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**Lake County MGCV Mission
Statement**

The mission of UF/IFAS Lake County Master Gardener Volunteers is to assist extension agents by providing horticultural education programs and current research-based information to the public through plant clinics, community outreach and Discovery Gardens.

Garden Scoop

Companion Planting by K.S. Kennen MGCV

Companion planting, also known as polyculture, is the combination of different plants near each other for the purpose of pest control, space management, and/or crop benefits. Probably the most historically notable companion planting is the “three sisters” which was used in the U.S. by Native Americans for all three of the benefits and consisted of corn, beans and squash. First, the corn is planted and when it is five inches tall, the beans and squash are alternately seeded around the growing stalk. The stalk serves as a trellis for the beans; the beans add nitrogen to the soil; and the squash provides ground cover to suppress weed growth.

Crop yield concerns the use of plants that will enrich the soil and increase growth and production. The most common plants are beans and peas which help add to and fix the nitrogen in the soil. Also, basil and bee balm are two companion plants that when planted with tomatoes will not only benefit growth but improve the flavor of the tomatoes. Finally, dill is another plant that when grown near cabbage can improve the growth and health of the plant.



Thespruce.com



Almanac.com

Space management is simply an outcome of the implementation of polyculture since plants occupy the same space or are in close proximity so you can make the best use of space. Plan to sow between two rows of midseason corn, for example, which should be spaced about thirty inches apart, a row of early peas. The peas will be harvested and the plants turned under before the corn has grown large enough to crowd the peas. The smaller crop which matures more quickly is planted in a row that runs between two rows of the larger, later-maturing crop. A row of dwarf corn is sometimes planted between two rows of pole beans or squash. A row of lettuce or spinach can be planted between two rows of cabbage or cauliflower.

When considering pests one of the most known deterrent plant is perhaps marigolds. According to Cornell Cooperative Extension, marigolds help keep away aphids, cabbage maggots, corn earworms, squash bugs, nematodes and numerous types of harmful beetles. Chives are an all-around companion for veggies: chives repel aphids, Japanese beetles and cucumber beetles and aid the growth and flavor of carrots. Chives also help tomato plants by benefiting yield and deterring pests.

Helpful resources for beginners would be [Encyclopedia of OrganicEcosystem Gardening](https://gardening.solutions.ufl.edu/plants/edibles/vegetables) by J.I. Rodale and <https://gardening.solutions.ufl.edu/plants/edibles/vegetables>

