“Gardening is about developing a relationship with where you live, right down to the unique quality of the light, the acid in the rain, the rocks in the soil." ~  Carol Stocker

****

Happy Spring!

Amazing, but spring is right around the corner (it’s already here according to the calendar!). At least I’m hoping so. Like everyone else – IT’S MORE THAN TIME FOR SPRING!!!!  I do hope the winter has treated you well – and that you’re snow has melted!!

The living world continues to be a great place to spend time in–and more and more people are getting involved in growing all kinds of things. My interests have continued to expand in the areas soil development, nutrient dense food production, and ecological and sustainable landscaping–and –after a couple of conferences–I’ve discovered a newly developing area of study—epigenetics (more on that later).

As I planned for the year ahead and the plants I wanted to grow, I had your gardens in mind, and how you might like to adjust them given changing priorities. Local food is still really hot – and more and more people want to mix veggies into their gardens. You won’t believe me, but I have pared down the number of varieties of tomatoes and peppers I’m growing based on how they produced last year.  Of course, there are also a couple of new varieties for all of us to try out.   This took great restraint on my part as I received a superb tomato catalog this spring, but Margherita put her foot down. There’s also the problem with impatiens and downy mildew. Maybe you want to try out more containers (easier to weed, harder to keep watered and fertilized), expand your gardens (add more edibles), contract your gardens (get your favorite plants closer to where you actually live–not in the back 40).



The Custom Growing List is attached.  You’ll find the complete list online as well at, greeneryinmotion.com, along with past newsletters if you want that information.  The attached list includes the new varieties of flowers and vegetables as well as suggested garden choices.  **Orders are due by May 15 with pick-up the May 25 9am–3pm and May 26 9am–1pm.** I will also be at the Westminster Farmers’ Market beginning May 3, 3:00-6:30, along with a core of 12 vendors with more coming in as the season progresses.

**Table of contents:**

Downy Mildew………..…..2

Epigenetics ………………3

Phyllosphere ………….... 3

Rhizosphere ……………. 5

Support Your Garden …..4

Custom Plant List………..8



Looking forward to the growing season….See you soon ☺

**Downy Mildew on Impatiens**



How many of you noticed that your beloved (and used to be easy!) beds of impatiens just melted away in August last year? Everyone loves(ed) impatiens because they provided an easy splash of color almost wherever they were planted –especially in those tricky shady nooks.

At first your plants looked normal, then they looked sort of weak–like they needed a shot of fertilizer (which didn’t help) or something. If you looked under the leaves you would have seen the underside of the leaf was covered with a white or grey **downy** covering. Then the plants got kind of spindly and yellowy green and then they just melted into the ground. Welcome to the new world of **downy mildew** on impatiens. Here’s the scoop from the extension agents…

“Impatiens downy mildew was diagnosed on Impatiens (*walleriana*) in landscapes in Massachusetts for the first time in 2011 and was diagnosed again in 2012. In early January 2012, outbreaks of impatiens downy mildew were observed in landscape beds and greenhouses in south Florida….All *Impatiens* *walleriana* (regular shade impatiens) are susceptible. New Guinea impatiens (*I*. *hawkeri*) and SunPatiens*®* are not affected.”

This is a fungus that grows on and under the leaves of the plant. You won’t notice it in the beginning. Once the plant has the disease, there is no control that you want to have any part of – or is even legal for you to access. The plant must be pulled up and all parts of the plant (roots and all!) bagged and removed from the site. DO NOT PUT THE PLANTS INTO YOUR COMPOST PILE – IT TAKES A **HOT** (140 degrees for over a week) PILE TO DENATURE THE SPORES! Spores can also overwinter in soil temperatures down to 15 degrees BELOW zero. This is one tough disease! If you do decide to leave the pulled material in your yard – make sure that you use the resulting compost in an area that you’ll never grow impatiens again – trees and shrubs are immune as are most of your garden vegetables. Just keep a clear head and KNOW where you’re compost is going.

