Master Gardener Horticultural

Communicator

University of Arizona Cooperative Extension July-August 1997

Things to Expect:

CITRUS FRUIT DROP is a natural thinning process, worsened by hot dry winds.

TOMATO BLOOM DROP is provoked by dry air and hot temperatures. Minimize exposure.

CICADAS emerge and fill the air with a buzzing cacophony. Little damage is caused and no practical control is available.

SEASONAL LEAF DROP of Carob, Rhus lancea, pines, etc. is a normal tendency, intensified by hot weather or drought.

ANTS AND TERMITES become more active and swarm during Arizona's summer storm season.

ROOT ROTS are often the result of overly wet soils brought about by summer rains coupled with over watering. Let the soil breathe.

LAWN FUNGUS DISEASES increase in warm, wet grass. Thick thatches, excessive watering frequencies and night watering increase fungus disease potential.

IRON CHLOROSIS can be induced with wet soils keeping the oxygen levels low. Iron absorption by roots requires an active oxygen transfer and the less oxygen there is, the less iron can be absorbed. Also, the wet conditions place the iron in a reduced (ionically) form that is less available for plants. If the symptoms occur and controlling water to dry the soil is difficult (e.g. lawns), use a chelated iron on plants with symptoms.

TOADSTOOLS AND SLIME FUNGI increase around the landscape with the warm wetness of the season.

PALO VERDE BEETLES will continue to emerge from the ground under infested trees.

Things to do:

WATER THOUGHTFULLY for better plant growth and to save water. Watering needs of plants increase with hot, dry weather. Be attentive to wilt symptoms. Water deeply, but only as often as necessary to maintain good growth.

MULCH SOIL SURFACES of tree, shrub and flower beds to keep root zones cooler and minimize evaporation loss of water.

WATER, MOW AND FERTILIZE LAWNS ATTENTIVELY. Stress can quickly become a severe problem now.

REPLENISH DEPLETED SOIL FERTILITY with a mild fertilizer application in August. Watering and rains leach away much of the soil's nutrients, and they will be needed for the second flush of growth in late September.

PROTECT TENDER BARK of both young and heavily pruned trees. Tree white paint can work acceptably as can other products designed for that purpose.

TRANSPLANT PALMS in the heat of summer for best results.

GET THE GARDEN SOIL READY for our glorious fall growing season.

TREAT FOR WHITEFLIES as best you can. 'Tis a noble erst futile battle in most instances.

Terry H. Mikel
Extension Agent, Commercial Horticulture

Scientists pit parasitoids against leafhoppers

Researchers at University of California Riverside are testing the effectiveness of natural enemies of beet leafhopper, an insect that transmits curly top virus disease to a wide variety of crops. The parasitoid lays its eggs in a beet leafhopper host egg, killing it.

UC Riverside entomologists Greg Walker, Imad Bayoun, Nasser Zareh and Serguei Triapitsyn have succeeded in rearing seven parasitoid species imported from Iran and Turkmenistan, the beet leafhopper's suspected region of origin. The scientists successfully mass-reared *Aphelinoidea turanica* on beet leafhopper eggs and released them among host plants — Russian thistle, annual saltbush, filaree and mustards. They sampled the area for *A. turanica* at least two generation times after the last release date and again the next spring. The recovery of *A. turanica* from the samples indicates that it successfully established and overwintered at this location.

Currently, the CDFA Curly Top Virus Control Program controls the disease by spraying Malathion on the leafhopper's overwintering and spring breeding grounds in wild vegetation. However, the agency, which is funding UC Riverside's parasitoid research, is trying to reduce pesticide use wherever pests can be managed effectively by other methods. CDFA is concerned about potential adverse effects on predator-parasite populations and on food sources of endangered species, as well as cost.

Beet leafhopper, *Circulifer tenellus*, is the only known North American vector of curly top virus. The non-native pest, which mostly occurs in arid regions, is also a vector of a serious citrus plant pathogen — citrus stubborn disease. The migratory nature of beet leafhopper makes insecticide treatments on a field-by-field basis ineffective at reducing the spread of curly top virus. "Leafhoppers migrating into the fields from the surrounding wild vegetation can inoculate crops with the virus," Walker explains. "So a regional control strategy is the most efficient way to reduce the incidence of curly top virus."

Adapted from California Agriculture, University of California, May-June 1997 Issue.

