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MICHIGAN
HOSTA HAPPENINGS

Newsletter of the Michigan Hosta Society

Oh deer... Bambi is in the garden!
(Part III)

by Don Rawson

Like many gardeners, you're probably pulling out your hair by now as you struggle with deer in the garden. You've spent years of diligent work turning your landscape into something special and then, all of a sudden, you have deer venturing into your garden and ruining everything. Those pesky four-legged creatures certainly have an appetite and can wreak havoc in short order. So, perhaps you have found yourself making a list of what deer will NOT eat in a garden (is there anything?), or worse yet, throwing your arms up in despair.

In this series, we are looking at some rather unconventional methods to restrict or repel deer in our landscapes, beginning with one gardener's installation of a green wire fence and another technique which includes the use of predator lights. In Part III of this series, we will consider utilizing a scent deterrent to keep Bambi from eating our hostas and other prized companion plants.

Deer are persistent and can become a real nuisance to the gardener.

Photo courtesy of Mike Groothuis
Used by permission

Photo courtesy of Cheryl Hancock
Used by permission

How Some Scents are Able to Repel Deer

If you have been attempting to keep deer away, no doubt you've tried some of the commercial products which are available and you have figured out that most have an unpleasant odor... perhaps even before opening the bag or removing the cap. But not all scent repellents are nasty.

Photo from www.conserve-energy-future.com

Scent repellents can be divided into types: first of all, those which interfere with a deer's sensitive sense of smell and, secondly, those which deer associate with danger. A bar of Irish Spring, for example, is so strongly aromatic and offensive that it hampers a deer's ability to pick up weaker scents (like the plants which it would normally detect). On the other hand, human hair, blood meal, and coyote urine are predator scents which can trigger a deer's instinct for flight.

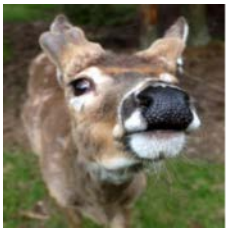
Whitetail Versus Bloodhound: How Well Can a Deer Smell?

Deer have extremely sensitive noses, which is why hunters strategically sit downwind from a deer trail in addition to spraying their clothes and gear with a scent blocker.

Amazingly, a deer's ability of smell is so well developed that they can, in fact, catch a sniff of you from a half-mile away. Researchers at Mississippi State University found that a deer's sense of smell, like a dog's, can be anywhere from 500 to 1,000 times more acute than humans. Furthermore, scientists say that whitetails have thousands of sensitive receptors in their nostrils which they can use to sort out up to six smells at one time.[1]
A deer's nose has 300 million olfactory receptors, whereas a dog has 220 million. Humans, by comparison, have a mere 5 million.

Olfactory receptors are nerve cells that line the inside of your nose. When air with a particular odor enters your nose, these nerve cells instantly transmit messages to the brain, telling you that your partner is wearing your favorite perfume or giving you a cue to take out the garbage.

In a nutshell, deer are smelling machines. They have large nostrils, long whiskers (to funnel the air to the nostrils), they often lick their nose (a damp surface does a much better job at snagging odor molecules), the nose is long (6-9", compared to yours 2-3"), their noses have massive amounts of scenting tissue (over 100 sq. in.), and they have a brain which drives it all. Their noses' acuteness and efficiency are beyond our comprehension.

		
5 Million Receptors	220 Million Receptors	300 Million Receptors

Instead of a smooth, black surface, the deer's nose is actually quite bumpy, further increasing the surface area, thus making a deer more capable of capturing those smelly air molecules. With 300 million scent receptors, the sense of smell is a deer's ultimate superpower — superior even to its hearing. Although those big ears give them an advantage in collecting sound, in comparison to humans, it's nowhere near as powerful as their sense of smell.

Photo courtesy of Clint McCoy,
"The Science Behind a Deer's Sense of Smell & Scent Control"

What Scents Repel Deer?

Today, there are many deer repellents on the market – some expensive, some requiring repeat applications, and some which may or may not work. None really work for every situation since much depends upon factors such as deer preferences and population pressure (too little food for too many deer, for instance).

