THE YOLO GARDENER

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Leaffooted Bugs

Cathy Sutton, UCCE Master Gardener, Yolo County

The first time I saw a Leaffooted Bug was inside a mason jar in a Master Gardener class. I thought it was rather cute with small leaf-like enlargements on its hind legs. The next sighting of the bug was on a pomegranate I let split open for the birds. Masses of Leaffootted nymphs covered the pomegranate seeds. This spring, Grace Garden's orchards have an outbreak of the insects on their apricot trees. According to UC Statewide Integrated Pest Management Program, Leaffooted Bugs are occurring more frequently in gardens in this area.

Leaffooted Bugs are medium to large size insects that feed on fruits, nuts, fruiting vegetables and ornamentals. There are three common species that are native to California: *Leptoglossus zonatus, L. cypealis*, and *L. occidentialis*. Although they vary somewhat, all three have a white zigzag pattern across the wings and are about .75 to 1 inch long and have a narrow brown body. All have leaf-like enlargements on their hind legs.

Leaffooted Bugs are efficient feeders. They are piercing-sucking insects that have mouthparts that extend more than half the length of their bodies. They probe into leaves, shoots, fruits and nuts and suck plant juices. They are increasingly a problem on almond, pomegranate and tomato crops. Early feeding on nut crops or small fruit can cause fruit drop.

(continued on next page)

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During most years populations are low enough that damage to ornamental, fruit and vegetable crops is tolerable. Good horticultural practices help in keeping the population under control. Remove overwintering sites such as pomegranate or other fruit culls. Also remove weeds, as adult insects overwinter in weedy areas, which they use as a food source. They also hide

Leaffooted Bug Eggs

in wood piles, palm fronds, citrus or juniper trees, and barns.

Effective management includes handpicking adults off plants and crushing them or putting them in soapy water. A hand held vacuum may be used to suck them up. It is important to also remove egg masses. Egg masses have ten to fifteen eggs in a pearl-like strand. Most frequently the eggs are along a stem or leaf midrib.

Late season infestations may occur on pomegranate and prune trees. If possible remove the nymphs using water from a pressure hose. Once the nymphs fall to the ground they can be smashed. It is also important to continue removing egg masses. For more detailed information please see: http://ipm.ucanr.edu/PMG/PESTNOTES/pn74168.html

I still find the Leaffooted bugs to be fascinating and rather cute. However, I much prefer to see them in a mason jar than clinging to my fruit and nut trees.

Acts of Mimicry

Jack Kenealy, UCCE Master Gardener, Yolo County

On several occasions over the years I've noticed weeds that looked remarkably unlike themselves and very much like the vegetable I was growing. Next to my corn there appeared a dandelion, its leaves extremely tall, narrow and tightly bunched. At first glance it was just another stalk of corn. On another occasion, amongst my spinach, another dandelion had big broad leaves and no hint of a yellow flower. Again, a weed had camouflaged itself to look like my prized crop. Over the years, I encountered this phenomenon to the point I began photographing examples. Photographs I cannot find for the life of me. But I've often wondered about the impulse that made the weed aware that it was a weed. Couldn't the corn be the weed if I was growing dandelion for tea? And how could a weed act so unlike its true nature?

Given the opportunity to find my answers my initial research led me to the sure conclusion that these occasions were evidence of "Weed Mimicry", a term I discovered on my first internet search. How could my 'look a like' weeds not be an example of such a thing. Well, not so fast.

Crop Mimicry in Weeds is sometimes referred to as Vavilovian Mimicry after the Russian biologist and geneticist Nikolai Vavilov. Evolutionary genetics is a relatively new scientific discipline, primarily dating back to Nikolai Vivlov's research in the 1920's, 1930's and 1940's. According to Vavilov, Crop, or Vavilovian Mimicry requires three things; a beneficial crop, often referred to as the model, the weed or mimic, and an agent or dupe. One doesn't have to go far to find examples of mimicry. Do you like oatmeal, pastrami on rye? Both oats and rye are examples of crop mimicry at work. Vavilov found that oats and rye were weeds that survived among the barley and wheat fields by looking enough like the crop to pass inspection by the human weeders and threshers (the dupes!). As the range of wheat and barley grew into harsher regions, the weeds rye and oats did better than their original hosts and were raised themselves as crops. Vavilov called these weeds to crops secondary crops.

So going back to my sneaky dandelions, they were weed mimics, right? Not necessarily so says Professor Marie Jasienjuk, UC Davis Department of Plant Sciences. "Similarity alone does not mean there has been an underlying genetic change." Crop Mimicry is essentially Darwin's theory of natural selection put into practice. Through the act of weeding, or in the case of not weeding, plants that look similar to the desired crop are permitted to survive the weeding or selection process. Over time the preferred genes come to the fore, not unlike a dog or horse breeder encourages certain characteristics and discourages others.

Weeds are able to reproduce seeds in amazingly large numbers. In researching this article, I learned that one crabgrass weed can produce as many as 100,000 seeds. Take a look around your yard or your neighbor's yard. The ability to generate such massive amounts of progeny translates into an ability to produce variations in untold numbers. With those numbers comes adaptation. With weeding, or other acts of the agent or dupe comes the selection process which funnels the adaptations into more and more successful acts of mimicry.

