

MONITORING FOR SQUASH VINE BORER, AN UNSEEN PLANT KILLER

This year we are proactively going to help you win the annual battle against SVB's in your patch, by showing the results of several studies. First due to last years, volunteer help of New England Growers, like Woody Lancaster, Steve Geddes, Al Berard, George Hoomis, Steve Ellis, Hiram Watson, Armand Michaud, Barry LeBlanc, Bob Duffy and many others, who meticulously recorded dates they trapped and caught hundreds of Squash Vine Borers with various bait traps, we can approximately show you' when peak numbers of the mature SVB moths are going to be flitting around in your patch. (and laying vine borer eggs) The article below is compliments of George W. Hamilton, who is a Food and Agriculture Extension Field Specialist from the University of New Hampshire.



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Squash vine borer [*Melittia cucurbitae* (Harris)] is a day-flying orange and black moth. The destructive stage is the larva (caterpillar), and it attacks most types of squash and pumpkin.

Damage

Usually the insect bores through the vines, but occasionally they bore into the fruit of hard squash or pumpkin. The fruit feeding we see especially when there is a late flush of moths. Plants with significant boring frequently show yellowish-orange frass being pushed out of the vines. When that occurs, the vines have already incurred considerable injury. Damage can be severe which greatly reduce yields.

Varietal Differences

Zucchini and summer squash [*Cucurbita pepo*] are very susceptible to attack. Pumpkins are the same species, and are susceptible. Giant pumpkins & Kubocha squash [*Cucurbita maxima*] are susceptible. The moths do not like to lay eggs on Butternut squash [*Cucurbita moschata*], and larvae that do attack it don't survive well, so we call it "resistant". Usually, plantings of this species do not require any SVB protection. Bush-type varieties seem to suffer more than vine-types, within the same group. Vine-type plants often root at the nodes, and this may lessen the effect of the larvae boring in the stems.

Life cycle

This insect has one generation per year. It overwinters in the soil as a larva or pupa, usually about two inches down. In late June the adult moths begin to emerge. They are bright red-orange, with plump bodies and narrow black wings. Body length is about 12 – 14mm (roughly ½ inch). The shape is very wasp-like. The males and females mate, and soon after that the females lay eggs. The females locate squash/pumpkin plants by smell, and lay their eggs singly (not in masses) on the vines, leaf stems, and underside of leaves. Eggs are reddish brown and oval, about 1mm long. Each female can lay 150 to 200 eggs, and the moths are fairly strong fliers. Eggs hatch in 10 – 15 days, and the tiny caterpillars bore inside. The larvae take four to six weeks to mature. When fully grown, they are about an inch long, cream colored, with dark brown heads. They leave the vine and bore into the soil to build a cocoon and pupate. They rest there until the following summer, when the adult moths emerge.

In the southern United States, there are two generations of this insect each year. Here in New England there is supposed to be only one, but we found a very late peak (Aug 22 – 30) of moths in 2010 and 2013, that might represent a second generation.

Traps to Monitor Timing and Numbers

Research shows that shallow pans painted yellow and filled with water can attract and capture the moths. Much more reliable for monitoring are commercially-available pheromone traps and lures. We use white dacron net traps originally designed for corn earworm (*Heliothis zea*), so they are called heliothis traps. They are baited with a lure that releases a sex pheromone that attracts the male SVB moths. Although bucket-type traps are offered to monitor SVB, our tests reveal they catch far fewer SVB moths than the *Heliothis* traps, so we do not recommend them.

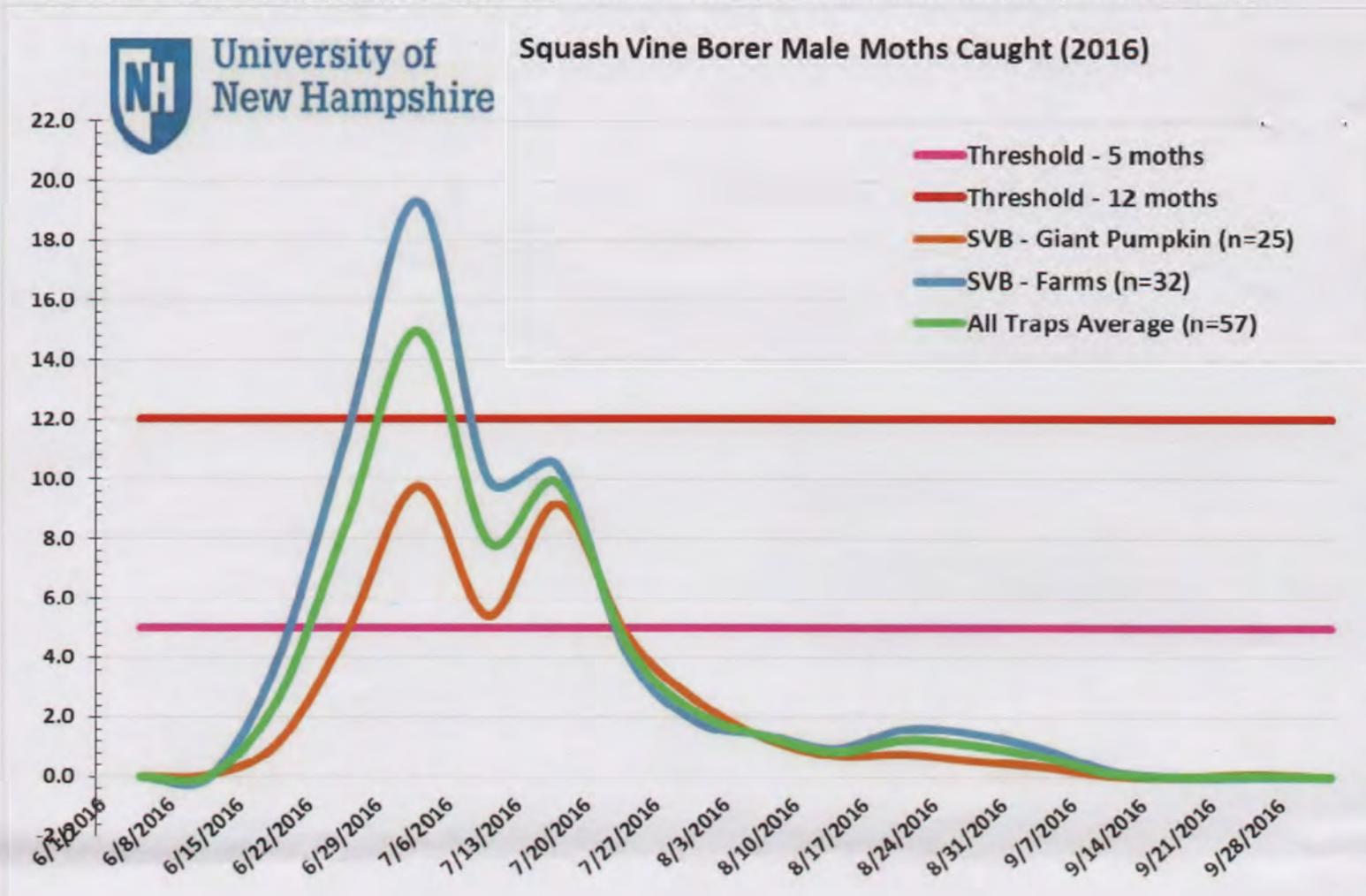
Normal recommendations were to place the *Heliothis* traps (net-type of trap) with Squash Vine Borer pheromone lures in the field after July 4. At some of the farms, we placed the traps in the fields the first week of June. The first trapped male squash vine borer was observed the second week of June, which was two to three weeks prior to the recommended date that traps should be set. Normally, one would expect the last squash vine borers would be seen mid to end of August. The last squash vine borer insect caught was during the week of September 28.