It is helpful to remember some facts about deer: they are afraid of anything new, yet learn quickly and readily adapt to your latest strategies, so using several different repellents and rotating them periodically is the key to success. And, if you don't have a serious problem with deer yet, then NOW is the best time to use deterrents. Train the deer which live in the area to stay away before they ever have the chance to find your delicious hosta foliage and scapes.

Some smells that deer find offensive – such as Milorganite (processed sewage) and rotten eggs – can also be offensive to humans, while others are pleasant and highly aromatic. Perennial herbs like yarrow, tansy, and artemisia can be used along with gardening favorites of culinary herbs consisting of chives, dill, oregano, thyme, mint, and tarragon. These are a few of the plants which deer don't like. Interplant them throughout your garden. Cloves, which many people keep in the kitchen spice cabinet, are effective at repelling deer as well as fending off some types of insects including mosquitoes. A derivative of clove oil is used in several commercially available pesticides which are designed to control a number of household and garden pests. As a lawn and garden spray, clove oil in such commercial products acts against thrips, aphids, ants and spider mites on ornamental plants. Ants, moths, and flies do not care for the scent of cloves. Crushed cloves can be placed in a mesh or cheesecloth pouch to be hung in areas where these pests have been problematic, such as near the entrance to your home or screened-in patio.

Cloves are the aromatic flower buds of a tree (*Syzygium aromaticum*) native to Indonesia, and are commonly used as a spice. They are often used in the cuisine of Asian, African,

Photo from Wikipedia

Mediterranean, and the Middle East, lending flavor to meats, curries, and marinades, as well as fruit (such as apples, pears, and rhubarb). Cloves may be used to give aromatic and flavor qualities to hot beverages, often combined with other ingredients such as lemon and sugar.

Making a Scent Dispenser

Deer, with their very sensitive noses, tend to avoid areas with an intense smell. Therefore, you can sprinkle cloves generously in powdered form or spray a liquid solution on the border plants throughout the garden. Some homemade recipes call for the addition of mint, rosemary, and cinnamon. Because plants that deer feed off are on the ground to heights of about six feet, this is the area where your homemade deer repellent should be applied. Sprayed products require frequent reapplication, particularly after any rain. Adding a surfactant ("spreader sticker") helps the concoction to act as a glue to make the spray stick to leaves, and this will help to reduce the clove oil from washing off so quickly.

To keep deer from munching on your favorite hosta specimens, a simple but effective scent dispenser can be made with just a few items: a Solo cup, shoestring, strips of terrycloth, a shepherd's hook, and of course, a small bottle of clove oil (available on Amazon).

With just a few common household items, a simple scent dispenser can be easily crafted. This device effectively provides a sweet aroma of cloves around your most prized hosta specimens, which Bambi will find somewhat repulsive. The clove oil can be purchased on Amazon.com, 4 fl. oz. for about $15.

Photo by Don Rawson

Simply cut a couple strips of terrycloth, tie a shoestring around them, then dip them into the clove oil. Thread the shoestring through a hole in the bottom of the cup and hang it on a shepherd's hook like a bell. For optimum results, the scent dispenser should be located directly above or immediately next to your most valued hosta, as that is where the scent will have the greatest potency. Green Solo cups can be purchased from Amazon, which will blend into the landscape better than the bright red cups.

Some folks swear that clove oil is a reliable means to repel deer. Try this method of installing clove scent dispensers throughout your garden and let us know how well it works for you. What do you have to lose?

