

# DURHAM MASTER GARDENER NEWSLETTER August 2011

Michelle Wallace, Consumer Horticulture Agent—Durham County and EMGV  
Coordinator  
North Carolina Extension Service



## In This Issue:

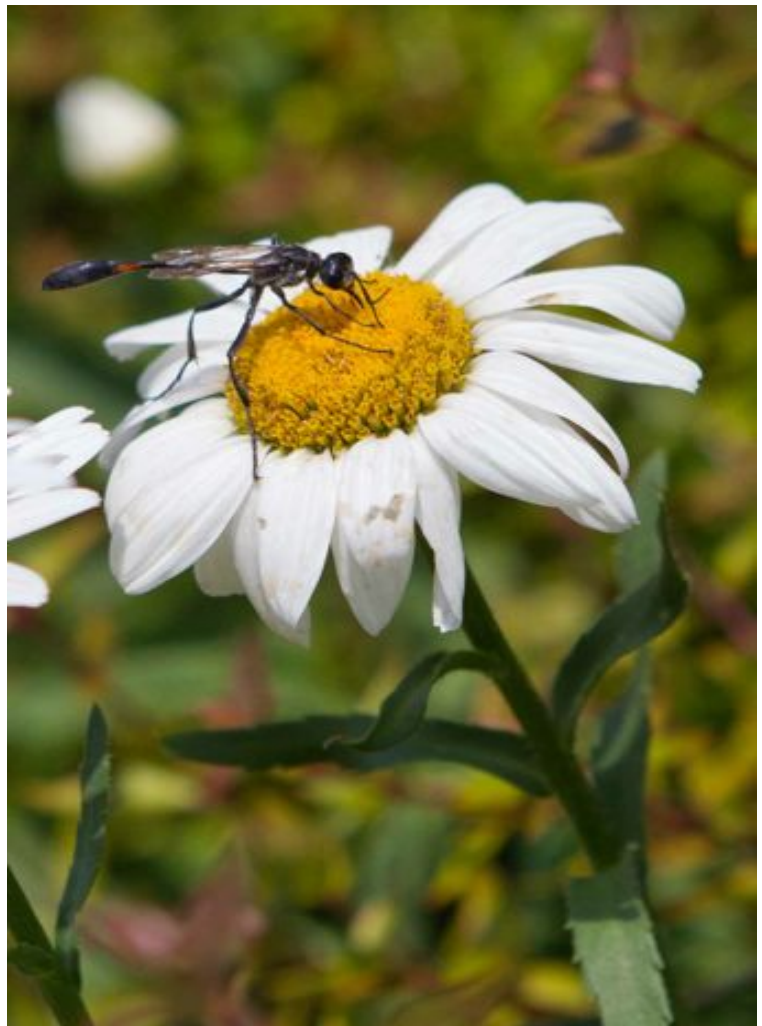
Sustainable Gardening Part I	p. 1
How Safe is Glyphosate?	p. 7
Ramblings	p. 8
Container Gardening With Leanna Murphy Dono	p. 10
Tidbits	p. 11
A View From a New EMGV	p. 12
Doug Roach: Meet Charlie!	p. 13

Durham County Center  
721 Foster Street  
Durham, NC 27701  
MGV Desk: (919) 560-0528  
Hort. Agent: (919) 560-2526  
Fax: (919) 560-0530

Picture courtesy of Rick Fisher

*Editor: Of course this is a complicated subject, about which many people have written. As EMGVs we know that there are many things we cannot take for granted: just look at how differently we regard water than we did ten years ago, for example. I visualize this as a three-part series: the first talks about general principles, the second discusses water, and the third looks at soil and plants. Any contributions are welcome! Much of the literature on the subject is silly or so idealistic that it isn't practical to follow. An example of this is a suggestion we should garden for wildlife, including deer, because these creatures fertilize our gardens. Just tell yourself that when deer have demolished half of the plants in your garden.*

## **Sustainable Gardening— Part I**



Two recent developments caused me to begin looking seriously at sustainable gardening: (1) the recently published articles citing a connection between glyphosate and birth defects<sup>1</sup>; and (2) *The New York Times* article stating that the state of Iowa has lost half of its topsoil. “[The loss of topsoil] means an increasing loss of fertility that has to be replaced chemically. It marks a failure of stewardship, since these soils will have to feed future generations. And every particle that washing away causes problems downstream, including sedimentation—which can increase the risk of flooding—and the alarming dead zone in the Gulf of Mexico, the result of runoff of the chemical fertilizers farmers apply to make up for lost fertility.”<sup>2</sup>

Both these developments should get us at least to think about the feasibility of sustainable gardening. But what exactly is sustainable gardening? “The accepted definition of sustainability...is to meet present needs without compromising the ability of future generations to meet theirs. Applied to gardening, this means using methods, technologies, and materials that don’t deplete natural resources or cause lasting harm to natural systems.”<sup>3</sup> We gardeners, along with the landscaping industry, are responsible for 5% of our nation’s air pollution. Did you know that the EPA estimates that the amount of gasoline we use to mow our lawns would fuel 1.16 million cars for a full year of driving [10]?<sup>4</sup>