The Horticultural Communicator

Editor: Shanyn Goodnight Hosier

The Horticultural Communicator, published 6 times a year by Maricopa County Master Gardeners, is printed under the direction of the Maricopa County Cooperative Extension Office:
4341 E. Broadway Rd., Phoenix, AZ 85040-8807. Phone 602-470-8086, fax 602-470-8092. Hours: 8 a.m. - 5 p.m. weekdays.

Northwest Valley Satellite location:
Property Owners & Residents Association (PORA) Office,
13815 Camino del Sol Blvd., Sun City West, AZ 85375. Phone 602-546-1672. Hours: 9 a.m. - 1 p.m. Tue., Thu., and Fri.

East Valley Satellite location:
East Mesa Senior Center, 7620 E. Brown Rd., Mesa, AZ 85207. Phone 602-357-9211. Hours 9 a.m. - noon, Mon., Thu.

Urban Horticulture Staff:
Lucy K. Bradley, Extension Agent
602-470-8086 Ext. 323, bradleyl@ag.arizona.edu

Carolyn Chard, Instructional Specialist
602-470-8086 Ext. 311, cchard@ag.arizona.edu

Shanyn G. Hosier, Instructional Specialist
602-470-8086 Ext. 306, shanyng@ag.arizona.edu

Subscriptions: Available to the public. Cost is US $12 for 6 issues. Send name, mailing address and a check payable to University of Arizona. Mail to Maricopa County Cooperative Extension,
ATTN: Communicator Subscriptions, 4341 E. Broadway Rd., Phoenix, AZ 85040-8807.

Mesquite

(*Continued from page 4*) Mesquite trees hybridize very easily so it is not easy to get an accurate identification. So, a tree grown from seed may be like the parent or it may be somewhat different. The sure method to have a tree with certain qualities would be to clone the parent through tissue culture or make a cutting from the parent.

Although mesquites will grow in lawn situations, this isn't really a natural site. The watering they receive there isn't as they would get in nature so their growth will be different than in their natural habitat. They will grow faster and thus the wood won't be as strong as that of the desert dwellers.

Lenora Boner
Master Gardener, Certified Arborist

Palm Care in the Desert

Contrary to popular belief, palms are NOT a low water use plant. Palms are an oasis tree that thrive on good drainage and an ample supply of water throughout the growing season. When driving in the desert, established palms can be seen located along river and stream beds. Some varieties may require less water and other varieties require far more if fruit production is an intent. Although established palms in good health will survive prolonged droughts they must have ample water to do well, and so to have a healthy tree, do not restrict your palms from water.

Established palms should be fertilized in Feb.-Mar., May-Jun. and again in Aug.-Sep. with a high nitrogen fertilizer (10-5-5) according to label directions. Foliar application is acceptable except during periods of extreme heat, but for the home gardener, soil application is recommended. Unhealthy palms or sensitive species like the Queen Palm *(Syagrus romanzoffianum)* need micro nutrients when fertilizing. They need iron, manganese and magnesium because the soil in this desert environment has a high pH and withholds these essential nutrients from the plant. Newly planted palms, for at least the first 2 years, should be treated with a slow release, high nitrogen fertilizer, preferably with micro nutrients. For the first 2 years, use fast release fertilizers sparingly, or not at all.

Unlike many plants, palms may be easily and successfully transplanted during the summer months. This is especially true for desert adapted species such as Mexican Fan Palms, California Fan Palms, and Date Palms *(Washingfonia robusta, Washingtonia filifera, Phoenix canariensis and Phoenix dactytifera).* Container or box palms are easier to transplant because the root ball is undisturbed. For large or small bare root palms, more care must be taken to ensure a transplant success.

Lack of water, dehydration, poor drainage and sunburn to the heart of the palm are the biggest causes of death to transplants. To insure success when planting new palms, boxed or bare root, amend the soil with organic matter to improve drainage and water holding capacity. It is especially important to add sufficient organic matter to the more delicate palms like the Queen Palm. Next, keep the fronds tied tightly together at the top of the palm. This will decrease dehydration and sunburn to the heart. Leave the fronds tied until a growth response can be seen from the heart. Be patient for new growth may take anytime between 1 month to 1 year. All during this time continue to water and keep the fronds tied. Peeking is an acceptable practice. Untie the fronds when the new growth on small palms is about 6 inches and 2 feet on large palms.