If you had the problem last year, then you’ll have it again this year if you plant regular impatiens in the same place –see winter temperatures above. Even if you didn’t have it last year you may get it this year anyway as the spores are spread on the wind as well as from the soil. It only takes one wind storm (and there’s always one) to spread the disease to your yard. If you do decide to try regular impatiens, then plan to be vigilant about buying CLEAN plants and inoculate the leaves with beneficial micro-organisms as soon as you get them home. These organisms will often out compete the bad guys, but will take some management throughout the season (re-inoculation at the very least). **More on this elsewhere in the newsletter.**

A better strategy would be to try other shade tolerant plants. There’s a lot more to the shade plant palate then impatiens! Try all kinds of **begonias** (not just wax, but they’re good to), **coleus** (lots and lots of options here!), **nicotiana** (some are tall, some are short), **new guinea impatiens** (they’re safe – different genetics), **salvia splendens** (you’ll know them as the red spikes, but they come in lots of different colors now), **torenia** (easy, easy plant – with lots of options in pastel colors), **lobelia** (needs high organic soil and moisture, but the texture is superb), even try **regular garden geraniums** if you’ve got some sun (3-4 hours–they don’t actually like hot sun). If none of these appeal–then experiment. Every garden center in the region is going to have a section of plants that are “impatiens replacers.” Even I have new plants added to the list because impatiens are such a backbone in so many gardens. Don’t despair–experiment instead ☺



**New Season New Words New concepts**

I was introduced to two new words this winter that have tremendous potential inherent in their definitions.  I know, I know–words, words and more words!  But words can be the key to a very cool world… These two new words are **epigenetics** and the **phyllosphere.**

Let’s start with the incredible concept of **epigenetics.** What a word, huh!  Here’s the concept in a nutshell.  **An individual is more than the sum of its DNA** – “the DNA sequence alone does not carry all of the information required to determine the phenotype (what it looks like) of the organism.” R.T. Grant-Downton and H.G. Dickinson



This sounds really technical – and it sure is at the level of university enquiry☺ – but it’s the biggest kick at the practical level of every-day life and growing plants, animals and people.  We’ve been conditioned through recent history to think that our genes – or the genes of our pets and our plants – are the final arbiter of the quality of life. “My mother had ??? so I will have ???? as well.”  The interesting thing is that this is only partly true.  We all know cases where the expected genetic outcome (good or bad) did NOT materialize.  DNA does pass on a huge package of information for every individual, but ***it’s the environment where the DNA is expressed*** that determines the final realities for that individual.  This has HUGE implications for all kinds of life forms, but for now – let’s look closely at the plant world. Look at this formula…

**Genetic potential** (genotype) PLUS **stress** (of many kinds – range determined by specie) EQUALS **the potential of the individual** (phenotype)

In the plant world there are natural stressors like flooding, drought, hail and high winds. These may be impacted by human behavior, but are much larger than any one garden, yard or farm.  The best we can do with these stressors is to condition our soil and plants to limit their impact.

Then there is the basic stressor of selecting the plant species and variety.  You need to pick plants that are appropriate for your space – sun plants for the sun, shade tolerant plants for shade, shorter season plants since we live in Zone 5 – that kind of thing.  This is the fun part of looking through catalogs, nurseries and botanical gardens.  Do your basic research, and you’re fine with this one.

The next steps include looking at some of my favorite topics: soil compaction & aeration, microbial diversity & health, mineral availability, and soil depth (my absolute favorites ☺), plant spacing, plant depth, chemical use (use the absolute least amount that you can). The more you can minimize the stress at this point the better your plants will do. The flip side, of course, is that the more you maximize a plant’s genetic potential the healthier it will be and the better the food that comes from that plant.

Start with a basic soil test, amend the soil as much as you can afford in a given year and work the amendments in.  This does take more work than the previous step, because I have yet to discover a way to work with soil that doesn’t include actually working with the soil – and soil is heavy!!!!  Still – a little work here makes a huge change in the long term potential for the plant.  Think of the soil work as a functional training session at the gym – and you get a better yard for it!