There are two classifications of crop mimicry, vegetative and seed mimicry. The mimicry would depend upon the actions of the agent, or dupe. If the selection process is based upon how a plant looks, then the mimic would tend to duplicate the appearance of the plant. If the selection process involved the seed, as in the case of winnowing or threshing, the mimicry occurs in the weight, size of other characteristic of the seeds.

While my dandelions' similarity to my corn or spinach is fairly innocuous, Weed Mimicry can create serious problems for agriculture. Professor Jasienjuk is studying weeds among the rice crop that become resistant to herbicides. While technically not an instance of mimicry, but of evolution generally, Jasienjuk and her team have seen plants adapt and evolve to where they can become herbicide resistant in as little as five years.

In his book *Plant Evolution under Domestication*, Gideon Ladizinsky, discusses a weed, *Vicia sativa*, which infests lentil fields across the globe. Normally the seeds of this weed are spherical. But in lentil fields the seeds are flattened. And to make matters worse the weed has adapted in size as well as shape. In Nepal, for example, where lentil seeds are small, the seeds of the weed are small. In California, where the lentils are large, the seeds of the weed are correspondingly large. The taste of the seeds of this weed, which are impossible to separate from the lentils, is bitter. The impact of such a situation to the lentil industry is difficult to predict.

Writing in *Economic Botany*, New York Botanical Garden, 1983, Spencer C. H. Barrett of the Department of Botany at the University of Toronto observed about weed populations that develop a close resemblance to a crop and as a result of mistaken identity evade eradication that "(t)his phenomenon, known as crop mimicry, is poorly documented and most of the pertinent literature is anecdotal." I have to report my initial reaction to my observations were more along these lines and probably not sustained by the science on the subject.

Asked whether my dandelions were or were not instances of weed mimicry, Professor Jasienjuk was not so sure. There are a number of factors that might come into play, according to the Professor, but most important would be the intensity of the selection process and the life cycle of the offending plant. And there would have to be evidence that the dandelion had been genetically altered to create the characteristics of being tall and skinny or short and broad. My observations were evidence of the ability of plants to generate mutations, perhaps, but little more.

I also spoke with Professor Ross-Ibarra who, like Professor Jasienjuk, works in evolutionary genetics in the Department of Plant Sciences at UC Davis. Professor Ross-Ibarra, whose mother happens to be a UCCE Master Gardener Yolo County, is concentrating his study on the evolutionary genetics of corn and its relatives, including the weed teosinte. Professor Ross-Ibarra established that the teosinte had passed on some of its genes into the corn of Central Mexico. I asked the Professor what would cause my dandelions to look like corn.

"The short answer," he replied, "is I don't know." But he also said that there could be environmental factors at play. If plants were crowded together, it could be an effort on the part of the plant to grow straight up

into the sunlight. Fertilization might be another factor to consider. As soon as he mentioned "crowded conditions" a light came on. Due to football knees I have always gardened in raised beds. Not necessarily a "square foot gardener", I always have my limited space packed with produce.

While not as exciting an answer as I had anticipated, I felt as if my question was answered. And isn't that the purpose of inquiry, research, and science? For those interested in learning more about this fascinating subject, go to Professor Jasienjuk's lab's webpage at http://www.plantsciences.ucdavis.edu/plantsciences_faculty/jasieniuk/. To learn more about Professor Ross-Ibarra's work with maize and teosinte, visit http://www.rilab.org/.

The next time I see a weed pretending to be something it's not, I'll look to its environment and not to its genes. And if there is a true mimic in all of this, it's probably me trying to act like an evolutionary geneticist!

Grow a Second Season Vegetable Garden

Michael Kluk, UCCE Master Gardener, Yolo County

Last night, there came a frost,
Which has done great damage to my garden. . .
It is sad that Nature will play such tricks on us poor mortals,
Inviting us with sunny smiles to confide in her,
and then, when we are entirely within her power, striking us to the heart
-Nathaniel Hawthorne

That is a fair warning to cool weather gardeners, but the outcome is not inevitable. In this article we'll consider how to grow a cool season vegetable garden without Nature striking you to the heart. . . most of the time at least. Vegetable gardeners who put the tools away at the first frost are missing an opportunity. A second season, cool weather, vegetable garden can be easier and every bit as productive as the summer edition. With a bit of planning and a few winter specific approaches, you can successfully grow vegetables that are as varied and tasty as anything summer has to offer. As an added benefit, since you are generally eating stems and leaves, cool weather vegetables are more nutritious than the fruits of vegetable plants we typically eat in the summer. There are three keys to a successful cool season garden; grow cold hardy vegetables, start at the right time, and be prepared to cover up if truly cold weather settles in. Cool weather vegetable gardens actually have two versions; fall/winter and winter/spring. (See the *Cool Weather Vegetable Planting Chart* below.)

A lot of garlic can be grown in a small area. It will make it through most winter dry spells without irrigation.

Planting Times

The key to a successful fall/winter cool weather garden is planting it early enough to become established before the cold weather sets in. (That helps to explain why a winter gardening article is running in the summer newsletter.) The key to a successful winter/spring garden is waiting long enough for the soil to warm a bit before planting. Timing is everything. Transitions are often hard and that can be the case here as well.

In many respects, your winter garden will take less work than the summer version. Weed and bug problems are fewer. You will normally not need to water as often. However, a well-hydrated plant will handle the cold better

than one that is drought stressed. So, be prepared to water some if there is an extended dry spell in the winter. Choosing beds that are protected from the prevailing winter wind will also help. Generally, you should not mulch your winter garden. The soil will warm better if exposed to the sun and because evaporation is less, the benefits of mulch are outweighed by the disadvantages in the winter.

