Perennial flowers can be a great addition to any garden. They traditionally live 3 years or more if they are suited to their planting environment. There are so many varieties on the market but gardeners need to seek out the ones that are truly right for our Missouri environment in order for them to be sustainable.

What is a sustainable perennial? Well, to most gardeners, a sustainable perennial is one that has no significant problems, is drought tolerant once established, is low maintenance, and is long-lived. Others might say it is a perennial that requires a minimum of inputs such as water, fertilizers, pesticides, labor and time.

**To be sustainable, it is important to start by matching the right plant with the right place.**

- Consider your hardiness zone as well as your heat zone. Plants with the hardiness zone 3 to 6 grow here but there are some exceptions due to our humid, hot summers. Lupines are a great example. They will grow in our zone but they will not thrive, bloom or last very long. We are just too hot for their liking.
- Consider mature height and width of the plant you are planting. Consider it’s growth habit. Regardless of whether it is a woody or herbaceous perennial, many of us greatly underestimate the size our plants will get. Take some time and do the research. How big does that plant really get? Give it room!
- Consider the sun exposure. Do you know how many hours of sun is considered full sun or part sun? What is the difference in partial shade and full shade? What is the minimum sun requirement that plant really needs? Also, take some time to understand the sun exposure on each side of the house. How many houses sit truly in a north/south orientation. I know mine doesn’t!
- Get a soil test and understand what your soil has to offer. What
is your pH? How does the organic matter content look? What are the nutrient requirements of the plants in those areas compared to what soil test results show? Soil pH can be a hindrance if it is too high or too low. It can be one of the limiting factors that could keep your plants from thriving.

- Healthy soil = Healthy plants. Be good to the soil - add organic matter. Compost is always a good choice. A build-up of residues from yearly mulching will also benefit the soil.

- Can the plant handle a drought? Missouri is well known for its summer droughts.

- Consider longevity. With many of the new perennials, it is great if they make it 3 years in our landscape beds. This is where we need to do a bit more researching and talking to others that have planted the newer varieties. I always tend to believe that when plant breeders target more exotic versions of our old garden standbys, the sustainability and reliability seems to disappear. Some of the new varieties are just not that hardy or at least that is what I have found in my gardens.

- Consider landscape diversity. I am a plant collector vs. a coordinating landscaper. To my advantage, it creates a more interesting landscape and I have less problems. I will avoid a big loss should harmful insects or diseases invade. Diversity always aides in attracting beneficial insects and pollinators.

- Consider growing native plants. Natives are adapted to Missouri soils and climate. They will tend to be more sustainable than non-native choices.

- Consider what insect and disease pests the plant has problems with? Try to choose plants that are resistant to the specific pest problems. One example is our yearly issue with Japanese beetles. Many garden resources have lists that guide gardeners on plants that are susceptible and resistant to the insect. Try to choose disease resistant varieties when possible – crab apples, hawthorne, and monarda are a few examples.

- Consider maintenance. There is no such thing as “no maintenance” but we can get somewhat close with low maintenance. Will your plant require frequent pruning, fertilizing, deadheading, or staking?

One other thing I might mention is “Start with healthy plants.” Sure, you can take a look at the bargain rack at your favorite store but make sure the plant (s) that go home with you are healthy as well as insect and disease free. If in doubt, I always say take a look at the roots. They should be white or cream colored and NOT brown or black.

Growing sustainable perennials takes a bit more planning and consideration but it pays off with plants that are longer lived, healthier plants and less labor.

These are two of my favorite perennials. Old fashioned Shasta Daisy (Top) and Indian Pink (Bottom). Both are faithful bloomers in my gardens that are easy to care for.
**Outdoor Flowering Plants and Ornamentals**

- When purchasing bedding annuals this spring, choose properly grown plants with good color. Buy plants with well-developed root systems that are vigorous, but not too large for their pots.
- Fertilize bulbs upon emergence of foliage with a 10-10-10 fertilizer, using a rate of 3 pounds per 100 square feet. Repeat the application after the bulbs have bloomed.
- Plan to attract hummingbirds to your garden this year by planting red or orange flowers. Monarda is a good perennial to provide nectar for these small birds.

**Vegetable Gardening**

- Plastic jugs make inexpensive and easy-to-use “hot caps” for your vegetable seedlings.
- When weather is wet or cold, allow about twice the germination time listed on the seed packet. If there is no sign of growth after this time, dig around a little to check for sprouted seeds. If you find no signs of life, the seed has probably rotted, and you will need to replant.
- When planning your vegetable garden, consider that leafy vegetables need at least six hours of sunlight to develop properly. Fruiting vegetables such as tomatoes, squash, eggplant and peppers need 10 hours of full sun.
- Some people report luck with beer as a pesticide for slugs. Place it in small, aluminum, pot-pie pans sunk in the ground with the soil even with the rim.