We have much to atone for: 30% of the water residential customers use goes towards landscape irrigation—and most of that goes to watering grass [12]. We are also responsible for introducing our share of invasive species to the American landscape: “[A]n impressive array of the worst invasive plant species are the legacy of the unwise gardener” [13]. One example of a plant introduction gardeners are responsible for is that handsome, obnoxious perennial, *Lythrum salicaria*, commonly known as purple loosestrife; today we spend over \$1 million annually trying to eradicate it.

As any gardener knows, a garden is an unnatural creation. We pull out weeds while we place plants next to each other that would never meet normally in the wild: we place Mediterranean plants next to Chinese plants before throwing a native American plant into this jambalaya. Grouping our plants according to their environmental needs, focusing on light, water needs, and soil, we rarely consider their birthplace. “In their original homelands, these plants coevolved over time with suites of animals, fungi, bacteria, and other plants in relationship to one another.”<sup>5</sup> Our gardens fight to be something else, constituting one of the main reasons every conscientious gardener is a weeder. Many of our plants are man-made hybrids that would never have arisen on their own in the wild.

Fortunately for us gardeners, the “alien landscape” begins to form its own ecosystem. Our native hummingbirds enjoy both *Vitex agnus castus*, the chaste tree, from the Mediterranean region, and our native

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<sup>1</sup> See the following article in the Newsletter on this subject.

<sup>2</sup> “Washing Away the Fields of Iowa,” *The New York Times* (May 4, 2011). Part of the erosion is occurring due to the larger number of intense storms, but the principal cause is due to the “intense push to create greater yield on more acreage and less incentive than ever to practice sound soil conservation.” Another cause is the emphasis on growing just two crops, corn and soybeans, rather than rotating between three and four crops.

<sup>3</sup> Christopher, Thomas, Editor. *The New American Landscape: Leading Voices on the Future of Sustainable Gardening* (Timber Press, Portland, OR, 2011), p. 10. Future reference will be in brackets [ ].

<sup>4</sup> Amy Hill, editor par excellence, notes that poorly tuned engines from mowers, weed wackers, and the like contribute to greenhouse gas emissions.

<sup>5</sup> Deardorff, David and Wadsworth, Kathryn. “Sustainable Solutions,” *The New American Landscape*, p. 23. Future references will be in brackets [D&W].

*Campsis radicans*, the trumpet vine. Local insects pollinate our exotic species. Plants adapt over time to their new home.

The following is what drives me crazy about much of the writing of sustainable gardening: “Natural systems are balanced. They need no input of supplemental water from irrigation; all the plants are adapted to the typical water regime of their habitat. They do not require inputs of fertilizer; all the output of plant and animal waste is composted on site and nutrients are recycled. They do not need inputs of pesticides and do not produce outputs of pollution. Beneficial organisms regulate pests and diseases” [D&W, 24]. All this is supposing that we live in an ideal world but the South, which traditionally had plenty of water, now has large areas of drought. In an ideal environment our jambalaya of plants wouldn’t need supplemental water or fertilizer—but even our drought tolerant plants need help until they are fully established, which sometimes will take a year or longer. Roses, even Earth-Kind roses, benefit from an occasional feeding if they are to look their best. And, worst of all, anyone reading this paragraph would think it would be okay to compost carnivorous animal waste, which is a dangerous practice.

In the past thirty years five philosophical approaches have developed concerning the creation of the American sustainable garden:

- **Xeriscaping**—the first decade of the 21<sup>st</sup> century saw serious droughts in the Piedmont—in fact I can think of only one summer (2005) when we had enough rain. “The goal of xeriscaping is to eliminate the input of supplemental irrigation water” [25]. First developed in the US Southwest where residents established thirsty gardens in the 20<sup>th</sup> century<sup>6</sup>, the idea has spread. One caveat: here in the Piedmont our winters can be wet ones, which precludes our using some plants suitable for xeriscaping.
- **Native Plant Landscaping**—this philosophy demands planting plants that are native to that region, forbidding the use of exotic plants, even if they are well adapted to our growing conditions. The theory behind this philosophy holds that native plants are more resistant to pests and pathogens because they have adapted to our environmental conditions. One caveat: what constitutes a native plant? Must it be native to our Piedmont or can it be native to the state of North Carolina? *Magnolia grandiflora* is native to one small area in eastern North Carolina; is it to be considered a native or non-native to the Piedmont?
- **Wildlife Gardening**—most of us with deer problems probably are groaning at this philosophy as we feel we do nothing but garden with and for wildlife. However, this philosophy is less restrictive than the previous. Birdwatchers and butterfly lovers plant their gardens with birds and butterflies in mind. Planting to encourage wildlife brings hopes that these creatures will help to control insect pests.