Companion Planting Chart

| Garden Plant | Good Companions | How They Help | Bad Companions |
|------------------------|--|---|--|
| Asparagus | Tomato, Basil, Marigold, Nasturtium, Parsley, Dill | Protect against Asparagus Beetles. | Potato. Garlic and Onions can inhibit growth. |
| Beans | Corn, Squash, Cucumbers, Marigold, Summer Savory, Potato | Corn offers bean vines a natural support. The large leaves of squash and cucumbers offer shade that helps reduce weeds and hold moisture. Savory and marigolds repel bean beetles. Potato repels Mexican beetles. | Chives, Garlic and Onions can stunt the growth of beans. Tomato, Peppers |
| Beets | Garlic, Onion, Scallion, Leeks, Mint, Cauliflower, Broccoli, Brussels sprouts, Cabbage, Kale, Radish | Pungent plants repel snails, moles, aphids, root maggots, Japanese beetles, and codling moths. | Pole beans and beets stunt each other's growth. |
| Broccoli | Mint, Dill, Rosemary | Aromatic herbs help repel pests. | Oregano, Tomato, Strawberry, Mustard |
| Cabbage | Mint, Onion, Oregano, Dill, Sage, Clover, Chamomile, Nasturtium, Beets | Aromatic plants help repel common cabbage insect pests. Clover planted between rows disrupts Cabbage Aphid and Cabbage worm populations. Chamomile improves cabbage growth and flavor. Nasturtiums offer caterpillars an alternate food source. | Strawberry, Tomato, Eggplant, Peppers |
| Corn | Bean, Cucumber, Melons, Parsley, Pumpkin, Squash, Marigold | Marigolds repel Japanese Beetles. Beans affix nitrogen to their roots that replenishes the high levels of nitrogen corn needs to grow. The foliage of melons and squash shade the ground conserving moisture and reducing weed growth. | Tomato. A caterpillar called Corn Earworm or Tomato Fruitworm is attracted to and feeds on both plants. |
| Cucumber | Radish, Lettuce, Corn, Beans, Onions, Nasturtium, Dill | Radish repels Cucumber Beetles. Corn provides a natural trellis. Nasturtium improves growth and flavor. Dill repels some insects and attracts other natural predators. | Sage, Potato |
| Eggplant | Bush beans, Catnip, Peppers, Spinach, Tarragon, Thyme, Tomato, Potato, Marigold, Sunflower, Nasturtium | Beans protect from the Colorado Potato Beetle. Catnip repels flea beetles. Thyme repels aphids and garden moths. Sunflowers and nasturtium repel white flies, aphids, flea beetles and ants. | Fennel |
| Lettuce | Radish, Carrot, Dill, Cucumber, Strawberry | Radish repels a variety of insect pests. Dill attracts beneficial ladybird beetles, bees, and parasitoid wasps. | Beets, Beans, Parsley, Cabbage |
| Melon | Gets along with nearly any crop | | Potato |
| Peppers | Tomato, Beans, Onion, Geranium, Petunia | Geranium repels Japanese beetles. Petunias repel a variety of insect pests. | Fennel |
| Potato | Corn, Eggplant, Beans, Peas, Cabbage, Sage, Nasturtium, Coriander, Catnip | Sage repels flea beetles. Nasturtium, Coriander and Catnip repel Colorado potato beetles. | Squash, Tomato, Cucumber, Spinach, Pumpkin, and Raspberries make potatoes more susceptible to blight. Fennel, Onions, Turnip |
| Pumpkin | Corn, Melons, Dill, Beans, Radish, Oregano | Radish and Oregano repel a variety of insect pests. Dill repels Squash Bugs. | Potato |
| Spinach | Strawberry, Cauliflower, Eggplant, Radish | Radish repels Leaf Miners. | Potato |
| Squash | Beans, Peas, Corn, Dill, Radish, Mint, Nasturtium, Onion | Dill repels Squash bugs. Radish, Nasturtium, and Mint repel a variety of insect pests. | Potato |
| Tomato | Asparagus, Carrot, Parsley, Basil, Marigold, Garlic, Collards | Garlic repels Red Spider Mites. | Potato, Corn, Cabbage, Brussels Sprouts, Broccoli |
| Turnip | Peas, Mint, Tomato, Cabbage, Broccoli, Brussels sprouts, Cauliflower, Beans, Lettuce, Spinach, Radish | Beets, Parsnip, Carrot, Potato | Planting near other root crops with similar nutritional needs increases competition for soil nutrients. |
| Zucchini Squash | Corn, Beans, Nasturtium | Nasturtium repels a variety of insect pests. | Potato |

Marigolds – *Tagetes*

By K.S. Kennen MGv

There are two varieties of marigolds that are commonly used in gardening. One is *Tagetes erecta* (African marigold) and the other is *Tagetes patula* (French marigold). The marigolds are native to Mexico and South America. *Tagetes erecta* is also known as Mexican marigold or Aztec marigold. The plants are 15 inches to three feet tall with large blooms that are six inches in diameter. The French marigold is shorter at only six to 12 inches high with a bloom of up to two inches in diameter.



French marigolds



African marigolds



(freepik.com)

Marigolds can be grown year round in central Florida and can be started from seeds in March, April, September, October, and November. The plants like to have at least six hours of sun and will do best in fertile soil. The taller plants may need to be staked since they can be blown over in a strong wind. It will also keep them looking better if all dead blooms are clipped off. The smaller French marigold can look stunning planted as an edging to a flower bed. The taller African marigold can make very attractive cut flowers.

Unfortunately, these colorful plants have the possibility of a few problems. If they are over-watered, they can have root rot. So be sure they don't get too much water especially during our summer rainy season. They are also susceptible to numerous pests. You might notice the presence of leafminers by evidence of their "leaf tunnels". Leafhoppers can cause the leaves to cup or roll up as a result of them sucking the leaf sap. Mites are most common during the summer and can leave webs on the plants. Sometimes the pests can simply be removed with a strong jet of water. Other times you might want to use a soap spray or Neem oil to treat the pests. You might even be fortunate to have the presence a natural enemy of the leafminer, a wasp, in your garden and not have to do anything at all. Nature will take care of the problem.