Pruning of early flowering palms, such as dates, can begin in the late spring and early summer to remove fruit and flower stalks. Late flowering palms, such as Washingtonia species, should best wait until mid- to late summer in order to remove all the flower stalks in one pruning. If pruning is done too early, there may be new flower stalks appearing days or weeks later. Palms with attractive, distinctive flowers such as Mexican Blue Palms *(Brahea armata)* should be left until all flowering is over, usually midsummer.

Pruning the foliage is done in such a way that is both healthy for palms and allows for a cleaner environment for the owner. Untrimmed trees can be a nesting area for insects, birds, and snakes so care must be taken. Trimming can be done annually or semi-annually depending on your budget, or height of tree. When trimming feather palms (Queen palm and date palms) semi-annually, you are taking only a few fronds at a time leaving a “table top” effect. The foliage tips should look like it is resting on top of a table while the fronds stem ends are pointing up at a 75° to 45° angle or V-shape. If you choose to trim annually and your palm is not a fruit producer, trim at a 45° angle V-shape, taking care not to trim too much. If it is a fruit producing palm, take care not to trim the fronds back too much as the palm needs all the food source it can get to produce a delicious crop of dates. Fan Palms are more tolerant to higher trimming or the removal of more fronds. If you choose to trim one time a year, keep a 45° V-shaped cut, or use a lower cut angle if you choose to trim two times a year. Remember – do not remove more than you have to. The palm fronds are a food producer for the palm.

Continued on page 4

Mesquite Trees for Landscapes

Commonly used in landscaping in the desert south-west (and very commonly used in Phoenix area), the mesquite is a *natural* choice. There are mesquites that occur in nature in the Sonoran desert (not necessarily the Phoenix area). *Prosopis articulata* is a spiny shrub or small tree with pinkish flowers. Its native territory is Baja California Sur into Mexico just south of Arizona.

Prosopis glandulosa var. torreyana commonly called Honey mesquite is a large spiny shrub or a small tree whose flowers are small yellow-green racemes. Also called Texas mesquite it appears widely in the Sonoran and Chihuahuan deserts.

Prosopis palmeri, also known as palo fierro, is another of the spiny shrubs or small trees. It grows only in Baja California Sur between 24.3° N and 26.8° N, usually along washes, in canyons, and on playas. Climates within the range are essentially frost free, with temperatures moderated by maritime air.

Prosopis pubescens or Screwbean mesquite qualifies as a tall shrub or a medium-sized tree with creamy-yellowish flowers in dense spikes. The seed pods that develop are tightly coiled in groups of seed spirals holding many tiny seeds. Widely scattered throughout the West, they're found in the Sonoran desert region as well as parts of the Mojave and Chihuahuan deserts.

Prosopis velutina may be known as Arizona mesquite or velvet mesquite. It occurs naturally in the southern part of Arizona while they are in several sites in the northern part of the state. They also extend down into Sonora in Mexico, Guaymas, La Paz, and Baja California Sur.

Prosopis alba or Argentine mesquite is not a native to the Sonoran desert but has come to us from South America. *Prosopis alba* is fast growing, vigorous and tends to have a dense canopy. A cultivar developed from the Argentine mesquite, "Colorado," has very few thorns and is more cold tolerant than the Argentinean. This makes it an even more desirable landscape tree for a wider area.

Prosopis chilensis is another South American mesquite. Commonly known as Chilean mesquite, is also very vigorous. Where winters are mild, this tree is evergreen.
Continued on page 2

Palm Care

(Continued from page 3) While the foliage is being trimmed, it is suggested that the palm be "peeled" or "skinned". This is the process where the "boots" or "rachis", the dried cut ends attached to the palms, are peeled down to the woody portion of the palm trunk. Peeling will give a neater appearance to the palm. When skinning a mature palm, we recommend that you discontinue skinning old boots about 3 ft. from the lowest green frond leaving a 3 ft. collar between the palm's trunk and the last green frond. While skinning immature palms, leave a collar of boots; the amount will vary with the palm's age. We recommend leaving a collar of 1 ft. to 18 in. minimum. This is to keep the palm's heart from overexposure from the sun that can result in dehydration from heat, and/or sunburn. Remember the heart of the palm is where the new growth develops and emerges. Damage to this area could potentially destroy your palm. Last, at any time during the peeling process, if it is noted that there is moisture or water oozing from the boots while peeling - STOP! You have peeled too far and you are causing damage to the heart by puncturing it. This type of damage is especially noticeable on Washingtonian and fan palms where there is an hourglass effect in the trunk of the palm. This a potential weak spot on the palm that could cause the top of the palm to break under extreme weather conditions. The hourglass effect can also be a sign of other problems during the palms growth. We recommend caution and generosity to the collar when skinning.