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<sup>6</sup> In the first half of the 20<sup>th</sup> century, people began to flock to Arizona as it was one way to escape hayfever and other allergies and it was a good way to leave the snow behind. However, because Phoenix sat aquifers, these transplants began to put in lawns and plant the type of gardens they had left behind. The result today is that Phoenix no longer provides an escape from allergies and it is dangerously close to running out of water.

- **Organic Gardening**—enjoying a resurgence, organic gardening restricts the use of agricultural chemicals, employing instead “natural substances mined from the earth or obtained from plants and animals.” Commercially processed fertilizers are forbidden; the only acceptable fertilizers are those obtained from natural plant and animal byproducts. One caveat: some “natural” substances are very potent and can be dangerous.
- **Permaculture**—originating in Australia, permaculture consists of combining “productive plant materials” (fruit trees, berry bushes) with “herbs and perennials in permanent gardens of compatible plants.” The theory follows that with the establishment of these “healthy natural ecosystems,” each member will “contribute something of value to the whole” [D&W 25-27].

No one is guaranteeing that, by following any one of these philosophies, your garden will be trouble-free. However, prevention is one of the keys to a successful sustainable garden:

- **Put the right plant in the right place**—as EMGVs, we preach this maxim because we know it’s right. I, for one, am now coping with a shadier garden as it matures and I have once-thriving plants that are struggling because they are now not receiving enough sun. Consequently they are stressed and need to find new homes. Likewise, if you plant a water hog, at least plant it where it is easy for you to water it in case of drought. The



- picture above demonstrates what happens when a plant is placed in the wrong place. In this case umbrellas are used to shield the hydrangeas from the sun. My thanks to Pam Reading for supplying the photograph.
- **Choose plant cultivars that are genetically resistant**—*Monarda* and *Phlox* are likely to get powdery mildew, which adds nothing to their appearance. Limit yourself to those cultivars such as *Phlox* ‘David’, ‘Minnie Pearl’, and ‘John Fanick’ that are resistant to powdery mildew. In the Piedmont, *Photinia fraseri*, Red-tip Photinia, will always come down with the fungal disease caused by *Entomosporium*—it’s simply a question of when—but the Chinese Photinia, *Photinia serrulata*, is equipped to withstand this fungal disease. Of course it all depends upon whether you have decided to use some exotic species in your garden or are limiting yourself to native species.
  - **Manage the planting site to permit free airflow and adequate light**—pruning can often open up a site to provide for more air movement and light exposure. This will also allow plants to dry more quickly after a rain and we know wet leaves invite fungal diseases.
  - **Use the right amount of water**—too much water is as lethal as too little water. Know your soil and know which areas of the garden provide well draining soil. Apply water to the root zone, not the foliage. For this reason, avoid overhead sprinkler systems.

- **Protect your plants from temperature extremes**—this in many cases is hard to do. Many plants stop photosynthesizing when temperatures rise above 85°, while warm night temperatures cause plants to burn up more fuel, sometimes more than they can make during the day, resulting in starvation. Heat stresses plants; we’ve all had the experience of being greeted by refreshed plants when the mercury falls to 60°.
- **Build healthy, biologically active soil**—synthetic fertilizers can release their nitrogen too quickly. Organic fertilizers release their nutrients slowly. If your plants need a shot in the arm, think about using fish emulsion—yes, it does smell—or a liquid foliar spray.
- **Plant polycultures, not monocultures**—Polycultural gardening reduces the risk of disease and pests. Many experts now advocate the mixing of perennials, herbs, and vegetables. Attract beneficial insects by using herbs such as fennel and dill or the perennials, *Achillea* and *Rudbeckia*.
- **Rotate plants**—anyone who has grown tomatoes knows the necessity of rotating certain crops. Plant marigolds between your tomato plants as the marigolds repel certain nematodes.
- **Attract or purchase beneficial organisms**—provide water and shelter for birds as many birds eat insects exclusively. Others eat snails and slugs [D&W 27-30].

The last word of caution from Deardorff and Wadsworth is: **resort to chemicals only if it’s absolutely necessary**. Chemicals first arrived for garden use after WWII when chemical companies had to do something with their large surpluses. Because much of the world needed food—and needed it quickly—chemical fertilizers and pesticides made their appearance on the gardening scene.<sup>7</sup> In place of chemicals, there are acceptable organic remedies available, all bearing “OMRI” (Organic Materials Review Institute) on their labels. Regardless of what you use—chemical or organic—avoid using them near bodies of water.

Rick Darke<sup>8</sup> acknowledges that most of us are not strict native constructionists but instead we maintain a blend of native and exotic plants in our garden. Gardens are not static but are constantly evolving, either through our efforts or Mother Nature’s. Many of us, when we encounter a cool new plant, are more concerned about its potential weediness than we are as to whether it’s native or not.