Besides being used as color in your flower garden, marigolds are also used as a natural repellent in a vegetable garden. Even though research has not been supportive of their repelling properties, many gardeners have found marigolds can enhance the growth of basil, cabbage, cucumbers, eggplants, gourds, kale, potatoes, squash, and tomatoes. It is important to note that hybrid marigolds do not have the repellent abilities. Cornell Cooperative Extension says marigolds just might control a number of pests: aphids, potato beetles, corn earworms, flea beetles, squash bugs, and cucumber beetles.

Scientific evidence does exist that marigolds are effective as control of nematodes. The plants must be used as a cover crop to work. That means that they should be planted at least two months before the crop you want to grow. They should also be planted every year that you plant that crop. It is the presence of a toxic chemical in the roots of the marigold that inhibits the hatching of the nematode eggs. Note that hybrid marigolds will not have the positive effects or possible repellent qualities.

Two final interesting facts about marigolds is that in some countries the dried flowers are used as a substitute for saffron. Also, the dried flowers are added to chicken feed to make the yolks of their eggs yellower.

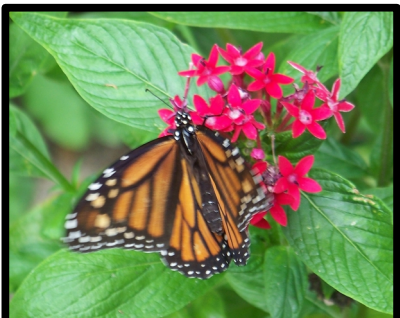
Encyclopedia of Organic Gardening

<https://gardeningsolutions.ifas.ufl.edu/>

Butterfly Match

Central Floridians are fortunate to have many kinds of butterflies in their gardens. The butterflies are easy to see when they fly around the flowers seeking nectar, but gardeners do not always see the caterpillar or larvae that comes before the butterfly. Even more important than seeing is recognizing them for beneficial and something not to be killed even if they are eating some of the plants. The following are visitors to my gardens. Can you match them to their caterpillar/larvae? Answers can be found on page five. All photos but B and C are by K.S. Kennen.

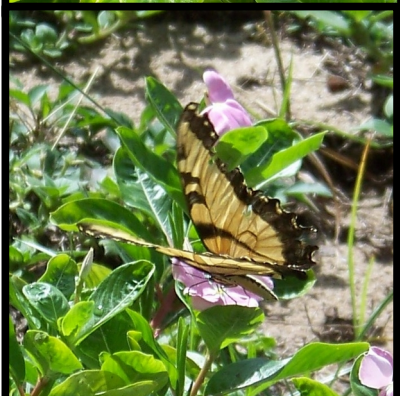
1.



2.



3.



4.



5.



A.



B.



C.



D.



E.



Plant Clinic Clatter



Dear Master Gardener,

I brought this growth in from my weeping bottlebrush tree and wanted to know what it was and what caused it. There are about four of them.



Dear Home Owner

We cut it open so we could see if the growth was caused by fungus or an insect. It turned out to be the result of a fungus. Wet soil is the direct cause of twig gall, a fungal disease and is a common bottle brush disease.

Wet soil is the cause of this condition and can cause death of the tree. It is possible to save the tree by cutting out the diseased area and correcting the excessive moisture to the plant.

Sort out your wet soil problem by correcting your watering schedule, watering the plant with less frequency and with less water. Consider adding sand to the soil and mixing it in to aid with better drainage. Powdery mildew is another disease of the bottlebrush caused by too much water. This can be treated with a fungicide spray and can be further prevented by watering from below and not above or over the plant.



Read more at Gardening Know How:
Treating Sick Bottlebrush Plants...
<https://www.gardeningknowhow.com/ornamental/shrubs/bottlebrush/diseases-of-bottlebrush-plants.htm>

Dear Master Gardener,

I recently moved to the area from New York and wonder how well plants will grow here in my sandy soil? My yard seems to be all sand and have few beds just grass. Can I grow anything else in all this sand?



