Yes, very few of us can recall anything quite like this, hopefully this is a once in 100 year occurrence.</p>
<p>Should we start the fungicide sprays earlier than usual since there's so much rain? Outside if 1/2 acre that got drown out, they look pretty good right now</p>	<p>Sprays for powdery mildew should go on at the first sign of the disease (white powder sugar looking lesions). For downy mildew, protectant fungicides should be used until detection, then switch to products specifically formulated for DM. Remember, PM products do not control DM.</p>
<p>For marketing purposes, tell us the current projected Ohio and national pumpkin production compared to normal years.</p>	<p>In Ohio, our numbers will be down from previous years, or at least several weeks later than normal.</p> <p>Nationally, the pumpkin crop is spread from New York to North Carolina to California, so</p>

	I wouldn't expect a huge drop in overall production but I haven't heard any concrete numbers/projections yet either.
Are there potential diseases and pest pressure that I should be aware of due to the wet conditions?	Yes, read up on the current crop conditions in the VegNet newsletter. http://u.osu.edu/vegnetnews/
What was in drained fields are doing OK, so far and replants are coming up quickly and look like a good stand. Fortunately they were the 85-90 day varieties and will be OK..	That's some good news for a change.
Cover crops and green planting are working pretty well except for roots blocking drainage system. Thanks for asking!	Glad it is working out for you so far.
Planted in a timely manner with good stand but slow growing and not a good color	If the soils are wet and N has been lost, this could explain things. Once soil warms up, consider adding a bit of additional N.
Give us cucumber beetle and disease updates	The insect and disease updates are given in the VegNet newsletter...some recent posts address just those issues. http://u.osu.edu/vegnetnews/
Slowest emerging crop ever. But then again, what can you expect with repeated inundations.	Heavy rain, wet soils, cool conditions early, and likely loss of N all add up to exactly what you are experiencing. Once it warms and dries, the crop should begin to grow, might need a bit more N if it was all leached away.

While I have done my best to answer all the questions submitted by the growers, if I did not adequately answer your question or concern let me know or consider contacting those OSU specialists who work in that area. Below is a list for your convenience. I wish you well for the remainder of the season.

Specialist	Area	Contact
Doug Doohan	Weeds	doohan.1@osu.edu
Celeste Welty	Insects	welty.1@osu.edu
Sally Miller	Diseases	miller.769@osu.edu
Jim Jasinski	IPM/Insects	jasinski.4@osu.edu
Brad Bergefurd	Horticulture	bergefurd.1@osu.edu
Matt Kleinhenz	Horticulture	kleinhenz.1@osu.edu
Steve Culman	Fertility	culman.2@osu.edu

In case you are not aware, we are having a Pumpkin Field Day on Aug. 22 at the Western Ag Research Station. Read more about it here

<http://u.osu.edu/vegnetnews/2019/07/25/pumpkin-field-day/>