If a conduit pipe is used for support, you may want to add duct tape over the tie points to prevent the trap from sliding downwards. The bracing line that goes to a stake in the ground should be slightly slack. It just provides some support for windy conditions. Distance from the ground to the trap bottom should be about two feet. The trap should go in the squash field, with squash leaves below (but not blocking) the opening. Select a spot where it will not interfere with farm equipment.

Place the pheromone lure in the middle of the opening, and level with the bottom of the trap — not hanging several inches below or above the opening. We have used several devices for securing lures in the position—safety pins, clothes pins, and small binder clips. The important thing is that it stay in the correct position despite wind and weather, and that it be easy to change lures. The lures are individually wrapped, and you store them in the freezer until ready for use. Once unwrapped and placed in the trap, they release the odor for four weeks.

Comparing the effectiveness of the green bucket trap compared to yellow/white bucket trap with both traps baited with Squash Vine Borer pheromone lures compared to *Heliothis* traps (net-type of trap) baited with the same Squash Vine Borer pheromone lures with three traps placed in the same field were made. When comparing yellow/white bucket traps and Net trap to the green bucket traps, again the green bucket traps were poor in catching male moths. If growers rely on green bucket traps to guide spraying decisions, they could be seriously misled.

The Heliiothis traps (net-type of trap) caught slightly higher number of Squash Vine borer moths than yellow/white bucket trap. Based on this, we recommend the Heliiothis traps (net-type of trap) but yellow/white bucket trap can be used. Green bucket traps should not be used.



Thresholds

The number of moths captured (using the Dacron Heliiothis traps described above) can be used to decide whether or not an insecticide treatment is required. For summer squash, the recommended threshold (point where insecticide treatment is worthwhile) is five SVB moths per trap per week. Pumpkins can sustain this level without serious injury. For vining pumpkins, the recommended threshold is twelve per trap per week. Bush types, five SVB moths per trap per week is the recommended threshold.

Management Options

Rotation can help reduce problems with this pest. Moving cucurbits to different fields year-to-year can reduce problems, especially if the fields are far apart. If complete skipping is too difficult for your market, consider growing less susceptible types.

Deep tillage after harvest or before planting in the spring may kill a number of the larvae/pupae in the soil. It can reduce the numbers, but in a heavy infestation it won't make much of a difference.

Some backyard growers report success by physically removing borers from the vines. Growers who have tried this look for frass being pushed out of the vines. Then they carefully make a small lengthwise cut in the vine, and remove the borers. There could be several in one spot. Then they wrap the cut together and hope for the best. Some cover the vine at that spot with soil, which can encourage rooting. Manual borer removal requires too much labor for most commercial growers to follow.

Remove dying vines! If you remove and thoroughly destroy vines that are heavily attacked and dying, this prevents the larvae inside from completing their development, and emerging as moths next year.

Spun-bonded row covers or netting can completely exclude the moths from laying eggs, but they also exclude pollinating insects. If you want to use netting or row covers to control the borers, they must be up during the pollination period, so the result is no fruit.

It is possible to control the borers by injecting the insect-attacking nematodes *Steinernema carpocapsae* into damaged vines.

Chemical Control

The current Vegetable Production Guide lists the insecticide choices, which are subject to change. Insecticides can be very effective in controlling this pest, but they must be applied right when pollinators are also visiting the plants. There's not much we can do about this, except to limit pesticide use to situations where we really need it (usually not on butternut squash for example), and try to de-emphasize insecticides that are especially hazardous to bees. Spraying very late in the day may slightly reduce the risk to honey bees.

Perimeter trap cropping can work, but usually requires too much effort to be practical. It can reduce SVB attack on a large field if no cucurbits were grown there the previous year. You plant a wide border of highly preferred variety (blue hubbard squash) completely surrounding the field of summer squash, then heavily spray the blue hubbard squash plants when borers are flying.