Photos by Don Rawson

[1] Busted: 5 Things You Don't Know About Deer Senses," www.realtree.com

For Further Reading:

Proven Deer Repellant from the Kitchen!
https://www.dvo.com/newsletter/weekly/2019/2-22-752/cooknart7.html

Natural Deer Repellent Essential Oils
https://yardandgardenguru.com/natural-deer-repellent-essential-oils/

6 Amazing Cloves Uses in the Garden
https://balconygardenweb.com/amazing-clove-uses-in-the-garden/

How Well Can a Whitetail Deer Smell?
https://hunttoeat.com/hunting/big-game-hunting/how-well-can-a-whitetail-deer-smell/

7 Fascinating Facts About Whitetail Noses
https://www.realtree.com/deer-hunting/articles/7-fascinating-facts-about-whitetail-noses

Hosta breeding program at Walters Garden

by Hans Hansen

I have been working with hostas at Walters Gardens since 2009 (13 seasons). Prior to my time at Walters, I worked with hostas in Waseca, Minnesota for 15 years and during that time I germinated thousands of seedlings. I would like to tell you about my breeding program and what has worked well for me.

The pollination and hybridizing at Walters Gardens takes place in a greenhouse environment. The hostas I use for hybridizing are grown in 3-gallon pots, except for the miniature varieties. The majority of the stock plants are advanced generation, streaked variegated selections from the internal breeding program. A few breeders are non-variegated plants to be used for the pollen. I also have non-variegated hostas grown outdoors in the ground that I harvest pollen from so that I don't use valuable greenhouse space. The greenhouse is kept just above freezing during the winter (38°F) to mimic the natural outdoor growth cycle.

Hostas are watered automatically with drip irrigation and fertigation. Fertigation is the process of directly applying fertilizer to a crop through the irrigation system. The drip system keeps the foliage and flowers dry which is important as moisture will kill the pollen. The major benefits of having the plants in the greenhouse include:

- Keeping insect pollinators (bees, wasps, butterflies) out of the screened-in environment which keeps the crosses from being contaminated from stray pollen and does not require the crosses to be bagged.

- There is also control over rain, which would ruin the pollen, and also lose a day of crossing.

- Greenhouse pot culture makes it easier to maintain the plants and remove green reversions, as well as divisions that have settled out into a marginal or centered variegation pattern.

- Pot culture makes it possible to keep plants in a cooler to delay emergence and match plants with early flowering time to later season flowering – or put plants in a heat chamber to accelerate their growth.

- Having plants in a greenhouse protects them from fall frosts which is important for seed maturation on very late season varieties.

We allow about 3 months from the date of pollination until collecting the seeds. Each flower pollinated on the scape is individually labeled. At the season's end, each flower scape is cut from the plant and put into a jar of water in the head house to be processed. We have a zero-tolerance policy for virus, so a clean knife is used on each plant to harvest the flower scapes. When the seeds are ripe, the seedpods are removed from the flower scape and put into petri dishes or plastic boxes depending on how many pods there are per cross. Some crosses may be replicated up to 20 times. Each year we make an average of 425 different sets of hosta crosses with the range being between 240 sets in 2012 to as many as 830 sets of different crosses in 2021. In 13 years working with hostas, we have made over 5500 sets of different crosses.

The seeds are removed from the pods, and allowed to air dry in petri dishes. When they are completely dry, the petri dishes are covered and then each cross is accessioned and entered into our hybridizing database at work. I use an Excel spreadsheet to record the year the cross was made, the pod parent, the pollen source, the date the cross was made, the times it was replicated, and then it is assigned a number. For example, 21-01 could be H. 'Diamond Lake' streaked x H. 'Seasons in the Sun'. The first number is the year the cross was made, the 01 would be the first in a series of many that was entered into the data base. In future years if selections are made from an individual cross, they are assigned a 3rd number. An example would be 21-01-5 indicating at least 5 seedlings from that cross

2022 Michigan Hosta Society's Calendar of Events

May 21 Spring Get-Together at Hosta Hillside, 9 am until? (luncheon and lecture at noon)

June 8-11 American Hosta Society National Convention Minneapolis, Minnesota

June 18 MHS Plant Sale/Hosta Show at Hidden Lake Gardens. Detailed information to follow.

June 24-26 Great Lakes Region Tailgate will be held in West Michigan. More information when available at https://hostacollege.org/tailgate/

August 21 MHS Fall Meeting, luncheon and plant auction.

were marked for future evaluation.