**“The most sustainable gardens are those that consume the fewest resources.”** However, through the process of forming our gardens, we have altered the plot so that it no longer even remotely resembles its original environment. “In most cases the topography, drainage characteristics, soil structure and chemistry, and the patterns of sunlight and shadow have been profoundly altered.” Even when we forego using herbicides, pesticides, and fungicides we still water, adjust the pH, add compost and other soil amendments. Instead of concentrating on using native plants, which are not necessarily suited for our changed topography, Darke advocates selecting “plants based upon their true ability to thrive without our constant support” [Darke 88-89].

As gardeners, we pore over our winter catalogues with their enticing descriptions of hot new plants. “Beyond the superficial appeal of the unfamiliar, the underlying motive for the introduction of plants

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<sup>7</sup> I remember well seeing DDT routinely sprayed on neighborhood streets in the late 1940s and early 1950s with no one thinking anything of it. Amy Hill says that her father remembers neighborhood kids running behind the DDT trucks, playing in the pesticide fog!

<sup>8</sup> Darke, Rick. “Balancing Natives and Exotics in the Garden,” *The New American Landscape*. References will be [Darke] in brackets.

from distant places is that exotics often serve real purposes that can't be fulfilled by natives alone" [Darke 90]. This I think is the crux of the reason we still purchase exotics: they provide texture, color, and other attributes that we can't always find among our native plants. Think about *Acer palmatum* with its many cultivars—coming in all sizes, colors, and shapes, there is a spot in most gardens for a Japanese maple. At a time when most of the garden lies dormant, camellias fill an important niche, supplying us with flowers from late autumn to early spring. Tropical plants with their large leaves add much needed texture to the garden.<sup>9</sup>

While Darke goes along with the use of exotic plants in the sustainable garden, he is clear about what we should NOT tolerate: (1) plants that cannot survive without the use of herbicides or pesticides (think of hybrid tea roses); (2) tropicals that need heated greenhouses throughout the winter; (3) moisture-loving plants that require an excessive amount of water; and (4) exotic plants that displace natives from their habitat (think Japanese wisteria).

According to Darke, invasive plants "wouldn't exist unless they were better adapted to current conditions than so-called native species. In fact, most natives are no more than earlier arrivals that established themselves because, at the time, they had a competitive advantage" [Darke 94]. The changes we have seen occur in many of our local habitats are man-made—think kudzu, which the federal government introduced on purpose to stop erosion during the 1930s. Our landscape is littered with badly planted Bradford pears, *Pyrus calleryana*, and Leyland cypresses, x *Cupressocyparis leylandii*, because twenty years ago landscapers and builders discovered these two quick growing species and immediately overplanted them.

We have to know our soil when we introduce new plants. Our prairie native, *Oenothera speciosa*, the delightful pink evening primrose, runs amok when planted in good soil. In my garden it can only exist in one place where it receives no soil amendment, no watering (from me) and bakes in the afternoon sun. Only then can I contain it. *Anemone hybrida* rivals *O. speciosa* in aggressive speed and I would caution anyone against planting it. In these two similar examples, the native plant and the exotic performed in the same manner, earning them a "thug" appellation. Up north where the growing season is shorter, these plants are more tolerable in the garden.

As Rick Darke points out, it's okay to mix native and exotic plants—provided we have done our homework. For the sustainable garden, refrain from using plants that require excess fertilization or need the protection offered by herbicides, fungicides, and pesticides.

To be continued: water is an essential resource, as we are sadly learning with the dearth of rain during our summers.

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## **How Safe is Glyphosate?**

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<sup>9</sup> By tropical plants, I am referring to ones such as *Musa basjoo*, *Colocasia*, and a variety of palms that overwinter well in our Zone 7. Those that require a heated greenhouse to winter over are not suitable choices for the sustainable garden.

**F**or years Monsanto has sought to assure us that glyphosate, the herbicide marketed as Roundup<sup>10</sup>, was harmless to humans although a few critics have long refuted its safety. Because Europeans have long suspected that glyphosate caused birth defects in the embryos of laboratory animals, Earth Open Source, “an organization that uses open-source collaboration to advance sustainable food production,” decided to investigate.<sup>11</sup> The leading herbicide in the US, glyphosate is also widely used in Europe.

Beginning in 1974 when it first brought it to the market, Monsanto marketed glyphosate as “among the world’s most widely used herbicides”. In 2004 the EPA estimated that the US consumed between 103-113 million pounds of glyphosate, with home and garden use totaling 5 millions pounds a year.<sup>12</sup> By blocking the formation of a specific enzyme needed to make amino acids, glyphosate effectively kills most plants.