Some Growers in Southern New England are proactively broadcasting a granular insecticide called Spectracide Triazicide in early April. It kills SVB borers and over 100 other nuisance pests like cucumber beetles, aphids, ants, and stink bugs, above and below the ground before they make the transformation to a hungry pumpkin plant maturity, which for SVB's is called 'metamorphosis'.

Cucurbit Yellow Vine Decline, or CYVD. Call it what you will. Its Bad

If you think your plant is infected get a tissue test before doing anything!!

Yellow vine decline is caused by a bacterium (*Serratia marcescens*) and vectored by the squash bug

By Matt Debacko and Steve Connolly and SNGPG members input

The results of this Plant Report not going to be liked. This is a disease that's spreading through commercial crops at an alarming rate (including Giant Pumpkins). (CYVD), can inflict heavy losses to watermelon, pumpkin, cantaloupe, and squash. As noted in the chart below Squash and Pumpkins appear to be the most susceptible. It causes phloem discoloration, foliar yellowing, wilting, and plant decline. Symptoms of yellow vine decline begin to appear approximately 2 weeks after setting your Atlantic Giant fruit. The disease may appear initially as stunting of plants and/or intense yellowing of foliage, followed by a slow decline in your Giant Pumpkin plants health and stoppage of the fruits growth. (In some cases, a sudden collapse of vines may occur with no other symptoms. Vascular tissue (phloem) and the crowns of affected plant vines is often discolored, appearing light brown rather than a healthy translucent green.

We hope the information shared in our article will help you next year. Thanks to a lot of Growers throughout the US and researchers involved with Vegetable Pathology, we were able to put this together.

A number of different diseases including [Bacterial Wilt](#) and [Fusarium Wilt](#) can cause cucurbits collapse in your patch. Unfortunately,

[Cucurbit Yellow Vine Decline](#) is another one to be concerned about. CYVD a relatively new disease in the Northeast, This disease was first detected in Oklahoma and Texas in 1988. In the Northeast, it was confirmed in Massachusetts in 2003. Al Berard, a grower up in Maine, grows about 40 Atlantic Giants each year and he reported seeing it for the first time in his patch, about 15 years ago in 2002. The disease incidence may be spotty to nonexistent in your patch during some years. However, CYVD is capable of causing heavy losses in other years. These 3 diseases and some nutrient deficiencies can look similar, so it is best to get a Tissue Test to confirm your suspicions before pulling the plant in the early stages of the disease. Of course if your Giant Pumpkins are aborting or just stop growing, and plant growth just halts, you can probably make the decision to pull the plant, yourself.

This disease is caused by the bacteria, *Serratia marcescens*, which is vectored by the squash bug (*Anasa tristis*). Adult squash bugs, which are brown and about an inch in length move into fields in mid June/July, in New England. The adults may feed on the base of the leaf stem near the soil of newly set plants. These bugs can cause feeding damage (leaves wilt and collapse) in addition to depositing the yellow vine decline bacterium.

Bronze eggs, which are the shape of footballs are laid in groups of 12 or more and hatch in 1 to 2 weeks. Initially the nymphs are dark with a light green abdomen. Older nymphs are light gray in color with black legs. Young nymphs feed together in groups and require 5 to 6 weeks to mature into adults. If you have about 15 minutes to spare, they are easy to catch on the leaf with Duct Tape,

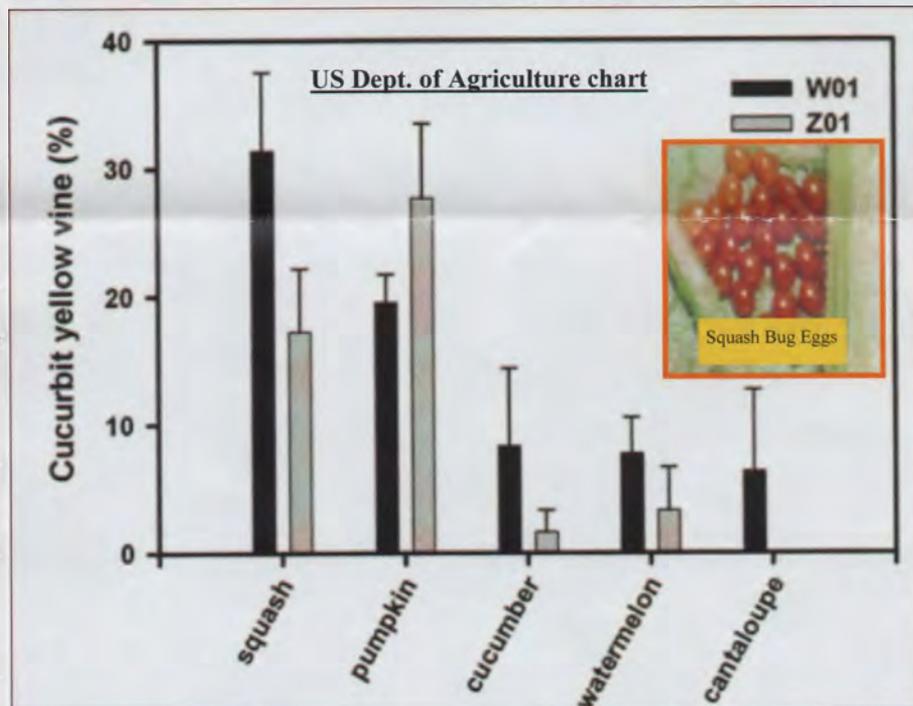
which is harmless to the leaf but will stick to and hold the eggs and nymph's. If you see a mature one, kill it. They move slow, and are very easy to catch and squish.