C:\Documents and Settings\altobelm\Local Settings\Temporary Internet Files\Content.IE5\WVEQE72D\MC900024392[1].wmf

**The** **phyllosphere** is the **living microbial envelope that surrounds each leaf on a plant.**  There are a lot of events that can change the population dynamics on a leaf–rain, high humidity, drought, age of leaf (younger leaves shed more carbohydrate so have more food to feed microbes), overall healthof plant (a healthy plant growing well has a balance of carbohydrate and protein on the leaf surface – again – more food for the microbes).

You can use this information to help control disease pressure on plants.  This is what I was talking about in the discussion of downy mildew on impatiens.  It is possible to inoculate plant leaves with beneficial microbes and their food source so that the beneficial microbes colonize the leaf and out compete the mildew spores once they arrive and start to germinate.  I still think that downy mildew is a really hard fungus to beat though.  I do use microbial inoculants on plants as the season goes on – especially on roses (black spot) and phlox (powdery mildew).  I’ve also had a pretty good time inoculating tomatoes, but that’s a story for another day.

 You can buy microbes for just this purpose -follow the directions on the bottle. I use a purchased product called Micro 5000 because I need to be able to have it available when I need it.

If you do decide to make your own – you’ll find the recipe on the greenery in motion website.

Add a microbe food source – I use molasses (1tbl/gallon)

and fish/kelp (ditto) – to the gallon sprayer.  Mix well with the microbes.  Plan to use the mixture within 3 hours – this is a living product and does not store like a chemical does – actually uses up the oxygen in the water and either dies or goes dormant.

Spray on the plants – a light mist covering top and bottom to run off.  If it doesn’t stick onto the leaves – add a couple drops of castile soap, yucca solution or other surfactant to break up the water tension. DO NOT use anti-bacterial soap. You’ll just undo the process.  Aim to get the microbes on in the cool of either early morning or late evening, or on a cloudy and misty day.  Microbes can and will stabilize against the strength of the sun but they need some time to do it.  Straight ultra violet radiation (sunlight) is an active anti-microbial so spraying during the warm part of the day also undoes the process.  It sounds a lot more complex than it is –especially if you use a stabilized and purchase product.  I have all the elements in self-measuring bottles in a crate that I carry with me. Easy….



**Which leads us to…Supporting**

**your garden all season long…**

One of the most asked questions that I got at the farmers’ market last year was **“why are my–pick any plant** (tomato, cucumber, squash, marigolds, zinnias – any basic annual plant you can name)–**dying off so early in the season?**

If you’ve had a garden for any length of time then you know that this happens a lot.  You get the garden started well at the end of May.  It grows pretty well during June and into July and then … August comes along…it’s hotter, more humid, less rain and the plants are ready to really produce … and instead… the plants begin to fade away.  They get diseases of all kinds, insects attack, production of flowers or fruit falls off and it looks like the season is done before Labor Day.  Sound familiar???  In fact, it’s so familiar that a lot of people think that that is the normal life cycle of garden plants. It’s frustrating to spend so much time at the beginning of the season only to have it all end in a whimper. It doesn’t have to be that way at all.  You can have solid plant production up to and (believe it or not!) through a light frost if you want it.

Here’s the simple explanation that is true for all plants, but especially for those that grow from seed and complete their life cycle (germination, growing, flowering and producing seed) in one growing season.  The plants are literally running out of energy, like a battery running out of charge.  The neat thing is that this is something you can learn to manage ☺

**This is where the practical applications of words like rhizosphere and phylloshpere come in…**

Here’s a quick review of the **rhizosphere,**  which I’ve mentioned in past newsletters. It’s the area directly around the plant’s roots that is colonized by bacteria and fungi that exchange the minerals and larger molecules that they accumulate from the wider soil for the carbohydrates that the plant sheds from its roots.  In fact, a healthy plant can shed up to 60% of its carbohydrate production (remember that weird process called photosynthesis?) into the rhizoshpere.