Studies in Canada and Sweden have suggested a link between glyphosate and non-Hodgkin’s lymphoma, a finding backed up by a 2003 review of “Midwestern farmers [that] showed exposure to glyphosate was associated with an increased incidence of non-Hodgkin’s lymphoma” [Cox, 12]. The Agricultural Health Study—sponsored by NIH and the EPA—suggested that there was some type of connection between glyphosate use and myeloma.

Currently the EPA classifies glyphosate as a Group E pesticide, meaning that there is “evidence of non-carcinogenicity for humans”—but what on earth does that mean? Exposure to glyphosate is linked to an increased threat of miscarriage as well as an increased incidence of ADD [Cox, 13].

How long does glyphosate stay in our soil? This isn’t at all clear as the USDA states the soil life can be anywhere from 2-174 days. Certainly there is evidence that glyphosate has had an impact on birdlife when sprayed on those plants providing birds with either food or shelter. It has demonstrated that it can cause genetic damages in fish and insects and it is harmful to amphibians [Cox, 14].

“All pesticide formulations are actually toxic soups, a mixture of the active ingredient (the registered pesticide) with a variety of other chemicals such as solvents, surfactants...and emulsifiers—the inerts.” Because inert ingredients do not have to be listed on the pesticide label, you only know a part of the story when reading the label. Inerts may make up 99% of the pesticide’s formula and may be more toxic than the active ingredient.<sup>13</sup> One of the inert ingredients in Roundup® is polyethyloxyated tallowamine (POEA), which is three times as toxic as glyphosate.<sup>14</sup>

Because glyphosate has the potential to remain in the soil far longer than originally believed, there is genuine fear that it can leach into the water supply. This is a realistic alarm because glyphosate binds tightly with our clay soils, enabling it to move along with the soil particles into our groundwater.

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<sup>10</sup> Amy Hill points out that *The Chicago Manual of Style* states it is unnecessary to use ® and ™ in running text so I am officially saying goodbye to these special characters in the Newsletter.

<sup>11</sup> [www.huffingtonpost.com/2011/06/24/roundup-scientists-birth-defects\\_n\\_883578.html](http://www.huffingtonpost.com/2011/06/24/roundup-scientists-birth-defects_n_883578.html), p. 1.

<sup>12</sup> Cox, Caroline. “Glyphosate: a Herbal Factsheet,” *Journal of Pesticide Reform* (Winter 2004, Vol 24, No. 4), p. 10. Future references will be [Cox] in brackets.

<sup>13</sup> [www.beyondpesticides.org/pesticides/factsheets/glyphosate.pdf](http://www.beyondpesticides.org/pesticides/factsheets/glyphosate.pdf), p. 1

<sup>14</sup> <http://environmentalcommons.org/glyphosate.pdf>, p. 2.

There are potentially other problems with glyphosate as well: Don Huber, Professor of Plant Pathology at Purdue University, states that, “It is well-documented that glyphosate promotes soil pathogens and is already implicated with the increase of more than 40 plant diseases; it dismantles plant defenses by chelating vital nutrients; and it reduces the bioavailability of nutrients in feed, which in turn can cause animal disorders.”<sup>15</sup> Bear in mind that the USDA does not regulate or test herbicides and pesticides, while the EPA has nothing to do with genetically modified crops so the right hand knows little about what the left hand is doing. With a product such as Roundup®, which is an herbicide dependant upon genetically modified crops, there are bound to be gaps in the research.

There are several things to keep in mind about using glyphosate:

- There are right now no definitive answers as to whether glyphosate is safe or not. Certainly for a herbicide, it is *relatively* safe—but that doesn’t mean it’s safe.
- Roundup and glyphosate are not the same thing, as Roundup contains inert ingredients, which might be dangerous. Another product, Rodeo, is a mixture of only glyphosate and water. There are also other glyphosate-only products on the market and these might be the ones to choose. The Nature Conservancy has now stopped using Roundup® in favor of glyphosate-only products.<sup>16</sup>
- The Europeans are actively testing the safety of glyphosate.
- Be careful of drift. Never spray glyphosate on a breezy day.
- Use as little as possible.
- The EPA reports on glyphosate are pretty unreadable, with much of the data coming from Monsanto and Dow Chemical.

What is painfully clear is that there is much research to be done on glyphosate before we can verify its safety. Most of the information supplied to the EPA comes from Monsanto, understandably anxious to preserve this multi-million dollar industry. As the footnotes demonstrate, environmental groups are very concerned with the safety of glyphosate. Is it safe to use? The answer right now is that no one knows.

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## **C M: Ramblings**

**W**eed. *n* A plant considered undesirable, unattractive or troublesome, esp., one growing where it is not wanted. (American Heritage College Dictionary; also Nan Len).

A recent op-ed column in the *New York Times* discussed the similarities between “weeds” in Great Britain and the New World. The conclusion was that the United States and Great Britain are two great nations joined by a common obnoxious flora. Many of the plants we label as weeds came across the ocean both with British ships and the British army back in the 18<sup>th</sup> century. For example, what we proudly call Kentucky blue grass is known by a much more prosaic name in GB, and is a common nuisance in English back gardens. Apparently, the progenitors migrated along with the early trade, then the troops.