The key to managing CYVD is early detection and management of the squash bug in the nymphal stages. Similar to bacterial wilt, once the bacteria are inside the plant there is little that can be done to prevent the plant from dying. The squash bugs themselves can also cause direct damage by using the piercing-sucking mouthparts to suck the sap out of the leaves causing portions of a leaf to wilt and collapse. The squash bug is considered a pest on all cucurbits, It has been hanging around in our patches for years causing minimal damage as noted above. **Unfortunately Squash Bugs (also called Stink Bugs) prefers Squash and Pumpkins as it transmit this new disease,** and CYVD is primarily a problem on these cucurbit crops.

It is important to scout for squash bugs in your patch early by looking for the iridescent bronze colored eggs on the lower and upper leaf surface. All life stages may be found on the same plant because the female lays eggs over a long period of time. The unmated adults will overwinter in plant debris or along edges of fields also harboring the bacteria overwinter. The next season these adults move into the crop and transmit the bacteria. A good practice is to mow down the weed growth around the edges of your patch to eliminate an overwintering habitat for these bugs.

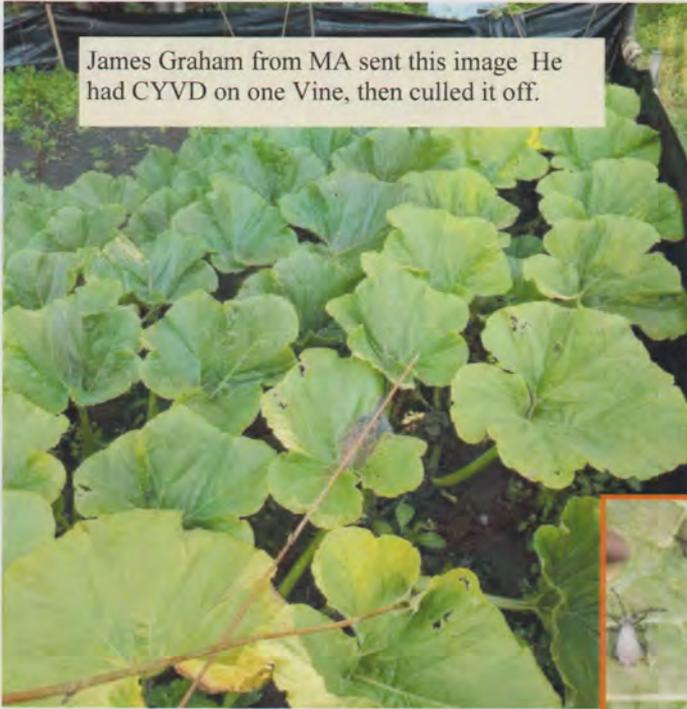
Effective control of yellow vine decline is dependent on early management of squash bugs, beginning at emergence of the plants. Timing is key to successful squash bug control and eliminating squash bugs is the key to yellow vine decline management.



But it is hard to do. These bugs seem to hang on sometimes, inspite of pesticides. Chet Balint from CT reported success killing them using a foliar spray of diluted Dawn Dishwashing soap and water. Use this method or insecticides to control squash bug as soon as possible. Early insecticide sprays should target overwintering adults on young plants. Merit 75WSP is reported to be somewhat effective at killing them. Multiple foliar sprays are needed for extended periods of control. Systemic insecticides used for cucumber beetle control will provide up to 3 weeks of squash bug suppression. Foliar sprays targeting newly hatched nymphs are more effective than sprays used against Adult Squash Bugs. Multiple foliar sprays are often needed for extended periods of control. Some growers are planting a trap crop of early Summer Squash to attract and trick the insect into feeding. Doing this you can catch about 90% of them before the Pumpkins take over. If all else fails, as stated above squish everyone you see.

CUCURBIT YELLOW VINE DECLINE:

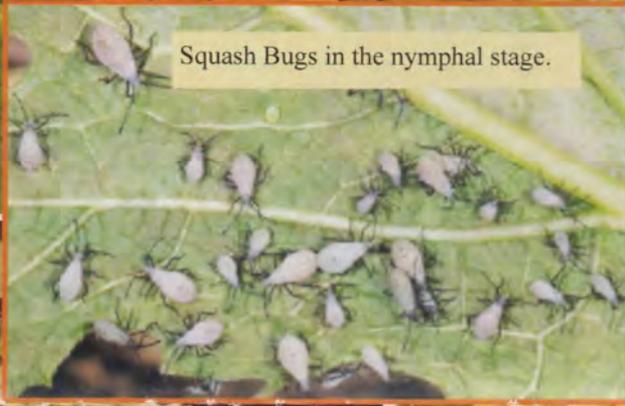
Member photos



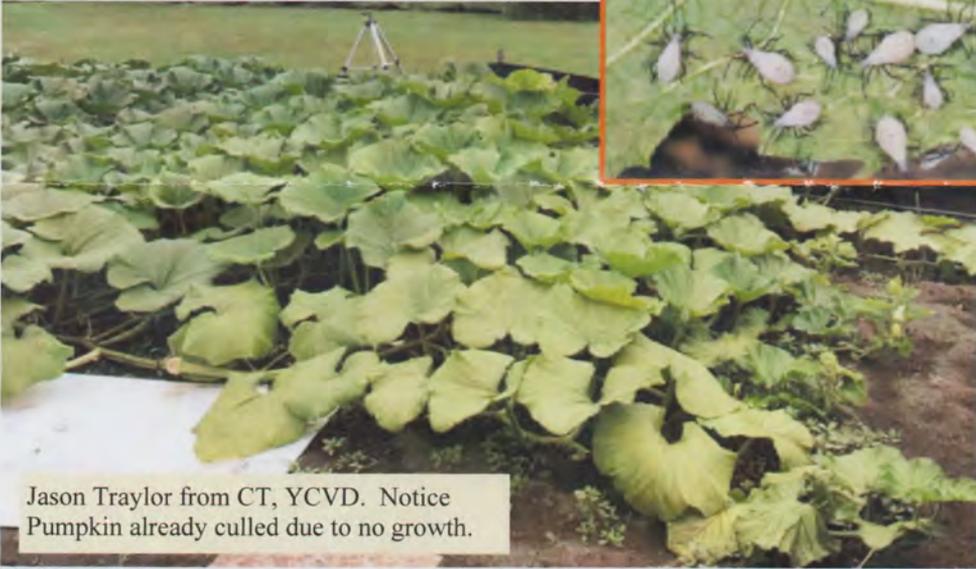
James Graham from MA sent this image He had CYVD on one Vine, then culled it off.