Butter lettuce looks delicate but will easily handle a Valley winter and is slow to bolt so is a good choice for the spring

Cool Season Varieties.

The majority of plants you grow in your cool season garden will likely come from two families. The mustards, family *Brassicaceae*, includes most of the common cool weather vegetables, everything from broccoli, cauliflower and kale (all three *Brassica oleracea*) to turnips (*Brassica rapa*) and dozens of others. The daisies, family *Asteraceae,* include a diverse group of flowering plants but for our purposes – lettuce *(Lactuca sativa*) in all of its myriad manifestations. There are a few other potential actors to consider as well, including peas (*Pisum sativum*), spinach (*Spinacia oleracea)*, Swiss chard (*Beta vulgaris*), beets (*Beta vulgaris*). mache or corn salad (*Valerianella locusta*)**,** onions (*Allium cepa L.*) and, of course, garlic (*Allium sativum*). These plants share the characteristics of being cold tolerant and able to survive in the short days of winter once established. That does not mean that they will do well in the shade. They still need at least six hours of sunlight per day, and ideally more. Choose your winter garden beds well to maximize exposure to the sun you have available.

There is some distinction between vegetables that will do best in your fall/winter garden and those that will do best in the winter/spring. The "root" brassicas such as turnips (*Brassica rapa*) and rutabaga (*Brassica napus*) will often do better planted in the winter/spring than the fall. When planted in the fall, they sometimes do not develop fully, wait through the days of winter and then, with the lengthening days of spring, flower without developing a good storage root. Still, if you plant them early enough and the fall is mild enough, they can do well. When planted in the late winter/early spring, they tend to be more dependable and develop more completely. On the other hand, spinach and mache' will bolt (flower) quickly if we have an early warm spring so are more dependable when planted in the fall. Most all of the others are equally successful in the fall or the spring if planted at the right time.

One of the big challenges to growing a cool weather garden is deciding where to put it. Many fall/winter vegetables will need to be planted in August or early September – when your summer crops are still producing well. Some of your winter/spring crops may still be going strong when it is time to put in the summer garden. You can never have too many garden beds and this is a good argument for establishing more. You'll find that the rotation is easier if you plan ahead. You may have a summer cover crop such as buckwheat on some beds, just waiting for your winter vegetable starts. A quick crop such as potatoes or sweet corn will generally be harvested before it is time to plant your fall garden. Peas, planted for the winter and spring, will likely be tired when it is time to plant the summer vegetables. With a year or two of winter gardens under your belt, you'll have the rotation figured out. It is worth the effort. Instead of winter cover crops or mulch on all of your beds, some will be growing salad and a vegetable side dish.

The *Cool Weather Vegetable Planting Chart* below includes hardy vegetables you may want to consider growing and the best time to plant seeds, starts (small plants) or to seed your own starts for planting out later. It is by no means a complete list. Note that some plants, such as broccoli and cabbage, are generally planted out as young plants or starts. These can be purchased from a local nursery or you can start them in a sheltered area such as a greenhouse or inside under grow lights. If you choose to start your own, you will of course need to start

earlier. Other plants, such as lettuce, can be planted as starts or effectively direct seeded into the garden. Some, such as turnips, are best direct seeded. The best planting date "depends" on whether the cold settles hard in the fall and lingers in the spring at your garden site. Note that many of the plants should be started as early as July. The following is based on Robert Norris's *Vegetable Growing Guide* that can be downloaded from http://ucanr.edu/sites/YCMG/files/206763.pdf

Cool Weather Vegetable Planting Chart

Vegetable	Jan	Feb	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Beets		S	S	S				S	S	S		
Bok Choy	P						ST	ST	P	P		ST
Broccoli	ST	P	P				ST		P			ST
Broccoli Rabe	S	S							S	S		
Brussels Sprouts							ST		P			
Cabbage	ST	P					ST	S	P			
Chinese Cabbage	ST	P					ST	S	S P			
Cauliflower	ST	P	P				ST	S	P			
Fava beans	S									S	S	
Garlic										S	S	
Kale	ST	P	P				ST	ST S	S P	P		
Kohlrabi	ST	P	P				ST	P	P			
Leeks	ST	P	P					S	S			
Lettuce	ST	S ST P	P S	S				ST S	S ST P	S P	P	
Mache'	S	S							S	S	S	
Mustard Greens	ST	P	P S	S			ST	S	S P	S P		
Onion Seeds	ST	P						S				
Onion Sets	P									P	P	
Peas		S	S						S	S		
Radish – inc. Daikon		S	S	S					S	S		
Rutabaga							S	S	S			
Spinach									S	S	S	
Swiss chard		S	S	S	S				S	S	S	
Turnips		S	S	S				S	S			

S- *Direct seed in the garden*
ST- *Start in a seed tray in a protected area*
P- *Plant starts out in the garden*

Conclusion

Fresh vegetables out of your backyard garden are the freshest and most local you can possibly have. A cool weather vegetable garden can be a great addition to your gardening year. It will often present even fewer challenges than your summer garden if you grow cold hardy vegetables and plant at the right time. This fall will present a vegetable growing opportunity you should not pass up.