Dear Homeowner

The first thing you should do is have a sample of your soil tested at the Extension office for the pH level (measure of acidity and alkalinity). When you know the pH you can select plants that will do the best in your conditions. Also, since sandy soil does not hold moisture well, it would be helpful to amend it with compost, manure, or even worm castings. Before planting, work into the sand what you have chosen to add and this will help hold the water.

Most landscape plants tolerate a wide range of pH. The best range for vegetables and flowers is from 5.8 to 6.3. Choosing plants suited to your soil is important. There are things you can add to your soil to change its acidity or alkalinity but the changes do not last.

For more information go to garden
<https://gardeningsolutions.ifas.ufl.edu/>

Butterfly Answers:

1. E
2. A
3. C
4. B
5. D

Treemendous: Tree Pruning

by J. Daugherty, RHA

Florida Arbor Day is January 16th. As an arborist, I always love the events around Arbor Day. Tree education is important for the health of the trees and the safety of people and property around trees. proper pruning is one of the most important aspects of tree care. When trees are smaller, homeowners can often manage the pruning, but once they are large, professionals should be hired.

Large trees will need pruning every two to three years to be sure the tree stays healthy and safe. Always hire an ISA Certified arborist. The certification shows that the person doing the tree work has training in proper tree care and maintenance. While a non-certified individual will likely be cheaper, they may not be knowledgeable in tree care. This could result in tree injuries that lead to disease or death over time. It is important to note that trees can take time to show issues from a bad pruning cut. It may be years before the damage manifests. This is why it is important that those working on trees have the knowledge to do it right.

If the trees are small and you are doing the work yourself, there are a few important things to know:

IMAGE 1:



IMAGE 2:



1. Never remove more than 1/3 of the tree's canopy because it can be too stressful and the tree may not survive since pruning removes the food source provided by the leaves and will produce wounds that take extra nutrients while trying to heal.

2. Always trim to a node as indicated by the red arrows in the picture to the left (IMAGE 1). It is the area from which a branch or twig will grow. (Photo by J. Daugherty) This correct trimming will allow for better healing.

3. No flush cuts. A flush cut is when you cut a limb against trunk of the tree. This cuts off the branch's bark collar which is a transitional zone between the main trunk and the branch. This area stimulates healing after a pruning cut. Removing this increases healing time and can lead to the tree being impacted by pests and disease. Refer to IMAGE 2 which shows "yes" for correct cut and "no" for incorrect cut.

4. NEVER top a tree. Topping is indeterminate internodal (between nodes) cuts. Topping leads to weak branch attachments from fast growing sprouts. Topping is not a recommended practice in arboriculture. Pollarding is a type of pruning that resembles topping. The difference is the cut is made in the same location every pruning cycle. The practice will keep the tree smaller and allow it to heal faster.

Keep an eye out for more information about trees the week of January 11th, leading up to Florida Arbor Day.

You can find an arborists at TreesAreGood.Org

Discovery Gardens

Please plan a visit to over twenty different gardens located at 1951 Woodlea Road in Tavares. The hours are Monday through Friday from 9 a.m. until 4 p.m. Just like your yard Discovery Garden changes with the seasons and will reveal something new with each visit. Pictured below is the nectar garden.



Calendar Of Events

Due to COVID 19 activities and educational offerings are virtual. Please refer to our website for future offerings. plans will soon be completed for an upcoming series. The site for is at <http://sfyl.ifas.ufl.edu.lake/> or <https://lakegardeningprograms.eventbrite.com>

Extension programs are open to all persons without regard to race, color, sex, age, disability. religion, or national origin.

Arbor Day Celebration will take place on January 16th at Wooten Park, 100 E. Ruby St in Tavares, FL. from 10 am until 3 pm. Master Gardener Volunteers will be assisting in a free tree give away along with answering gardening questions at our Mobil Plant Clinic.

Be sure to read the monthly *From the Extension* articles in the *Daily Commercial*.



Plant Clinic

Remember that if you have questions or concerns about plants you can visit the plant clinic from 10 a.m. to 2 p.m. with your questions. Please remember that COVID cautions are in place and a controlled number of visitors with masks, are allowed into the office.

You can also call at 352-343-4101 or email lake@ifas.ufl.edu with your questions.