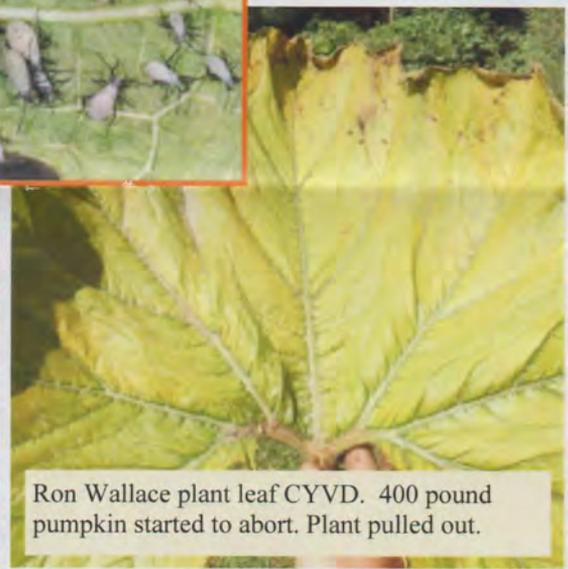
John Ciesieski from Connecticut CYVD on majority of plant.. Ultimately, plant was pulled out with aborted pumpkin.



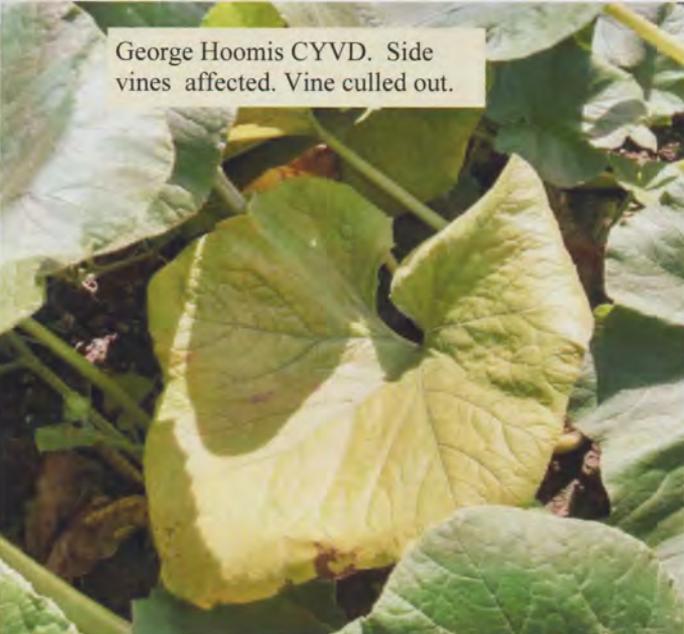
Squash Bugs in the nymphal stage.



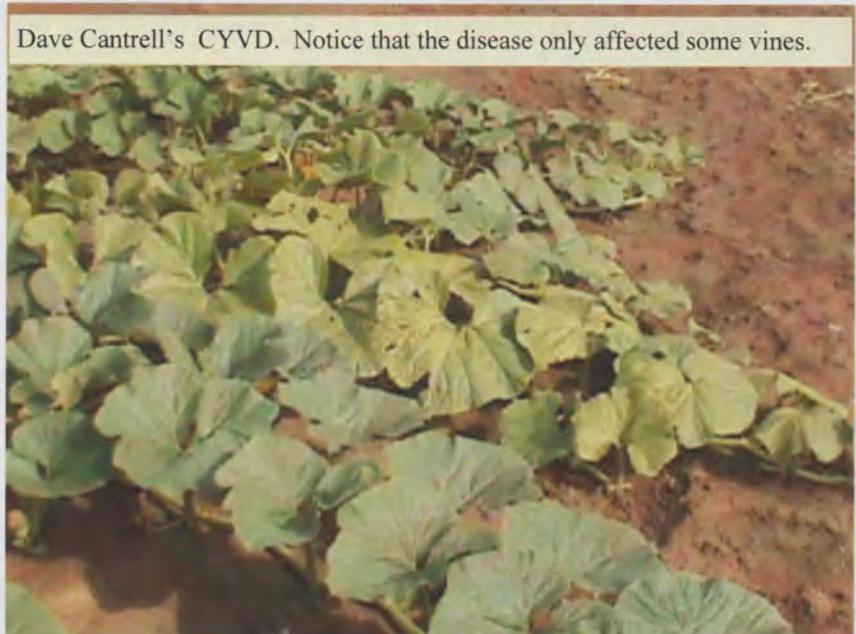
Jason Traylor from CT, YCVD. Notice Pumpkin already culled due to no growth.



Ron Wallace plant leaf CYVD. 400 pound pumpkin started to abort. Plant pulled out.



George Hoomis CYVD. Side vines affected. Vine culled out.



Dave Cantrell's CYVD. Notice that the disease only affected some vines.

GOT GOURD!