On the Trail to Solve Mysteries in the Plant World

Willa Bowman Pettygrove, UCCE Master Gardener, Yolo County

What does the fictional character of Indiana Jones (an archaeologist of the Hollywood variety) have in common with the discipline and hard work associated with plant research? A Master Gardener training featuring UCD Plant Geneticist Jeffery Ross-Ibarra had all the elements of a Hollywood drama, without the snake-filled cave or the slouch hat. He told us how the origins of corn, a new world plant with tremendous worldwide economic value, were discovered with the combined efforts of archaeology, plant genetics, and native plant identification. Researchers have gone to old sites of human occupation in central America to find remnants of early food, and even pollen grains, to reconstruct genetic information.

A much simpler version of my own journey began with my fascination for the very beautiful flowers of a very practical plant, gourds of the *Cucurbit* family. Large white or yellow blossoms of this family make an inviting landing pad to support a variety of pollinators (especially moths, butterflies, and bees). My main "research" tools (so far) have been the internet and the Shields Library at UC Davis. I decided I had to grow them, if only for the flowers let alone mature gourds.

I'm a gardener, yes, but I have related interests that feed my enthusiasm in this topic. I wrote my own research paper on "history of corn" in an Anthropology class in the 1970s. (I decorated the paper's cover with the Mayan glyph for corn.) I love the shared and also very unique ways human beings make use of their environments, in their "culture". Gourds have played important roles in many cultures as material for musical instruments, as containers for food storage and preparation, and as the inspiration for other beautiful, useful articles, such as bird houses. In some cases, it appears that gourds supplanted the need for pottery vessels, and in others were the inspiration for gourd shaped pots. Of course some gourds are also good to eat.

I had a lot to learn; I thought gourds were native to the Americas. Two years ago I had the opportunity to travel to Ghana, and noted that there a gourd-like fruit grows on trees. Called calabash in Ghana, my recent research has identified that this fruit is used much like a gourd. The tree is a member of the *Bignoniaceae* family, which includes trees (Desert Willow) and vines (Trumpet Vine). West African musicians use calabash in a variety of drum versions, including a very resonant one that consists of a large "gourd" floating on a water-filled wash tub. In another version, Brazilian musicians make what looks like a standing bass, using a calabash (*cabaca* in Portuguese) as the resonator and a stretched gut strap on a rod.

What just happened? In describing the gourd/calabash and musical instruments, I jumped from Africa to South America. This is the most interesting part of the story: gourds (the Cucurbit cousins) probably originated in either Asia or Africa. The calabash "gourds" I saw in Ghana are native to the Americas. Cultures on both sides of the Atlantic have found ways to use both kinds of fruit.

African musical instruments made from gourds.

It was easy to find information on the calabash tree; the US Department of Agriculture has a large database that is good for checking potential invasive plants[1]. Cucurbits, including ordinary squash and gourds, are so much a part of many cultures that the origins aren't as clear. A quick scan of the Encyclopedia of Food and Culture indicated the origin is Asia or

Africa. One can, of course, "Google" images of all kinds of gourds in use from many different continents. That doesn't explain how plants with similar uses traveled across oceans to be accepted by new cultures. One author noted that the obvious explanation, that thick-shelled gourds might float across oceans, doesn't cover the issue of humans' role in their spread and cultural adoption. (It has some worrisome implications in terms of invasive species, certainly.)

One clue came from an article on musical instruments in Brazil that are very similar to ones documented in African cultures. The obvious connection between both instances was the slave trade. [2] Slave ships didn't travel in only one direction . "On the West African coast, European traders and freed slaves alike were running lucrative plant-export businesses to the Americas by the nineteenth century." This author lists more recognizable products from this trade, including Kola nuts, and Melegueta pepper[3]. This takes me back to my original thought, finding the germ of truth in movies and other fiction, usually without the drama or scary bits. People and plants and their cultures have been interacting in important, interesting ways for millennia.

(Endnotes)

1 http://plants.usda.gov/core/profile?symbol=CRCU. This database is searchable by common name, for example "calabash tree".

2 James Sera and Robert Volks. Berimbau de barriga: Musical ethnobotany of the Afro-Brazilian diaspora. In Volks & Rashford (eds.) African Ethnobotany in the Americas, 2013, New York: Springer, p. 195-213.

3 Erica S. Moret. Trans-Atlantic diaspora ethnobotany. In Volks & Rashford (eds.) op cit., 217-245.

Summertime at Grace Garden

Pam Thomas, UCCE Master Gardener, Yolo County

Grace Garden was started in the summer of 2009 with a mission of feeding the hungry. UCCE Master Gardeners Cid Barcellos and Gwen Oliver looked at nearly an acre of weeds behind the Davis United Methodist Church and decided the space could be more productive. Today, the garden has eight four by fifty foot beds, six raised beds, an orchard, three demonstration beds, and a large hoop house for starting seedlings.

One of my favorite jobs at Grace Garden is harvesting and weighing all the produce and recording the totals. Gracie our garden cat always jumps in to help. Since 2009 we have harvested over 7,000 pounds of fruit and vegetables. Last year, despite the drought, we had our largest harvest about ever—1,700 pounds of vegetables and fruit. Ninety percent of our harvest is donated to Friday's Harvest, a weekly produce giveaway at Davis Korean Church, and to Davis Community Meals, which offers free meals to the community. Cid harvested the first zucchini on May 19 this year, three weeks earlier than last year. As of May 28, we have harvested 129 pounds of artichokes, beets, broccoli, cabbage, carrots, kale, lettuce, radishes, strawberries, and zucchini. That total includes 69 pounds of apricots. The Blenheim apricots, plums, and pluots will be ready to pick soon. Our goal is always to grow more food every year that we can donate, and it looks like we should be able to top last year's totals. I post the totals on our website if you want to keep track. (https://sites.google.com/site/gracegardendavis)

We also have a community harvest program. If you have extra fruit or vegetables that you would like to donate, you can drop them off at Grace Garden on Thursday and Saturday mornings from 8:00-10:00.