Global travel is nothing new, only faster these days, and plant specimens and seeds, wanted or not, went both ways between the early colonies and old Europe along with trade and migration. By this time it may

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<sup>15</sup> Huffington Post, p. 5.

<sup>16</sup> [www.for-wild.org/download/roundupmyth/roundupmyth.html](http://www.for-wild.org/download/roundupmyth/roundupmyth.html), p. 4.



be nigh impossible to determine which of our garden weeds are native to North America and those that came as stowaways.

Whatever their source, “weeds” are unwanted plants in our vegetable beds, flowerbeds and lawns. So, how to deal with them? The modern answer, of course, is herbicides. We have pre-emergent, post-emergent and immediate eradication products available to us. Lawn care services generally use pre-and post-emergent compounds, which they apply on a pre-determined schedule. The immediate actors, e.g., glyphosate-based compounds, can be applied anytime that weeds are actively growing.

However, having had a ginkgo tree in our front yard suffer a near-death experience due to poor control of lawn herbicides (not by my hand, I hasten to add), I have become much more cautious about using herbicides for weed control. If the choice comes down to eradicating weeds in our lawn or preserving wanted plants, I’ll choose wanted plants.

Regardless, weeding of the flower and vegetable beds has to go on. The big problem with weeds is not so much that they upset our ideas of the ideal lawn/bed, but that they compete with wanted plants for water, space and light. Glyphosate-based herbicides are great products. They treat the specific plant they are sprayed on, go to the roots to effect a near-permanent kill and don’t migrate through the soil to affect the good plants. The downside is that they are indiscriminate, that is, anything they contact may be killed, even if it’s your favorite tree. Spraying on windy days, over-spraying an area on the notion that “if a little bit is good, a whole lot is better” or just plain carelessness during application, can lead to some really bad results. There is a definite place in your weed control regimen for chemical herbicides, but their use should be restricted to those times when other methods have failed, and when you can strictly control their application. A thick, healthy turf and proper mulching are the best natural methods of weed control, but even then weeds manage to break through.

Generally, I prefer hand weeding for relatively small areas. It puts you at eye level with your plants, which lets you notice anything that might be going on; it’s discriminate, regardless of whether the wind is blowing or not, so no other plants are endangered; it encourages personal knowledge of just what this weed is called; and it’s personally satisfying. For me, the last reason may be the most important. The feeling I get when I pull a clump of crabgrass, or a thistle, out of my beds is the same that I get pulling a Japanese beetle off of a rose bloom and dropping it into a bucket of soapy water: Gotcha!!

Spring’s early weeds, relatively scant and easily managed, have given way to the muscular, aggressive forms of high summer. Crabgrass, Dallis grass, nettles, greenhorn, nutsedge and the omnipresent common Bermuda grass are the biggest culprits in my yard. They are all opportunistic, and will take advantage of any opening they get.

When weeding, I like to use what I call a “dandelion digger.” It’s well-sized and has a comfortable handle and a shaft which ends in a flattened, double-pronged blade that looks like a mutant screwdriver. It goes into even moderately hard ground easily, and gives enough leverage to pry out an entire clump of crabgrass at one time. I find that immensely satisfying.

Hand weeding involves bending and stretching, both good exercises. It also provides that feeling of a job well done when you straighten up and survey your once-again nice neat beds. Makes you feel really virtuous (and gives you an excellent reason to sit down with a cold beer when it’s done). Not much more you can ask of life.

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## **Container Gardening With Leanna Murphy Dono**

**O**ur own Leanna Murphy Dono gave a dynamite presentation on “Container Gardening” to the Durham Garden Forum in June—and if you missed it, you missed seeing a dynamic force in action. A previous professional container gardener designer, Leanna knows a lot more about this subject than the myriad of authors who end up giving us pretty pictures of their designs in rather dull books on the subject of container gardening. Here are some of the points Leanna made:

- Obviously container gardening needs containers. These containers should be at least 12 inches wide and 9 inches deep as anything smaller dries out too quickly. For vegetables you need to go even bigger, fifteen inches deep. Containers need holes—do not even contemplate planting in holeless containers as the water needs to drain out. Leanna isn’t a fan of saucers as they collect water, which attracts mosquitoes.
- Use a soil-less mix or a professional mix; do not use garden soil and do not use potting soil. She recommends buying a soil-less mix with time-release fertilizer granules but cautions that NCSU has concluded that those “moisture granules” are simply a waste of money. For additional nutrients you may want to add compost.
- Container plants demand more fertilizer than those in the ground. The daily waterings—and yes, you do have to provide daily water—disperse the time-release fertilizer very quickly so plan on fertilizing every 4-6 weeks. Leanna recommends a fish emulsion over a synthetic liquid fertilizer. Regardless of what you decide to use, follow the instructions as using more fertilizer than recommended is harmful.
- Next you have to decide where you want the container to go. Full sun = six hours a day; shade = morning sun or under tree cover. Have a hole in the garden? Containers are a quick and easy way to fill the gap.
- Reconcile yourself to a role of water provider, even if the plants you choose for the container are drought tolerant. Containers during our hot weather dry out quickly. In the spring you may be able to go two to three days between waterings; in the summer this is a daily chore. Therefore, when you place your containers, keep the idea of “easy access to water” in mind. There are simple drip irrigation systems available that when attached to a timer can do much of this work for you. This is a popular method in California where the rains are seasonal.
- Now it’s time to choose your plants. Keep in mind:
  - ✓ Color: think of the color wheel. Colors opposite one another on the wheel create contrast. Think of purple and yellow for a Wow! combination. Those colors next to one another are harmonious colors and are more soothing.
  - ✓ Texture and Shape: if you are using perennials, texture and shape considerations are important for the simple reason you’re not going to have continuous color during the life of the container. Look at the leaves and include leaves of different size. Don’t choose plants all on one level, but have some that are tall and some that grow downwards.
- Consider the scale of the design to the space. One container might look puny near a tall entranceway but a grouping of containers with one holding taller plants might be more aesthetically pleasing. Do group containers together as it is pleasing to the eye.
- Don’t limit your container choices, as lettuces or Swiss chard go beautifully with pansies as do herbs such as thyme and parsley.
- Think in terms of the seasons. The sun is vastly different in spring than it is in the fall for example so spring colors tend to be lighter, more pastel in nature whereas autumn colors tend toward the or-

anges, bright yellows, and dark reds. Intersperse with green grasses and decorative branches. You might want to change your containers with the seasons as this is a quick way to give the garden a fresh look.

Leanna also talked briefly about water container gardening, which was very informative. She showed us the mosquito and algae controls to use, emphasizing that this was the time to use our clay soil as the soil-less soil she advocates for container use will simply float to the top instead of holding down the roots of the plants. Needless to say, water containers should not have holes.

The fifty attendees gave her an outstanding ovation at the end. For more information about the Durham Garden Forum, contact Sara Smith at [sksmith@duke.edu](mailto:sksmith@duke.edu).

## Tidbits

**MD:** Here's a little tidbit I recently learned: having adored Queen Anne's Lace along the roadside and in cut flower arrangements for years, and having been totally unsuccessful in bringing it to my garden (I think both legally and illegally!), I sought out John Martin's expertise at Cedar Creek Gallery and the experts at Niche Gardens. I had never researched the fact that it cannot be transplanted and must be started from seed each year. I purchased 3 plants from Niche, planted them in my garden and now am admiring my very own QAL, which I expect to re-seed and be growing again next year! It's amazing that such small things, considered weeds to many along the highway, can bring such joy!

**KF:** Jim Massey had a cool story about daylilies, which he related to a good friend of mine: a woman came in first thing in the morning one Saturday and bought a bunch of daylilies, which she potted up. She took them to the church for her grandfather's funeral service, placing them in front of the altar, where they were the only decorations in the church. When the service was over, each attendee took home a daylily to plant in memory of her grandfather. Many thanks to Mary Jane Morrow for relating the story, which Jim subsequently confirmed.

**GC:** One of the joys of being a Master Gardener Volunteer is learning about new plants and I experienced that joy last month during our trip to the Holly Hills Farm when I was introduced to Crinum. I did not know that Crinum are among the South's most classic and cherished plants. They thrive with little care, once established, and are even deer resistant. Each bulb produces long, broad leaves and rising from the foliage are thick scapes, each bearing a cluster of lily-like flowers. The plant foliage alone is a great addition to the garden. Jim had a wonderful selection, well established in pots so I treated myself to two "Ellen Bosanquet" (burgundy), two "Mrs. James Hendry" (white) and two "Pink Trumpet" (pink). They transplanted easily and are very happy in their new home. A special thanks to Kit Flynn for arranging this trip to Holly Hill Daylily Farm.

**FM:** Success with squash after implementing best advice tips and researching the plant's needs! I did everything suggested for getting squash to grow. First, I planted in a new bed, covered with floating row cover until the plants were quite large, put cardboard cylinders around the base of the young plants, kept them evenly watered, planted with borage all over the bed, planted beside of beets and beans (the companion planting idea which I have studied and tried this year). Though the heat did stifle pollination somewhat, I am continuing to get good quality fruits. I see no evidence of borers yet. Letting the spa-

ghetti squash run UP, however, does not seem to be such a good idea. The fruits are too heavy.