These fruit are so much fun to grow. They have a 120 day life span and the fruit should be set 45-55 days before the intended weigh-off. They grow just like pumpkins, need about 600 sq ft/ and have a velvety leaf.

So in New England planting time outside is around June 1st. The pollination and set date is around the 1st week of August for an early October Weigh-off. Here's the cool thing They are mostly not attacked by Squash Vine Borers, Cucumber Beetles, Stink Bugs and ultimately Cucurbit Yellow Vine Disease. That means you can spend more time growing the plant and less time spraying it with pesticides.

BUT powdery Mildew will set in. They are a very prolific plant, meaning you could about 70 Bushel Gourds trying to set on your plant, each year. We did a test this summer and determined that the successful pollination rate is only about 25%. That must be one of the reasons each plant produces so many fruit. And they love to grow secondary /tertiary vines even after you pick the first one off.

Seems like everyone had a Bushel Gourd this year in the corner of their patch. Rookie energy and excitement was everywhere in Pumpkin Land, me included. It felt great just forging ahead with pumpkin knowledge as we tried to grow a BIG Gourd without fully understanding how the plant would react.

They start out real slow. Just sitting in the patch for a couple weeks, with 3-4 leaves, waiting, and waiting, but perfectly healthy. Lots of growers were networking with each other asking what the heck is going on... they are just sitting out there. The Long gourd Growers were a little less stressed by the plants stasis state, because they had gourd experience. Just wait they said, and the plant will grow. Right on que...by the 3rd week the plant took off, growing a foot a day in all directions. That's faster than a Pumpkin Plant at peak growth!.. Another thing worth noting is that the vines don't root as much as pumpkins. About 1 out of every 5 leaf nodes throws a tap root, and there are no top tap roots. The plant is very dependent on the stump for its energy. When the fruit is set (pollination time is around 7-10pm because that's when the flowers open in early August) it sits for about 1-2 weeks. Nothing, then BOOM Rapid growth, and I mean Rapid growth, sets in. The fruit will want to grow blossom end down, but some growers have successfully grown them on their sides just like a pumpkin. Both ways work fine. The World Record is 279 pounds grown by Doug English. I suspect at this writing that this record could fall this year, with so many growers trying it and the GPC recognizing it as an official Master Gardener fruit on a trial basis in 2017. Good luck with your Giant Bushel Gourd this year.



Joe Scherber from Colorado has his Bushel Gourd in a Sling. New Fruit has new Techniques.



Mike Fleming's Bushel Gourd growing in Hanson, MA

Giant Pumpkin Growers must be aware of their MACRONUTRIENTS Here is a great check list.

Replace macronutrients in soils regularly (at least twice per growing season)

Nutrient	Deficiency Symptoms	Comments	Fertilizer Sources
Calcium (Ca)	New leaves (top of plant) are distorted or irregularly shaped. Causes blossom-end rot.	Desert soils and water generally have plenty of calcium, so deficiency problems are rare. Excessive calcium can limit the availability of other nutrients.	Anything with the word "calcium"; also gypsum.
Nitrogen (N)	General yellowing of older leaves (bottom of plant). The rest of the plant is often light green.	Most plants absorb nitrogen in the form of ammonium or nitrate. These forms readily dissolve in water and leach away.	Anything with the words Ammonium, nitrate, or urea. Also manures.
Magnesium (Mg)	Older leaves turn yellow at edge leaving a green arrowhead shape in the center of the leaf.	Plants absorb magnesium as an ion (charged particle), which can be readily leached from soil. May be readily leached from soil if calcium is not present.	Anything with the word magnesium; also Epsom salts (magnesium sulfate).
Phosphorus (P)	Leaf tips look burnt followed by older leaves turning a dark green or reddish-purple.	Plants absorb phosphorus in the form of phosphate. This form dissolves only slightly in water, but pH strongly affects uptake.	Anything with the words phosphate or "bone." Also greensand.
Potassium (K)	Older leaves may wilt look scorched. Interveinal chlorosis begins at the base inward from leaf margins.	Plants absorb potassium as an ion, which can be readily leached from soil. Desert soils and water generally have plenty of potassium, so deficiency problems are rare.	Anything with the words "potassium" or "potash."
Sulfur (S)	Younger leaves turn yellow first, sometimes followed by older leaves.	Plants absorb sulfur in the form of sulfate. This readily leaches from the soil. Sulfur may acidify the soil (lower the pH).	Anything with the word Sulfate.

MICRONUTRIENTS are shown below...Replace when deficiency symptoms are evident.

Boron (B)	Terminal buds die, witches brooms form.	Plants absorb boron in the form of borate. Problems are seen in intensely cropped areas.	Anything with the words "borax" or "borate."
Copper (Cu)	Leaves are dark green, plant is stunted.	Plants absorb copper as an ion. Most soils have plenty of copper, so problems are rare. But get a soil test to be sure.	Anything with the words copper, cupric, or cuprous.
Iron (Fe)	Yellowing occurs between the veins of young leaves.	Plants absorb iron as an ion through their foliage as well as their roots. Uptake is strongly affected by pH. Chelated iron is readily available for use by the plant, other forms of iron may be tied up in the soil.	Anything with the word "iron chelate."
Manganese (Mn)	Yellowing occurs between the veins of young leaves. Pattern is not as distinct as with iron. Leaf fronds are stunted and deformed. Reduction in size of plant parts (leaves, shoots, fruit) generally. Dead spots or patches.	Plants absorb manganese as an ion through their foliage as well as their roots.	Anything with the words Manganese. Often required with zinc application.
Molybdenum (Mo)	General yellowing of older leaves (bottom of plant). The rest of the plant is often light green.	Plants absorb molybdenum in the form of molybdate. Problems are rare in Arizona soils but are occasionally seen on legumes where it mimics nitrogen deficiency.	Anything with the words Molybdate or Molybdc.
Zinc (Zn)	Terminal leaves may be rosetted, and yellowing occurs between the veins of the new leaves.	Plants absorb zinc as an ion through their foliage as well as their roots. High pH may limit availability.	Anything with the word Zinc.