The more good microbes there are around the plant’s roots the less bad microbes there will be – there just isn’t space for them.  *“The rhizosphere is really just a very active marketplace where the producers and decomposers get together to barter with each other. Plants, the producers, offer bacteria carbohydrates they have produced which the bacteria use as an energy source. In return bacteria, the decomposers, digest soil minerals and rock powders to obtain nutrients which go to the plants and, ultimately, into the foods we eat. Jon Frank”*

C:\Documents and Settings\altobelm\Local Settings\Temporary Internet Files\Content.IE5\WVEQE72D\MC900024392[1].wmf

As you might imagine – long season management starts with the soil.  You know from past newsletters that your soil is one of your best assets. In brief, you might think of your soil like that battery mentioned above.  Soil chemistry runs on positive and negative ions (cations and anions) and there needs to be enough of the right kind to support the entire plant structure or the plant starts to fail as it matures.  It takes a lot of energy to produce flowers and ripen fruit.  When my brother was working with me one season, he likened the soil work we did to plugging the soil into a recharger and that’s essentially right.  But, enough of that!  You’ve heard it before and there’s more to the story…

 Even if you’ve done your soil homework, your plants can still hit an energy deficit.  Here are a few things to keep in mind for **July-October**.

**Start with inoculated plants:** All of the seedlings that I start are inoculated with beneficial microbes at germination and again the night before they’re picked up.  Any young plants that I buy in are inoculated upon arrival and again before they leave here.  This gets the plants off to the best start they can have and greatly helps them to adjust well to your garden (if you remember to plant them promptly!). I've been doing this for the past four years but never mentioned it before because most people are (or have been) scared of microbes.  The world has come a long way!

You can inoculate any plants that you buy from any source.

 **Water:**  You need water to keep the soil’s micro-organisms working for you and the plant.  This keeps the ions and larger molecules mentioned above moving through the system with the water that your plants need.  **To do:** Set up some kind of **drip irrigation** around your plants.  It can be drip tape, soaker hoses or other products all designed to get water to the soil and let it seep in slowly.  You can cover your irrigation and get even more bang for your water buck by cutting down on evaporation from the emitting water.  This is a great place to tie in rain barrels (that can be pumped out with a sump pump) or even look at a gray water system. Overhead irrigation is an option but much less desirable – it easily evaporates, spreads diseases and rarely penetrates summer soils well.

 Use **liquid fertilizer** in the irrigation lines or use a watering can.  I use Neptune’s Harvest fish hydrolysate and kelp (excellent food source for micro-organisms), molasses (carbohydrate for root zone), a touch of castile soap (makes it easier for water to move through the soil – use a little more if the soil is really dry) and a microbial soil inoculant if the soil is really dry.  **Recipe:** looks something like this: 1 tbl fish, 1 tbl molasses, short squirt of castile and ¼ tsp of microbes in a gallon of water.  Plan to use this quickly because it is actually a living product and it will exhaust the oxygen in the water.  Don’t let it sit for more than a couple of hours – and in the shade at that. Double this if you’ve kept water available to the plants, but you really don’t have enough juice in the soil.  Do not double this if water is part of your problem – water first until water has reached 3-4” into the soil.

 Use a **foliar spray** on the leaves of the plant.  This can be amazingly effective because plants can take up both minerals and sugars through the leaves.  This is sort of like using an IV for the plant, straight into the vein so to speak.  The trick is to apply the liquid before the dew dries in the morning or after the heat has well left the day, usually after 6pm in the evening.  This makes it a great job to do as you walk around your yard at the end of the day. **How:**  You can use the same mix as listed above or you can tailor it to the specific needs of the plants in your yard – example:  You know your soil is low in calcium, boron and potassium.  You can add appropriate materials to your foliar spray and the plants can take that directly in through the stomata to the plant sap.  You can also tailor the microbes, there’s more and more research being done on the phyllosphere (there’s that word again!).

I’ve used the above approach to keep heavily grown containers in excellent color and production all the way through the first frost of October.  It’s easy once you get the system set up.  I have that small crate that has everything I need – easy to carry and easy to measure from – that I mentioned earlier.  Add a watering can, or bucket or irrigation line injector and your good to go!