We sow our seeds in open community containers beginning in mid-January and use a standard nursery flat that holds 8 plastic containers. Each plastic container is labeled with the cross code taped to the side, as well as a plastic label with the same code and the cross (double labeling is great insurance in case a tag disappears). We use Metro Mix 702, a standard seed mix and lightly cover the seeds with the same soil. A top dressing of Turface (calcined clay) and grit covers the top after that. We find that Turface holds the moisture easier and is a great indicator of water needs.

The flats are not covered with domes, as the greenhouse environment is fairly humid. The greenhouse is about 70°F ambient temperature with bottom heat under the flats at 10 degrees warmer.

Germination occurs in 10-14 days at this temperature. At the full one-leaf stage, we begin to cull and transplant. Since each cross is labeled with the parents, it is fairly easy to cull for variegation. At the transplant stage, we only transplant the variegated seedlings into 1-inch cells. A standard tray holds 72. The seedlings are grown in the same greenhouse environment for 6-8 weeks until they are well rooted. Then a portion of each cross is potted into 3" cells to grow on. A standard flat holds 20 cells, and most crosses are capped at 20 plants at this stage. Only the most promising are kept. Variegated seedlings that have reverted; those which are weakly variegated or have too much variegation; and, those which are poor growers are discarded. We keep the seedlings growing and fertilized in the greenhouse until early June when they are

lined out into our shaded trial area in the field to grow on and be evaluated in the ground. They will stay in that environment in the field for an additional 3 to 5 years until they have begun to stabilize, or cycled back into the breeding program. At this stage they will have an additional number assigned, and the letter C or M, to indicate center or marginal variegation. The final evaluation stage takes place back at an in-ground shade house at Walters Gardens where they are further evaluated for garden performance, distinction, and ultimately commercial release.

Editor's Note: We will continue with Hans' *Hosta Breeding Program at Walters Gardens* in the next issue of Hosta Happenings with a Q&A with Hans.

Photos in this article provided by Hans Hansen

Unusual Woodlanders for the Shade Garden: Black False Hellebore

by Don Rawson

Pure class.

A stately perennial of the first rank.

A true aristocrat of the garden which is seldom available.

Expensive? You bet, and worth every penny!

Sensational pleated foliage which knocks the socks off any hosta when it emerges.

Blooms in early summer for several weeks with over 1,000 flowers on each scape.

Deer proof.

An excellent long-lived plant of outstanding hardiness.

It's easy to find enthusiastic endorsements for *Veratrum nigrum*, commonly known as **Black False Hellebore**. Actually, the plant is not a hellebore at all, even though the genus name *Veratrum* is the Latin word for hellebore. Go figure! It is likely that the word origin for hellebore goes back to the Greek *elein*, "to injure", as fawns that ate it would suffer severe consequences. Accordingly, the word hellebore came to be associated with various plants that had high toxic content, and it was only natural that the name carried over from Europe be applied to the new plants of the genus *Veratrum* which were unrelated to their namesake but were similarly poisonous. All parts of *Veratrum* are poisonous if ingested by humans.

***Veratrum nigrum* in its native habitat**

Photo courtesy of Natusfera. Used by permission.

Used as an ornamental in European gardens as far back as 1773, *Veratrum nigrum* is a somewhat rare but outstanding perennial that is well suited for full sun to shade, though it grows best in shade or partial shade in wet or moist conditions. A widespread native of Europe, central Asia and China, it typically grows 4 to 6 feet tall by 2 to 3 feet wide. Large beautiful leaves up to 12" in length are parallel-veined, deeply pleated, and arranged spirally around stout erect stems which are topped in summer by branched panicles of small, star-shaped purplish black flowers. *Veratrum nigrum* is used to add height to a garden and as a means of providing a darker backdrop to more brightly colored plants and flowers in the foreground.

Veratrum nigrum in the garden of Don and Pam Rawson

Photo courtesy of Don Rawson

Breathtaking, deeply-ribbed foliage of Veratrum nigrum

Photo courtesy of Loz Dingwall. Used by permission.