300 pounds is the next Milestone.
Can we do it this year?

BUSHEL GOURDS

TRY EM, YOU'LL LOVE IT!

By World Record holder...
Doug English

Thinking of growing something different? Something that is fun, relatively low-care and pest free? Consider growing giant bushel gourds. In the last 3 years, I have seen a large uptick in interest with these plants. With the addition of new, highly talented growers from the giant pumpkin communities, this is a record that is begging to be broken. We have all seen the tremendous progress of increased weights with pumpkins, squash, melons etc., over the last 5+ years. In contrast, the 279.5 lb. W.R. weight is a slight advancement over records dating nearly 20 years. The origins of the 279.5 lb. gourd seed stock can be traced back to the late 1990's.

Around 1998, Paul Jeffers of Taylorsville, KY acquired bushel gourd seed from a friend in a local gourd society. This seed stock led to his growing a 245 lb. bushel gourd in 2001. Fortunately for the giant gourd community Dan Westfall, of Springfield, MO acquired some of Paul Jeffers seed. Through careful selection of seed over 12 years, Dan kept this strain available. In 2012, he grew his remarkable 177 lb. bushel gourd. This is perhaps the most desirable seed to a gourd grower. This seed grows monster gourds! I have grown over 6 bushel gourds exceeding 200 lb., including the 279.5 lb. from Dan's 177 gourd. It is my belief that bushel gourds have the potential to reach weights that rival watermelon. With increased number of people growing these fun plants and trying different products and growing techniques, records will fall.

The following, will cover Giant Bushel Gourd cultivation that has worked well for me. Keep in mind that St Louis weather is different from New England. St. Louis is the land of high heat and humidity.

Seed germination is similar to growing long gourds. Both gourds have a seed coat that needs to be filed or sanded. Be careful not to damage the seeds root tip. I like to soak the seeds for 3-4 hours in a warm solution of 9 parts water to 1 part hydrogen peroxide (3%). I use a heat mat to germinate the seeds. Gourd seeds germinate best with a temperature around 85-93°F. Germination is typically 3-5 days. However, it may take up to 10-13 days. One thing that is unique with bushel gourds, is the fact they will begin to lose weight once the fruit is mature. So timing them for your weigh off will be important in order to get optimal weights. I like to start my seeds around April 25 to May 5. The Republic Pumpkin Daze (G.P.C.) weigh-off is always the first Saturday in October. After germination, the seedlings are immediately transplanted into 2-3 gallon pots using a professional potting mixture and inoculated with a Mykos mycorrhizae spores. Likewise, I use Hormex rooting solution to lessen transplant shock and encourage root growth. The gourd plants are grown in the pots from 2-4 weeks depending on the soil temperatures.

The greatest enemy to bushel gourds is cool, wet soil. The potted plants are transplanted into the raised bed gardens only after we have warm



days and nights, usually June 1. I think you will find that feeding is simpler compared with pumpkins. I try to grow as large a plant as possible before fruit set. Thus, this stage would be similar to feeding pumpkins. Depending on my soil tests, I like to use organic fertilizers such as Neptune's Harvest Fish Fertilizer, **Renovate Plus** which is a mixture of compost with kelp, seaweed, and micronutrients. I also use **Milorganite** for a slow but steady feeding of the plants. Typically, my soil will have adequate phosphorous and potassium. With warm weather, plant growth can be tremendous. It can certainly rival pumpkins or exceed them. I like using Neptune's Harvest Fish Fertilizer almost exclusively after fruit set unless the plant is showing a nutrient deficiency. I have never conducted leaf tissue analysis of the bushel gourds. Dan Westfall has practiced a simple but effective fertilizer program that centers around 12-12-12 fertilizer prior to transplanting. Rarely has he needed to use supplement fertilizers during the season.

If your beds have plenty of sunshine, there will be little disease pressure on the plants. I have never needed to spray for insects or disease problems. Cucumber beetles can be troublesome when the plants are newly germinated till they are planted into the soil. Once the plants are growing vigorously, the plants seem little bothered from this pest. My raised garden beds are yearly amended with well-composted leaves and composted cotton seed burrs. I don't believe there is anything special about the cotton burr compost other than it adds organic matter to the beds. The organic matter content in the beds range around 13-16%. The bushel gourds seem to very pH adaptable. I grew a 245.5 lb gourd in 2013 with a soil pH around 5.7. The 279.5 lb. gourd bed had a pH around 7.2 Long-term use of leaf compost in my area will result in a higher pH if not corrected. Since 2014, I have used agricultural sulfur in conjunction with tilling in fresh compost.

St. Louis summers can be brutally hot and humid. I use composted leaves as surface mulch. This has been effective in keeping the beds up to 80-90% weed-free. The compost is added once the plants are placed in the beds. Additional benefits of the mulch is keeping the soil temps cooler in the summer and conserving soil moisture.

Bushel gourds have an amazing heat tolerance as long as soil moisture stress is avoided. Overhead watering is performed as needed and always no later than 2 hours before sundown to allow drying of the leaves, thus avoiding possible mildew issues. It is notable that the 279.5 lb. gourd was grown during a very mild summer. High daily temps rarely reached 90° F. Perhaps a region that has high temperatures around 85-90° F is ideal?

The 279.5 lb was grown in a flag pattern due to the bed size constraint. I did not terminate the remaining secondary vines as well the main vine. There was constant removal of all tertiary vines.