**CC:** I'm drawn to yellow "CLEARANCE" signs like bees on bee balm. Now is the time to check out those clearance sales! I bought four 3-gal Coral Princess Cape Fuchsia, *Phygelius aequalis*, for \$2.00/each at one of the big box stores. And a dwarf fountain grass for \$2.50! I've got the perfect spot for these beauties, on the NE side of my house. See you at the clearance tables?

**CC:** We have many, many pillbugs, which have eaten several flowering plants to the point of death. Other than that, just the usual guerilla squirrels and deer. *Editor: for those of you who aren't familiar with pillbugs (I wasn't), there is more information at:*  
[http://ipm.ncsu.edu/current\\_ipm/99PestNews/99News16/ornament.html](http://ipm.ncsu.edu/current_ipm/99PestNews/99News16/ornament.html).

**LC:** I'm thrilled with the *Nepeta racemosa* 'Walker's Low' that I planted last year in one of my flower boxes. A few of its amazing characteristics are: it's low maintenance, drought tolerant, deer and rabbit resistant, prefers full sun, and has beautiful blooms spring and summer. It does spread rapidly, making it ideal for filling in bare spots and edgings and borders. Please give it enough space. I didn't know that it would spread so much. *Editor: more information about this 2007 Plant of the Year can be found at:*  
[http://gardening.about.com/od/plantprofile1/a/Walkers\\_Low.htm](http://gardening.about.com/od/plantprofile1/a/Walkers_Low.htm).

**CW** sent in an interesting article detailing the relationship between ants and aphids. Anyone interested can read it at: [http://missoulia.com/news/local/article\\_8163ebde-a90b-11e0-9265-001cc4c03286.html](http://missoulia.com/news/local/article_8163ebde-a90b-11e0-9265-001cc4c03286.html).

**KW:** Here's a Handy Hint I got from Nan Len. For finely ground eggshells for the compost pile, as you use eggs, put the shells into a container in the freezer. ( I'm using an old egg carton.) When it's full, dump them into your blender, add a little water, and blend away. Pour the slurry into your compost pile. The fine grind will help them break down quickly. Thanks, Nan!

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## **TS: The View from a New Master Gardener**

Let me clarify for the record that I am not yet a certified EMGV since I just finished the class this spring. But, I'm working toward that goal and I'd like to share just a bit about my experience so far.

I was assigned a terrific mentor, Donnie Phillips, and he has greatly helped me to begin to feel like a real EMGV. Donnie met with me after class one day this spring and helped me see the forest for the trees, so to speak. One thing I particularly found motivating was his advice to jump in and get my feet wet .... if for no other reason than it becomes awfully hard to complete the number of volunteer hours required for certification if you let it go until the winter. Donnie joined me for my first stint as an MG in front of the public, he gave me a thorough and realistic introduction to manning the MG office, he showed me how it's done by inviting me to his presentation on keeping critters out of the garden, and we had a fine time entertaining anyone we could get to stop by the EMGV table at The Festival on the Eno.

But, as wonderful as it is to have a great mentor, I've met many other equally terrific individuals who also wear the EMGV nametag. Whether manning our table at the Durham Farmers' Market, interacting with other EMGV folks at the Eno Festival, working at the MG office, attending a Durham Garden Fo-

rum presentation, or even working on committees in person or via the Internet, I have yet to find an EMGV who was not welcoming and easy to work with. Probably the main thing I have learned from these other Master Gardeners is that I can do it! I don't know the Latin names for plants, I can't tell one kind of grass from another, and I nearly failed trying to grow a vegetable garden in hay bales this summer. But, I can answer questions because we have a lot of resources at our disposal and because I've learned that John Q. Public doesn't expect us to have all the answers. John Q. does like answers, but mostly he or she wants to talk about gardening, about why their broccoli, crepe myrtle, or tomato plants are not doing well, and to share experiences with us. That just requires me to be a good listener and I can do that.

At this point, I am very glad I signed up to become a Master Gardener, and I am finding it more rewarding and enjoyable than I honestly expected. My wife can tell you the big grin I got on my face the first time I wore my light green MG polo shirt with my official nametag, but it goes beyond that. In short, it's fun!

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**DR: Meet Charlie!**



Doug Roach, a member of the new class of EMGVs, is introducing us to Charlie, a native of Miami. Doug and his wife, Kathy, visited the Miami pound in 2003 where Charlie at the approximate age of two adopted them. A Smooth Fox Terrier with bad dentition, Charlie weighs twenty pounds and is now ten years old—yet most times acts like your castoff grandfather on his worst day. He is NOT a big fan of the recent move to North Carolina as his prey has changed from lizards and possums (which he had mastered and regularly feasted upon) to squirrels and deer, which still cause him considerable consternation. As Doug says, “He’s a good dog....Even our sons were rarely quite as entertaining or as fiercely loyal as is Charlie. He’s quite simply everyman’s dog.”



## — PERSPECTIVE —

Seeing a “raised bed” for what it truly is...  
NOT as a place to grow onions.