It's always busy in the summer at Grace Garden. When the iCare volunteers helped in April, they prepared the beds and planted vegetables, herbs, and flowers. They also helped with our long list of painting projects. The Adirondack chairs have bright new paint and the sorting table got one coat of paint. The picnic table, potting bench, and small table are still on the To-Do list. Gwen created and painted garden markers for each row, so that volunteers can find their way in the garden, and they are in place. Of course, we're also busy pulling weeds, spreading compost, and fixing irrigation.

Cid put the word out for more volunteers, and so many people responded. **Willa Pettygrove** has agreed to be Grace Garden's Administrative Assistant. She will take care of scheduling and maintaining the calendar, posting announcements, and helping with our fundraising events.

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http://ucanr.edu/sites/YCMG/Yolo_Gardener/

Weighing the harvest.

Master Gardeners **Cathy Sutton, Mike Kluk,** and **Lori Prime** have volunteered to take care of the orchard. The first fruit trees were planted in January 2011, and the orchard now has 14 trees including apricots, plums, pluots, nectarines, peaches, and pomegranates. Last year we harvested and donated 367 pounds of fruit. Cathy, Mike, and Lori will be in charge of pruning, thinning the fruit, harvesting, irrigation, and keeping the trees healthy.

Grace Garden depends on volunteers. We appreciate all the volunteers who have helped at Grace Garden this year, including members of Davis United Methodist Church, UC Davis students, Alpha Phi Omega fraternity, youth groups from Congregation Bet Haverim, Master Gardeners, and people from the community. Volunteers are always needed, especially in the summer, so let us know if you want to join the fun at Grace Garden and help with harvesting, weeding, and taking care of the garden. The summer schedule started June 1st. Work days are Monday, Thursday, and Saturday mornings 8:00 a.m. to 10:00 a.m.

What Plant is That? There's an App for That!

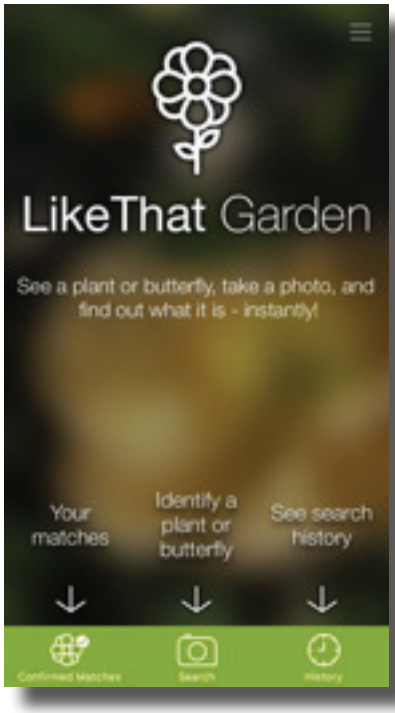
Michelle Haunold, UCCE Master Gardener, Yolo County

I love to travel and of course taking in the local flora is part of the fun. If you are anything like me, you do not carry a plant ID guide around. While I love my *Sunset Western Garden* book, it is simply too big to take with me.

People assume that as a Master Gardener I know all the plants out there. But there are literally thousands of wild and cultivated plants and flowers and it is impossible to know every one. Plenty of times, people have asked me what a certain plant is and I tell them I will have to go look it up. That look of disappointment creeps over their face and I usually get, "but I thought you were a Master Gardener? Shouldn't you know this stuff?" I just laugh.

But thankfully, you don't need to be a genius or carry a plant ID guide with you. There's an app for that! You can download it to your smart phone to help you identify plants and flowers wherever you are!

It is called, "Like That Garden," and has been a great addition to my gardening toolbox. The app is available for both IPhone and Android. It was a free download last year, but I just did a search for the most recent version which now costs $2.99.



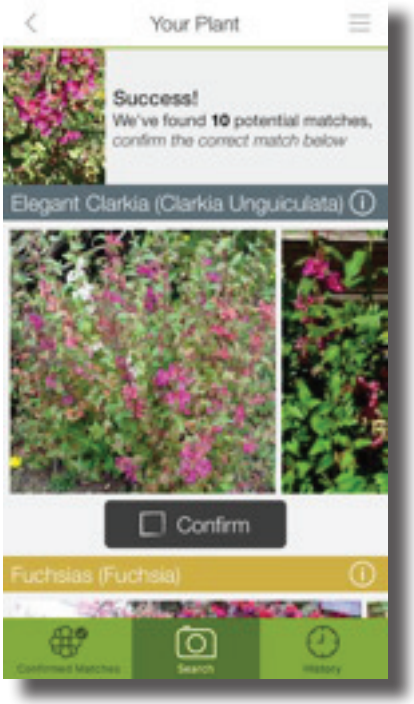
When a handsome young man at a UC Arboretum plant sale first introduced me to this app, I thought he was teasing me. I am not particularly tech-savvy and I just could not believe you could use a smart phone to identify a plant, but all you do is take a picture of the flowers and submit. The app scans the photo and pops up with a list of probable matches.