-continued...Bushel Gourds by Doug English

I used a
XMAS Tree
Vine Pattern



The 279.5 was allowed to grow in a 450 sq. ft. area. My other bushel gourd plant was given a much larger area around 1100 sq. ft. Like the 279.5 lb. gourd plant, I did not terminate the main or secondaries. All tertiary vines were promptly removed on a daily basis. I really thought this plant was going to be the record breaker since its gourd maintained a larger OTT measurement throughout the season. The plant always looked healthier as well. However, it only weighed 232 lbs. Chris Kent of **Sevierville, TN** was able to grow a 270 lb. gourd in a bed that measured around 200 sq. ft. The only pruning he used was to contain the plant in the bed space provided. This is interesting. Perhaps the secondaries and main vine need to be terminated after fruit set?

A frequent question that is asked concerns vine burying. I've followed Dan Westfall's advice and not buried the vines. Maybe burying the vines is a good option, but I've never had the guts to try it! Bushel gourd plants are more hesitant to root at the leaf nodes than pumpkins; however, gourd roots can be very vigorous, if successful.

Like long gourd plants, bushel gourd flowers will open in the evening. BE PATIENT. Male flowers will precede the females by 1-2 weeks. The plant will let you know when it is time to pollinate. As soon as female flowers show up, it is time. Fruit set will be on the secondaries. By the time I find female flowers on the main vine, it has been too late to get maximum weight out of the fruit. Typically, fruit set has been 12-15 ft. from the stump. I do controlled pollinations since my bee hives are only 50-100 ft. from the beds. It is usual for the first couple of attempts to be unsuccessful. Early evening (5-6 pm) is a great time to pollinate. I try to pollinate at least 3 flowers and wait 2-3 weeks before I reduce the number to one per plant. The fruits will lie on a porous mat. Sand is not used and there has been no problem with rot on the fruit. Harvesting of bushel gourds can be a double-edged sword. If the goal of the grower is to win a weigh off and harvest seed, then the fruit will be compromised as far as saving the shell. In order to have a long-term souvenir, keep the gourd on the vine until killing frost. Typically it will be May or June of the next year before they are totally dried out. I place them on pallets and leave them outside. Cold temperatures are not a problem. There is not a practical way to prevent rot of a giant bushel gourd. The gourd shell will survive if it has adequate shell thickness.

In general, these are fun plants to grow. I feel there is still much to be learned in growing them. A big shout out goes to Ken Desrosiers at bigpumpkins.com for giving these plants a greater visibility in the growing community. Likewise, Hooray to the weigh off sites that are beginning to recognize and award prizes for growing these fun plants!

A 300+ lb. gourd can and should happen this year. Best of luck and don't hesitate to e-mail me if you have any questions. I may be reached at dougvickyenglish@sbcglobal.net.



200 lb
**GIANT
BUSHEL
GOURDS**
by Gene
Lariviere

Frist off I want to thank Steve Ellis for the seed.
(Mr. Charley on BP)

Over the Winter of 2016 I was given the 279.5 English Bushel Gourd seed by Steve Ellis of New Hampshire. Steve and I always kept in touch over the winter months, always busting each other's chops. Lots of sand bagging from the both of us.

This year both of us gave the Bushel gourds a try. Both of us had a blast at the weigh off. Steve weighed his at the Topsfield fair, weighing in at 171.5lbs ! Now that set the bar high ! By that time of year my Gourd was done. Just sitting there waiting to go to the SNGP weigh off. Now I have to admit I was sweating it out thinking Steve's was heavier then mine . So for the time

between the Topsfield fair and Fre- richs Farm Weigh off there was a lot of smack talk between the both of us. Come the day of the SNGP weigh off I was happy to see Steve made it . I was shocked to see it weigh in at 200.00lbs even. The look on Steve's face was priceless ! This is why I love to grow . The friendships and memories you make along the way . In early March of 2016 I added an area of 12X30 ft to my pumpkin patch. Prepped the new area with 6yrds of rotted leaf compost, 3yrds of Rhody Chicken Manure and 10yrds of topsoil from one of my fields. I filled it all in and was ready to go. I had some extra Winter Rye so I through that down and let it grow until it was time to plant.

I started the seed mid May inside after clipping the top to ears that stick out of the seed, sanding the side and soaking it over night. From this point I put it in Promix with Microzyl Pumpkin Pro and through it in an incubator. Four days later it sprouted. On June 2nd I planted it in the patch. I used Wow Pumpkin Pro when planting. Watered it in with Soluble Kelp and Humic . I gave the plant a few feedings early on with Calcium Nitrate "Green House Grade" and urea mate to get things going. I didn't use heating cables but I did have hoop houses for the cold days and nights . I grew it in a traditional flag pattern because I grew it on the edge of my Pumpkin patch. I let the main run the length of the patch. I ended up "Dead-Heading" one side of the entire plant that was against the Pumpkin patch at 6ft. I allowed the other side of the plant to grow out on to the grass. I did prune a lot of the third stage growth, especially on the pumpkin patch side. By late August I had a few pollinated.

All Gourd where on secondary's that I let grow towards the grass. I positioned the gourds so the stem was on top and it wouldn't grow on its blossom or snap off the vine. I wanted to dry it and wanted it to sit stem up . Not sure if this was a smart idea, it was very Risky. I had to loosen vine tension daily . The plant seemed to like the fall weather and really take off. So I had to keep pruning heavily and keep repositioning the vines.

By the end of August the allotted area was spilling over and was full. I pruned down to three gourds on that one plant . The 200 LaRiviere was on a secondary vine about 8ft from the main vine and about 10ft on the secondary. I did spray weekly as needed for bugs and decease. Because I grew along side my Pumpkin patch it got the same feeding program as my pumpkins. If you have extra space and want to try something fun that doesn't take much time or effort you should give Bushel Gourds a try.