**Fruits and Nuts**

- When apple trees are in full bloom, make a note on your calendar 150 days later to check for ripeness.
- Thin young fruits of apples, pears and peaches to insure larger, healthier fruit. Thin within 25 days of peak bloom, leaving 4 to 6 inches between fruit.
- Grape vines with excess vegetative growth generally have less high-quality fruit. In early spring, prune out the canes with the fewest buds to allow light, moisture and air circulation within the plant to improve the quality and quantity of fruit.

**Lawns**

- Control lawn weeds now through late May before they get large and temperatures get too high to apply herbicides safely.
- Estimate your grass seed needs at 2 to 3 pounds of bluegrass seed or 4 to 8 pounds tall fescue per 1000 square feet.
- Do not mow the lawn until it has grown at least two inches. The roots are being renewed in the spring and grass needs vigorous top growth initially.
With the move back to the vegetable garden many people are looking to grow some of their favorite foods or foods that children enjoy. Once such culprit is the peanut.

First, the peanut is not a nut but a legume. That is why those who are allergic to peanuts are not usually allergic to tree nuts. The two are not related. The peanut is related to peas. Varieties are grown for different purposes. Virginia is used for boiling and for roasting. This produces large pods and high yields. Georgia and Spanish are bushier, keeping the pods close to the tap-root. These are used for boiling. Runner types produce small nuts on vines and are usually used for peanut butter. The Mexican is a small sized seed that is often used for salted peanuts.

When planting, soil should be light and airy. Clay soil does not grow peanuts well. Do not plant peanuts under cool, wet conditions as this promotes the spread of diseases. If possible, use an area that has been amended with high amounts of organic matter. The soil pH should be 5.8 to 6.2. Peanuts fix nitrogen and scavenge phosphorus and potassium. They need calcium to be readily available for plant uptake through the roots. Fertilizer should be applied in the fall before planting in spring. A soil test specific to peanuts will provide you with the proper application rates.

Plant in April or no later than the first week of May to allow for 140 days of growth to occur before harvest in late September or October. Peanuts bloom around 40 days after emerging. After pollination the ovary bends toward the ground, penetrating the soil line and producing an enlarged seed. Each pod takes about 10 weeks to mature.

Check for maturity by pulling a plant and inspecting the seed. If a hard frost hits the plants harvest immediately.

To help prevent peanut leaf spot (a black spot on leaves) do not use overhead watering. Rust may be an issue during a humid spring. If your soil is high in sand you may need to look out for nematode. Harvest the peanut by lifting the plant out of the ground or popping it up with a garden fork. Pluck the seed from the plant and spread out to dry.

Garden Quote...

“One of the healthiest ways to gamble is with a spade and a packet of seeds.”

-Dan Bennett
Dandelions are probably the first plant kids learn to identify. Dandelion flowers are easy to spot and great fun for kids to blow the seeds and make wishes. They also make great flower chains and yellow marks when rubbed on skin. Then by the time they reach adulthood, dandelions are looked at as a weed in lawns and gardens. It is all about perspective!

Dandelion (Taraxacum officinale) is a member on the Asteraceae family which includes asters, daisy, and sunflowers. It is a herbaceous perennial plant native to Eurasia and the entire plant is edible. The common name of dandelion comes from the French dent-de-lion, meaning lion’s tooth. The “flower” is actually composed of many very small flowers collected together in a composite flower head. The flowers turn into road balls of silver tufted fruits that disperse in the wind. It is found growing in lawns and along roadides, generally considered a weed but is also used as a medicinal herb and a food source.

Dandelions are one of the first plants to bloom in the spring and can even be seen on warm days during the winter. Since they are one of the first things to bloom, they provide pollen for the early emerging honey bees. The plants generally grow from unbranched taproots that can produce multiple stems. The stems can have a purple tint, can be upright or lax, the leaves can also be upright or spreading with lobes and teeth. When pieces of the plant are broken, it will exude milky latex like sap.

Dandelion is considered a weed in many circumstances because of its efficient seed dispersal and the seeds can remain viable in the soil for many years. It is a common colonizer in lawns and fields. The seed can be a contaminant in crop and forage seed. The plant can also reproduce by pieces of the taproot.

The dandelion has several culinary and medicinal uses. I remember my first grade class going out to pick dandelion blooms and we fried them for a snack. The plant is more valued in other countries than here in the US. The flowers can be used to make wine, the greens for salads, and the roots have been used to make a coffee substitute when baked and ground into powder. The leaves can be eaten cooked or raw, similar to mustard greens. Young leaves are generally eaten raw while older leaves are cooked. The leaves are high in vitamin A, C, and iron. Flowers can be used to flavor wine with many recipes available and also is part of a popular soft drink in the United Kingdom. The flowers are used to make jam and also a honey substitute syrup in Europe.

Dandelion root is a common ingredient in diuretic type drugs and similarly used as a herbal medicine.