You simply look through the suggested photos provided for a match. If one looks like the flower you are trying to identify, you hit the information button next to the listing to get a detailed description starting with all the technical information, including the Latin botanical name as well as the common name, and all the growing details.

I have used this app during my travels throughout California and parts of Oregon on cultivated plants as well as wild plants and have had pretty good success identifying plants that I was not familiar with. There are some drawbacks however.

You must take a good clear picture of the flower. I have identified some plants using just the leaves, but that is not the strength of this app. The app doesn't work well with succulents either. I am not sure if this is because of the database this app pulls from, but supposedly the more plants and flowers that are identified and confirmed, the better the app gets.

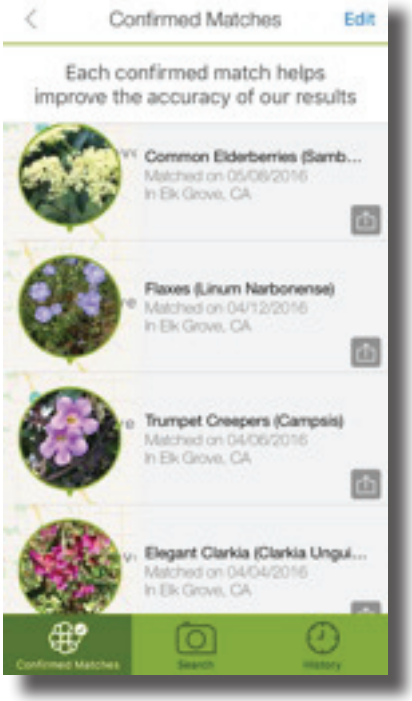
Once you find the match, you hit a "confirm" button that immediately puts the plant into a "confirmed matches" section, so you can go back and look at all the flowers you have identified, the photos you took, and when and where you took them. Even if you delete a photo from your phone, it stays in this section, which is really handy. I also like that a record is stored of the flowers one has identified because you never know when you might need some inspiration for the garden. You simply go back and look at the list of plants for ideas.



One of the drawbacks is that you are not able to access the information about the plant, only the photo and the technical and common name when you access your stored list of identified plants. For a simple work around just visit the "history" section of the app, which shows you a list of all the plants you have used the app for, whether you have confirmed them or not. It is a little awkward but it works.

My associate James Fowler, editor of the *Yolo Gardener*, notified me of another problem. He tried the app in the UC Davis Arboretum and was not able to identify a single plant using Like That Garden. I have not personally tested it out at the arboretum to confirm his experience yet, but so far I have had about

90% success with the plants I have tested the app on. I had difficulty identifying succulents with this app, however. I also had difficulty identifying plants when I submitted pictures of leaves without flowers.



A wildflower I had not planted suddenly started blooming in my yard this last year. It was pretty so I let it stay; I have a Darwinian approach to gardening! I had no idea what it was so I took a photo with the app and waited. It popped up with ten possible matches, among them Fuchsia and Penstemon. Clearly it was not either of these so using process of elimination as well as reading the information for each suggestion and comparing pictures I was able to identify the flower as *Clarkia unguiculata* or Elegant Clarkia.

You can share your discoveries with friends with a simple "share" button that allows you to text or email the plant, which is also a nice feature.

This is by no means the end all be all to plant ID apps. Doing a quick Google search brings up at least twenty just on the first page of the search. There is plenty to explore if you enjoy the techie side of gardening. But this is one app that I have had good success with. It is easy to use, affordable, and a great tool to have while traveling.

I will be heading over to the arboretum soon to do further testing on exotic and native plants but as of this writing, I am thrilled with the *Like That Garden* app and recommend it to anyone who stops me and asks me "What plant is that"?

Summer Garden Tips

Peg Smith, UCCE Master Gardener, Yolo County

GARDENING REMINDERS:

We have already had a taste of that summer heat that feels like a pile driver on your head as you walk the garden and more is certainly to come.

Make sure plants are watered by deep soaking on a regular schedule early in the morning to carry them through the heat of the day. Many plants will appear wilted with the onset of intense afternoon heat. Before adding more water to 'give them a lift' check the soil to see if it is damp. If the soil is damp the plant is most likely unable to pull up enough moisture from the soil to counter balance the amount of water it is losing through its leaves by evapotranspiration because of the heat. Allow the plant to recover overnight and check wilt and soil dampness again in the morning. Eager gardeners can tend to overwater drooping plants. Plants don't do well with too much or too little of a good thing - water. They will wilt because of too much water as well as wilting because of too little water. To be healthy a plant requires around its roots an approximate combination of 25% air, 25% water and 50% soil. If we over or under water the plant will wilt and be stressed.

One of the earliest references in a gardening book of how to control slugs and snails comes from Leonard Mascall who was an English author and translator who died in 1589 – he simply described hand picking them.

A math problem: A snail sees a row of fresh lettuces at the top of a sloped garden 20' away. Every morning it climbs 5' up the slope but then slides back 4'. How many days will it take to reach the lettuces?

Answer: It will never reach them – if you do the following.