**Three extra words…**

**but easy words this time!!**

**'Observe....Remember....Compare'** These are essential skills – in ascending order – for learning anything and are critical to becoming a good gardener. I have over 30 years of experience with these three (they’re old friends!), and I still feel like I’m a beginner. I work to strengthen these everywhere I go. This is one of the few things that does actually strengthen and get better over time – YAYAYAY! You have to be able to really notice a thing in its setting before you can you begin to understand it; then – and only then – can you respond appropriately. The cool thing is that this makes the world a WHOLE LOT MORE INTERESTING THAN YOU MIGHT THINK! Keep an eye out for ants farming aphids this

year. ☺

**Curious about Woody End Farm?**: Margherita and I are still going strong with Nigerian Dwarf goats – for milk and brush control, Khaki Campbell ducks – for eggs and slug/insect control, Hugelkulture (HK) beds – for managing the climate extremes of drought and flood in the field, – and we even have a couple of semi-feral kittens abandoned at the farm during an ice storm in December…

We never have a dull moment ☺ and we’re happy to talk shop!

**As I look forward to the 2013 garden season** I continue to believe in people and their gardens...

It’s where the action is – the front line, in many ways, in the fight to regain garden, biological and ecological integrity.

There is fantastic color, life of all kinds and a unique character to every garden – no cookie cutters here!

* **Garden Coaching** – All of the jobs below can be daunting, but it’s really fun to learn how to do it all – and then you can hire qualified people to do what you don’t want to do! Arrange for one-on-one training or get a gardening group together and everyone can learn at the same time! You can choose monthly, bi-monthly or seasonally – whatever works best for your learning style and gardening needs.

**Design** – A well designed garden is a pleasure to be in–it suits the people that it’s designed for. Be comfortable in your own yard!

* **Soil Development and planting** – This is the backbone of a healthy garden and my favorite part of the job. Good design selects the plants, but top quality soil development and planting ensures success – plants that glow with health – and you really can see the difference. Get a soil test done. Use mineral and organic based products for the best long-term results.
* **Aesthetic and natural pruning** – Many people think that pruning shrubs is the equivalent of mowing the grass – only taller – they essentially mow the shrubs in August when the grass has stopped growing! Be the exception – learn how to read your trees and shrubs and bring out their visual best. Each tree or shrub has a particular “essence” – a combination of specie, variety, growing conditions and garden location. It’s a joy to bring out their beauty!
* **Garden maintenance** – This includes the essential jobs of mulching, fertilizing, weeding, staking and deadheading, garden clean down and seasonal reassessment. All of this keeps the gardens ready for production and pleasure.
* Let’s see if together we can make your goals a reality. Give me a call at **978-874-1373** or email **altobelliml260@comcast.net** if you like to create a custom program for you and your gardens for more information. You control the complexity of the plan, but we can help with some or all of the work. One caution – the days are very busy – it may take a few days to get a response!
* **Check out this year’s plant list! Veggies are still** **HOT! Local Food is hot! And then there’s the color...**

Most of you know that I grow plants along with everything else. You might have noticed that I find the plant world a really fascinating place! This leads to an eclectic plant list – developed from on-site client needs, farm needs, and farmer’s market needs – there are over 300 plants listed!

There are several kinds of plants on the list that have a wide variety of cultivars listed: for the flowers they would be the marigolds, poppies, rudbeckias (black-eyed susans), and zinnias; for the vegetables they would be the beans, cucumbers, eggplant, greens, peppers and tomatoes; each of these groups needs that level of variety.  The differences are real and it makes it much more fun (and much more you!) to chose the variety that best serves you and your needs.  You won’t find many of the conventional standards here!  I’ve tested all of the annuals and most of the vegetables (there’s always something new to try…) and know that they will perform well.  Expand your horizons and experiment!!!!

I’m putting the entire list on the Greenery in Motion website, **www.greeneryinmotion.com,** for anyone who’s interested. That way you can down load the list and sort the list however works for you. If you have ordered from me in the past, I will attach a copy of the list to this newsletter. I’m hoping this helps everyone!

**Pick your order up on May 25 9am–3pm, May 26 9am–1pm or by special arrangement.**