Now when you see dandelions blooming, I hope you will look at them a little differently and think of some of the positive and not just about how many you have to pull out in the garden!

Garden Tip...

An elderly Aunt of mine told me to try this and I have had good results on my fruit trees. Take a bar of Ivory soap and rub it on the trunk of your tree a few inches off the ground and up as far as you can reach. Try to get all around the tree. I do this in early spring and again in the fall. The fruit on the tree is healthy and good. Very few worms or insects eat on it and it has not harmed the bees. They are buzzing all around.

~Wanda Brandt, Perry Co. Master Gardener
Garden Myth - Use Milk
Sarah Denkler, Horticulture Specialist

Have you ever heard how beneficial it is to add powdered milk to your soil for calcium or that you can spray milk on your plants to control diseases such as powdery mildew? How does that work?

Can milk be used as a fertilizer? Microbes in soil will break down milk proteins as they feed providing nutrients to plants. Based on this alone milk could be used as a fertilizer, however it would not be a good source as it is not cost effective.

The level of calcium in one gallon of milk is around 4576 mg. That converts into 0.1009 pounds of calcium per gallon. At today's prices that is $400 per pound. If a natural fertilizer is the goal then use rock phosphate which contains 25% calcium at $8.60 per pound, bone meal containing 20% calcium at $6.25 per pound or gypsum which contains 20% calcium at $3.35 per pound. These are economical and natural choices.

If a relative or friend used milk to “fertilize” soil it was likely spoiled milk and they wanted to make sure it would be utilized in some way instead of being thrown away.

Milk has been used in some research to reduce the rate of infection of mosaic virus or powdery mildew. Bettiol, W. et. al. were able to show high concentrations of milk were more effective than the conventional fungicides tested (1). Another study by Bettiol, W. et. al. revealed 25-30% treatments of whey slowed the disease progression of powdery mildew on cucurbits (2). Each project used different percentage rates of milk product in water or in combination with other liquids for application.

Questions that still need answers include: a) what rate is best, b) is milk alone the best choice for organic control and c) what other microbes will grow on the milk covered leaf surface?

When dealing with a virus that infects plants, it is a good choice to remove the infected plant from the area to better guarantee no further contamination to other plants.

References:


(2) Bettiol, W., Silva, HAS, and Reis, RC. Effectiveness of whey against zucchini squash and cucumber powdery mildew. SCIENTIA HORTICULTURAE. 117:1-82-84.

Save the Date!
May 17 & 18, 2014
Saturday 10am-4pm    Sunday 11am-4pm
Ste. Genevieve Garden Walk 2014

- Tour private and public gardens,
- Plant Sale (Saturday 9am—Sunday 11am),
- Farmer’s Market (Saturday Only 7am-Noon)

Tickets $7
For info call the Ste. Genevieve Welcome Center 1-800-373-7007
Sponsored by Ste. Genevieve Master Gardeners
## The Garden Spade

### April 2014

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<td>Dogwood Azalea Festival in Charleston, MO</td>
<td>Cape County MG Spring Garden Festival, Arena Park in Cape Girardeau</td>
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### May

1 - Azalea Festival in Fredericktown, MO  
5 - Parkland MGs 1st Monday at 6:30pm, Memorial United Methodist, Farmington, MO  
6 - Poplar Bluff MG 1st Tuesday at 6:00pm at PB Ext Center  
8 - Ste. Genevieve MGs 2nd Thursday, at 6:30pm, Ste. Gen. County Ext. Center  
15 - Cape Girardeau County MGs 3rd Thursday at 7:00pm, Cape County Ext. Center  
26 - Perry County MGs 4th Monday at 6:30pm, Perry County Ext. Center

### Upcoming Events

If you have a horticultural related event for the calendar call 573-686-8064 or email it to Denklers@missouri.edu.

Contact your local Extension Center if you have questions about any event on the calendar.
Editor’s Corner

The Garden Spade is published monthly by University of Missouri Extension staff for individuals and families living in Southeast and East Central Missouri. This newsletter is provided by your local extension council.

Editors:
Katie Kammler, Horticulture Specialist
255 Market St., Ste. Genevieve, MO 63670
573-883-3548

Sarah Denkler, Horticulture Specialist
222 North Broadway Street, Poplar Bluff, MO 63901
573-686-8064

Donna Aufdenberg, Horticulture Specialist
304 High Street, PO Box 19, Marble Hill, MO 63764
573-238-2420

We welcome and encourage Master Gardener groups and individuals to submit items to the newsletter. We encourage the submission of any news such as upcoming volunteer opportunities, community events related to gardening, warm wishes or congratulations to fellow gardeners. We also encourage Master Gardeners to share experiences and write articles on timely topics.

All entries into the group news sections must be received by 4:30 on the 15th of each month for the following months news.

Email News to: kammlerk@missouri.edu, denklers@missouri.edu, or aufdenbergd@missouri.edu

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April 2014 Garden Spade