We tend not to see slugs and snails in the summer heat. They have already beaten a hasty retreat by the time most of us get up. The best time to keep up with these voracious feeders by hand picking is immediately after your irrigation has deep soaked. Head out into the garden with a flashlight in the gloaming of the evening or in the gentle light of late sunrise and you will be able to hand gather quite a few. If bending and collecting squishy things is not your preference or you have a particularly large population of slugs and snails here are two other methods. Beer traps (it does not have to be alcoholic), half fill a shallow container - cat food tin, pint yoghurt container - with the beer sink it in to the ground then clean up your catch in the morning. Also a pelleted product containing Iron Phosphate is available from most garden nurseries or stores and can be scattered on the soil or mulch surface.

Stay cool! Summer is a good time to look at everyone else's gardens and consider and plan what you'd like to plant in the fall – the ideal planting time in any garden.

- **Water**

Become familiar with your city water restrictions and do your part to save water. Many gardeners are including more drought tolerant plants in their gardens. Remember to place plants with similar water requirements together in your garden to maximize water efficiency.

Additional ways to conserve water and keep your plants happy are to keep the weeds to a minimum and add mulch to your garden. Four inches of mulch will inhibit weeds, conserve water and keep you plant's roots cooler. Also, if you are not using drip irrigation consider this for some areas of your garden. Gardening with limited water tips-http://ucanr.edu/sites/YCMG/files/184804.pdf

- **Pests and Diseases**

Prevention is the easiest way to minimize plant damage. Stroll through your garden several times a week to scout out potential problems. Regularly check the leaves and flowers for evidence of pests and diseases. Typically, the hot summer heat increases pest activity.

Whitefly, spider mites and katydids enjoy feasting on many kinds of plants. Thrips and horntail wasps disfigure roses, and leaf miners and hornworms chew tomatoes. Blasts of water and handpicking (hornworms) early in the morning will deter most infestations.

If the cooler spring weather caused an increase in powdery mildew and rust fungus on susceptible plants, it is usually not necessary to treat with fungicides. The warmer temperatures will help reduce this problem.

To help identify the pest or disease your plant may have, consult www.ipm.ucdavis.edu for an extensive list of articles and photos for the correct treatment. Also, you can email a photo or bring in a sample to Master Gardener office. mgyolo@ucanr.edu .

- **Weeds**

"Where there is dirt, weeds will grow" - Gail Jankowski. A few tips to reduce weeds are to use taller plants, lay newspaper down then mulch to smother out new growth and manually dig out roots when soil is moist.

- **Lawns**

Grass can survive with less water than you think. Follow your city watering guidelines. Set the mower blade at the highest setting and recycle the clippings (pure nitrogen food it decomposes). Considering removing the lawn? Check out this site for the technique that works best for you. www.ucanr.edu/scmg/Lawn_Replacement/Grass_Removal_Methods

- **Fruit**

If you haven't thinned your fruit trees and vines, they can still benefit. Thin fruit trees (apple, peach, cherry, apricot and grapes), so that there is 6 inches between each fruit or cluster. This may seem drastic, but your fruit will be larger, more flavorful and it will greatly reduce the risk of broken limbs and branches. Mature fruit trees need a deep soaking every 3 to 4 days during crop production. Grapes do best with deep water to a depth of 18 inches and then allow them to dry to a depth of 6 inches between watering. Birds can be deterred by using netting and by placing shiny objects in the canopy.

The Cherry Maggot (*Drosophila suzukii*) has invaded home cherry crops for the past several summers. The maggots are not discovered until the cherries are ready to harvest. There are several methods of reducing or eliminating this pest. The most environmentally friendly method is to use Spinosad with 4-6 tablespoons of molasses per gallon of water. For a complete discussion of this pest problem visit www.ipm.ucanr.edu/PDF/PEST/NOTES/pnspottedwingdrosophila.pdf

- **Vegetables and Herbs**

The most popular vegetable (technically a fruit) is the tomato. It usually grows effortlessly and is happiest when it is deep watered (8 inches), 2 times a week. This helps reduce cracking, ridging and blossom end rot.

To keep vegetable crops continually blooming, harvest regularly, and continue inspecting for pests. In August, pinch back the plants to help the existing fruit to ripen before the cooler weather arrives. Harvest herbs just as the flowers begin to form for the most intense flavor. If your harvest is bountiful, dry your herbs, by hanging them upside down in bunches for future use.

Now is the time to begin thinking about your fall vegetable harvest. Fall vegetables, such as broccoli, cabbage, snap peas, beets, carrots, and winter squash need to be seeded in July or transplanted in August for your fall vegetable garden.

- **Flowers**

Flowers need to be deadheaded to encourage repeat blooming. Continue to fertilize your flowers, especially heavy feeding roses, every six weeks through October. For a full October bloom, prune your roses back by 1/3 in August. If you prefer the beauty of rose hips, then refrain from pruning your roses in August.

Potted plants and hanging baskets need a weekly application of liquid fertilizer (15-30-15). They also require more frequent watering.

Herbaceous plants such as cosmos, delphiniums, foxglove, and peonies need to be staked or supported. Continue to keep your garden free of weeds.

Prune spring blooming shrubs after the blossoms drop. Spring blooming vines such (lavender trumpet vine and clematis) should be pruned after the blooming. Fertilize after pruning to encourage bud set for next spring

It is not too late to plant quick blooming summer seeds, such as nasturtiums, sunflowers and cosmos. You can also plant summer blooming bulbs, such as dahlias and cannas.

Continue to harvest your vegetable and herb crops on a regular basis, to promote and prolong summer's bounty.

Summer gardens bring enjoyable surprises and anticipation.
Try planning some new flowers, herbs and vegetable varieties. You may discover that you have a new favorite to add to your tried and true plantings.