If you trim your own palms, use clean, sharp equipment. Caution must be taken at all times as the fronds can be heavy. A healthy, well maintained palm in any landscape is worth the expense and time for its beauty, fruits and shade in the desert.

Richard Harris & Louisa Ballard
The Arboretum at Arizona State University

Those Troubling Trees

The purpose of this article is not to discourage anyone from purchasing any of the trees listed or to take a saw to the one(s) they have in their yard. The purpose is to inform you about trees that have a history of problems in either one or a variety of areas. The problem tree listed here may be viewed differently by another; others may love the tree that you dislike or not mind the problem that aggravates you. I have polled a wide variety of sources from which I will base this article. Their opinions vary also. All the sources agree that "Many tree related problems are related to *poor selection and placement*. Improper pruning, irrigation, fertilization and other maintenance can contribute to poor tree performance."

Litter problems and seasonal nuisances

Eucalyptus	Carob	Pine	Mesquite
Jacaranda	Orchid	Citrus	Mulberry
Yellow Oleander	Olive	Palms	Silk Oak

This category was based on the trees that have a large amount of leaf/needle drop, bark shedding, seed pods, flower drop, and falling fruit which can be a nuisance to clean if you are not a 'naturalist.' When located by pavement, it can be easier to sweep or clean up but other considerations about location need to be assessed. Flowering and fruiting trees are lovely to look at but can be a problem if they are located too close to pavement; the petals and fruit can be a safety hazard for slippage.

Chlorosis and Disease - It always looks .... sick!

Silk Oak	Elms	Citrus	Bottle Trees
Eucalyptus	Ornamental Pears		Queen Palms

Non-native trees in our area seem to have a constant struggle with the environment, causing them to be chlorotic. Some adjustments can be made with a proper fertilization and watering schedule, which would temporarily improve appearance, but the fact is that some species are poorly adapted for this area.

Damage-causing roots - I keep tripping over roots!

Cottonwood	Mulberry	Shamel Ash
Aleppo Pine	Silk Oak	Chinese Elm

This problem could have been avoided through proper education on correct placement. These trees have a shallow and/or aggressive root system. If they are planted too close to foundations or pavement they may cause lifting or cracking.

Allergy Problem -Trees that make you sneeze.

Olive	African Sumac	Mulberry

For the public who suffer from allergy problems, they may want to reconsider having these trees planted in a new landscape.

Maintenance - Weekend projects

Mesquite	Eucalyptus	Palms	Olives	Chinese Elm

This category is touchy, in that some may not regard this a problem. South American Mesquites "need a dumpster parked next to them," as one source put it. In urban environments, these trees are often planted where they require regular pruning, thinning, and litter clean-up.

Height and Size - It's so TALL!

Eucalyptus	Silk Oak	Palms	Aleppo Pine

These are big trees and proper placement is important. They are lovely trees if well maintained, fertilized, and watered. Having them next to your house could become an insurance problem. Another consideration is the cost to have them trimmed.

In summary, there are many considerations to make when purchasing a tree. There is the size *at maturity*, placement/location, susceptibility to disease and nutrient deficiency, environmental allergies, and maintenance considerations related to litter and debris. All trees drop leaves and blooms. A tree's overall benefit to landscaping and the environment may outweigh all of these problems. As one source said, "A big tree is worth 10 evaporative coolers!" Enjoy your trees, take care of them and they will bring you pleasure in a variety of ways.

Louisa Ballard, Master Gardener
The Arboretum at Arizona State University

Vegetable Garden Weed Control

Weed control in vegetable gardens is important so that the desirable crops can grow without interference and competition for available space, water, and soil nutrients. Another aspect to consider is the aesthetics of the garden site so that it doesn't appear to be a potential fire hazard or wild animal game refuge. Most desert soils have a bank of weed seeds from previously existing vegetation or deposited by wind, water, animals, or by physical movement of the soils. Simply adding sufficient amounts of water should generally germinate many existing weed seeds. Disturbing the ground and adding water will further encourage vegetation to flourish.