While some of the *Veratrum* species are likely to be of interest only to serious students of the genus, *Veratrum nigrum* in particular has great merit as a garden plant. William Robinson wrote in 1883 that "The leaves are handsome, and most effective when the plant is in small groups, either in the rougher parts of the pleasure ground or by wooded walks, thriving in peaty soil." More recently, Christopher Lloyd summed up the opinion of *Veratrum* aficionados when he wrote, "A colony of any well-grown *Veratrum* species has me standing agape before it."

The plant is typically rated for hardiness Zones 5-8, although some sources say that it survives even to Zone 4. That is plausible, especially if it is given a protective winter mulch.

The sensational pleated foliage of *Veratrum nigrum* is one of the highlights of spring when it suddenly emerges. The leaves are broad and strap-like, clasping at the base with conspicuous parallel veins and then attached spirally up the stem. Thick and leathery, the foliage looks superb all summer long. It is qualities such as these which led one gardener

to claim that the "Sensational pleated foliage knocks the socks off any hosta when it emerges."

Leaves spiral up stems which reach 4 to 6 feet in height

Photo courtesy of Natusfera. Used by permission.

Ideal conditions for *Veratrum nigrum* are a deep, fertile, moisture-retentive, humus-rich soil. It succeeds in full sun if the soil does not dry out, but prefers a position in semi-shade. Grows best in a cool woodland garden or a north facing border. Plants are long-lived and can be left in the same position for years without attention.

The striking, chocolate maroon flowers are hermaphrodite (having both male and female organs) and are pollinated by bees, flies, butterflies. Unfortunately, the flowers smell of rotten fruit, which, of course, is why they are visited by flies.

Now, the bad news: The reason *Veratrum nigrum*, or Black False Hellebore, has not become more popular is neither because it is unattractive nor difficult to grow, but because it is slow... painfully slow. It can take as long as ten years in ideal conditions to reach maturity. No doubt you've heard the expression, "It's a slow grower, but well worth the wait." Well, that certainly is the case with *Veratrum nigrum*!

Furthermore, *Veratrum nigrum* is difficult to find and somewhat expensive in the United States. Currently, it can be mail-ordered from Edelweiss Perennials in Candy, Oregon (www.edelweissperennials.com). It is

Chocolate maroon flowers of Veratrum nigrum have an unpleasant scent

Photo courtesy of Helen Isaksson-nyman.
Used by permission.

sometimes also available for mail order from Far Reaches Farm in Port Townsend, Washington. The reason for its limited supply, no doubt, is because it is one of the true pains to produce commercially. While plants can be grown from seed, germination is very slow and can be erratic. One source advised, "Please be very patient, and do not discard the seed tray, no matter how long it takes for germination to occur."

If you purchase it from a nursery, be aware that plants will be small. Finding blooming-sized plants of this species is pretty much impossible.

As a final note, remember that this is a beautiful but POISONOUS plant. Mark the location of where it is planted so that you do not dig it up once it has died back and handle it by mistake. Always wear gloves when in contact with *Veratrum nigrum*. And do not feed it to your pet goat!

This is a great companion plant to add to your wish list. I heartily recommend it!

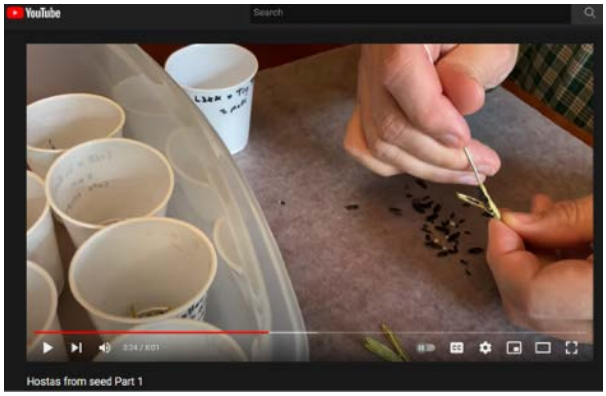
If purchased from a nursery, plants will be small

Photo courtesy of Robin Callens. Used by permission.