Tend your summer garden like the good friend it is, it will provide a season of bountiful rewards and be a welcoming summer retreat.

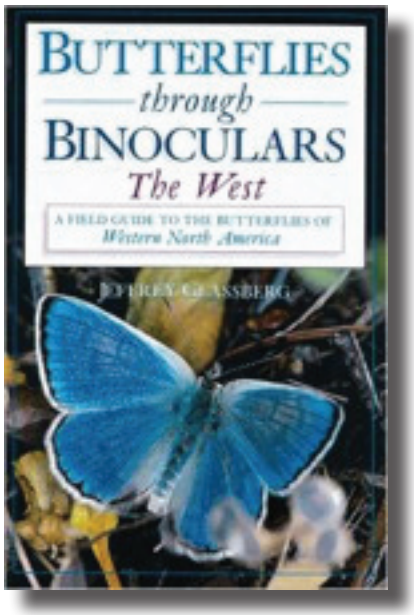
Garden Books

If you already have converted some or all of your garden to water wise and CA native plantings the following books will help you identify the beneficial and pollinator visitors to the garden.

Butterflies through Binoculars by Jeffrey Glassberg, Oxford University Press 2001

Caterpillars in the Field and Garden by Jim P. Brock, Jeffrey Glassberg, Oxford University Press 2005

The Bees in Your Backyard by Joseph S Wilson and Olivia Messinger Carril, Princeton University Press 2015



SUMMER ACTIVITES

- UCCE Master Gardeners, Central Park Gardens, and the City of Davis will co-sponsor 'ABCs of Sustainable Gardening' **June 28 6:30 p.m. to 8:00 p.m. with** repeat presentations on **July 21**, **6:30 p.m. to 8:00 p.m.** at the Veterans Center, 203 East 14th Street, Davis, and on **August 18**, **2:30 p.m. to 4:00 p.m**. at the Davis Senior Center, 646 A Street, Davis,
- State Fair, **July 08-24**: www.castatefair.org
- Fair Oaks Horticultural Center 'Harvest Day' **August 6**, 8AM – 2PM Open Garden', **September 17**, 9AM - Noon http://ucanr.edu/sites/sacmg.
- 9th Annual Tomato Festival, **August 13**, 8:00 AM – 12:30 PM Woodland, CA www.woodlandtomatofestival.com.
- Yolo County Fair, **August 18-21**: www.yolocountyfair/net.
- UC Davis Arboretum ongoing check calendar: http://arboretum.ucdavis.edu/calendar.aspx.

MG Information Tables at:

- Davis Farmers Market, every Saturday 8AM - Noon
- West Sacramento Farmers Market, Thursdays, 4PM – 8PM until end of August.
- Woodland Farmers Market, First and Third Saturday, 9AM - Noon until end of September.

HOW TO CONTACT US:

Like us on Facebook: UCCE Yolo County Master Gardeners.

Check our website for upcoming workshops and FREE gardening publications: http://ucanr.edu/yolomg.

Email questions: mgyolo@ucdavis.edu

Telephone: 530-666-8143. year round (except mid-December through January) from 8:00 a.m. - Noon.

UCCE Master Gardener Events in Yolo County

UCCE Master Gardeners, Yolo Couny have an information table at the:

- Davis Farmers' Market - Saturdays from 8:00 a.m. to Noon.
  3rd and C Streets, Davis
- Woodland Farmers' Market - Saturdays from 8:00 a.m. to Noon.
  In front of the Woodland Public Library on First Street
- West Sacramento Farmers' Market - Thursdays from 4:30 p.m. to 8:30 p.m. .
  110 Capital Avenue, West Sacramento

3rd Sunday of Every Month - UCCE Master Gardeners,Yolo County will answer gardening questions
Yolo County Library-Davis Branch from 2:00 p.m. - 4:00 p.m.

July 25 - from 10:30 a.m. - 11:30 a.m. UCCE Master Gardeners, Yolo County will answer questions at the Yolo County Food Bank Distribution center.
RISE Community Services
17313 Fremont Street, Esparto

August 13 - from 8:00 a.m. to 12:30 p.m. UCCE Master Gardeners will conduct tomato tastings and have an information booth at the Woodland Tomao Festival
Historic Woodland Main Street

August 18-21 - from Noon. - 9:00 p.m. UCCE Master Gardeners, Yolo County will have a display booth and an information table to answer questions at the Yolo County Fair
Flower House, Yolo County Fair Grounds

September 9 - from 10:00 a.m. to 11;00 A.M.UCCE Master Gardeners,Yolo County will answer questions at the Yolo County Food Bank Distribution center.
637 Todhunter Avenue, West Sacramento

Questions about your garden? We'd love to help!

UCCE **Master Gardener, Yolo County Hotline**..... (530) 666-8737

Our message centers will take your questions and information. Please leave your name, address, phone number and a description of your problem. A Master Gardener will research your problem and return your call.

E-Mail..... mgyolo@ucdavis.edu

Drop In..... Tuesday & Friday, 9-11 a.m.
70 Cottonwood St., Woodland

Web Site ..... http://ucanr.edu/sites/YCMG/

Facebook..... UCCE Yolo County Master Gardeners

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U.C. Cooperative Extension
UCCE Master Gardeners of Yolo County
70 Cottonwood Street
Woodland, CA 95695

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Please put: *Yolo Gardener* in the subject line

or

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