New Video Shows How to Grow Hostas from Seed

Courtesy of Don Rawson

Two new YouTube videos recently posted by David Teager of Garnet Valley, PA demonstrate the process of growing hostas from seed. The first video (Part 1) is 8:02 minutes long and covers harvesting hosta seed, drying the seed, removing it from the pods, and detaching the wing from the kernel. David also explains the difference between streaked versus stable hostas.



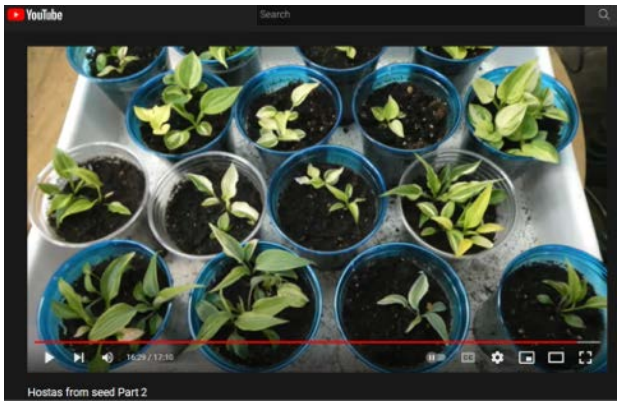
The YouTube video titled "Hostas from seed Part 1" shows how to plant hostas from seed. This easy – to – understand presentation is very helpful for anyone interested in hybridizing.

P

Hostas from seed Part 1
https://www.youtube.com/watch?v=tcL-wqzME5E

Part 2 is 17:10 minutes long and covers seed starting mix, the addition of a fungicide to the mix, the process of planting in 18 oz. cups, and week-by-week growth to the four-month stage. Growing hostas from seed looks like a lot of fun!

Every cup planted by David germinated. Once the humidity domes were removed, it was exciting to see that many seedlings displayed streaks of white, yellow, and gold!



Hostas from seed Part 2
https://www.youtube.com/watch?v=4LHFFno6N9k

David Teager is the current President of the Delaware Valley Hosta Society, and the Editor of the Online Hosta Journal of the American Hosta Society. He has contributed many informative articles to the club's website at www.delvalhosta.org.

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Photos by Marla Greanya

Membership in the Michigan Hosta Society

If you wish to find out more about Hosta, please consider joining the Michigan Hosta Society. We welcome new members and friends who share our interest in hosta and their many uses in the landscape. The society maintains a large hosta display at Hidden Lake Gardens near Tipton, where many varieties of hosta can be seen. 'The Benedict Hosta Hillside" is one of only two nationally designated Hosta display gardens.

Activities of MHS include:

- A summer tour of gardens that feature Hosta
- An auction/sale of hostas contributed by members
- Speakers and educational programs
- Local chapter meetings
- A workday and information sharing at Hidden Lake Gardens in Tipton where the Society has a demonstration garden
- A listing of MHS members who retail Hosta

Members receive the Michigan Society Newsletter “Hosta Happenings,” as well as the newsletter of the Great Lakes Regional Hosta Society. If you are interested in joining please complete the attached application form.

You may also want to join The American Hosta Society. They have two colorful journals each year, and an annual national convention featuring a Hosta Show, garden tours, scientific programs and a plant auction.

Contact: www.americanhostasociety.org

MHS Membership Application

Last name: _____

First name: _____

Last name of 2nd member: _____

First name of 2nd member: _____

Street Address:

_____

City: _____ State: _____

Zip:_____ Phone:_____-_____-_____

E-mail:

_____

Choice of **either** black and white newsletter via First Class US Mail or full color newletter via e-mail. All the pictures are in color and there are often bonus pictures not included in the mailed version. Please check one: Mail ___ E-mail ___

Check if you wish to receive an updated membership directory when published: _____

New Member: _____ Renewal: _____

Dues are $15 per household for up to two people, good for 2 years.

Total remitted: _____

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