Growing vegetables in small backyard plots or larger areas up to one to two acres is a challenge against weeds similar to any commercial crop production system. There is only one most effective method or tool for effective weed control - the hoe. The versatile hoe can be used to remove existing vegetation to clear away a potential site to grow vegetables, it can scrape away small seedling weeds between crop plants, and it can be used to chop down escape weeds that have overgrown crops. The hoe is advantageous to hand-pulling weeds but it will not prevent weeds from emerging in crops. Other methods must be considered to minimize severe weed infestations in gardens.

The site selection process is the most important before beginning to till the soil to install a vegetable garden. All of the previously existing vegetation should be physically removed in hopes that the weed seeds will not be added to the soil. Also any existing green vegetation could be treated with a foliar-active herbicide. Glyphosate (Roundup®), glufosinate (Finale®), or diquat are non-selective herbicides that might be used to eliminate any unwanted vegetation. Do not contact any desirable plants or trees with these herbicides or injury may result. Diquat is very fast-acting compared to glyphosate or glufosinate which generally take 7 to 10 days to kill weeds. Any non-woody plant materials can then be spaded or rototilled into the soil to begin building organic matter content.

The weed seeds in the soil can be encouraged to germinate and emerge before final preparations to sow the vegetable seeds. After initial groundbreaking, a pre-irrigation would stimulate a flush of weeds to emerge that can be tilled or treated with a herbicide. Solarization using a plastic mulch to cover the ground and literally cooking the weed seeds or propagules and diseases in the soil during the summer months might be effective against some annual and perennial weeds. The sun can also dessicate rhizomes and tubers of perennial weeds that are tilled and exposed on the soil surface.

Most backyard vegetable gardens are seasonal and have a variety of crops that have varying degrees of tolerance to very few herbicides that might be available in retail garden shops. Soil-active herbicides registered for use in tomatoes or cabbage might be detrimental to subsequent rotational crops such as corn or spinach. No general herbicide is available to be used for broad-spectrum weed control in the previously mentioned crops when planted in a small plot area at the same time.

There may be very few selective herbicides available for vegetable gardens. Grass weeds might be controlled postemergence in some broad-leafed crops using sethoxydim (Poast®) or fluazifop (Fusilade®). In the winter, wild oats, canarygrass, wild barley, and annual bluegrass might be reduced in being competitive with many crops. In the summer, perennial johnsongrass and annuals such as watergrass or sprangletop could be controlled in most crops except sweet corn. For sweet corn being grown away from tomatoes or other sensitive broad-leafed crops, some of the 2,4-D type herbicides might be effective postemergence against some broad-leafed weeds. It is not possible to use herbicides to remove grass weeds from sweet corn or mustard weeds (London rocket and shepherd's purse) from cruciferous crops because herbicides have not yet been developed to differentiate between crops and weeds within the same family.

Weed control can be best achieved using the hoe as soon as weeds emerge. Plant and fertilize crops to encourage vigorous vegetative growth early in the season to shade and crowd out weeds between and within the rows. At planting time, use clean seed that is not contaminated with weed seeds or use transplants that are vigorous and free of weed seedlings. Cultivate to remove weeds as well as bury small emerging

Continued on page 7

Pesticide Misuse in Homes

Recently, several cases have been identified of misuse of a pesticide, methyl parathion, for home pest control, primarily roaches. Methyl parathion is a highly toxic organophosphate insecticide that is *not* registered for any home uses. Because it is so highly toxic to insects such as roaches, some individuals have been purchasing and using it to treat homes. Most homeowners that have allowed this pesticide to be used in their homes are not aware of the consequences of the misuse. It has been found to be extremely effective in killing cockroaches, and is seen as a "miracle" by those facing infestation problems. It breaks down in sunlight, but indoors can remain toxic for months or even years. It attacks the central nervous system, and children are particularly vulnerable. Although no deaths have yet been reported, a number of residents exposed to the pesticide have become ill.

The most recent incidents have been in Mississippi, Louisiana and Illinois, where it was used for roach control in a number of homes and businesses. This illegal use has caused major problems. Regulatory action has been instigated against two individuals in Mississippi, the homes and businesses where the pesticide was used and has been found to have been contaminated have been vacated and in many cases are being decontaminated. So far, the cost estimate in Mississippi has exceeded $60 million, and has impacted over 1,200 individuals.

Methyl parathion has been used for many years by agricultural producers, specifically cotton and grain producers. It is tightly regulated in the agricultural trade and has not been a problem when used by farmers, because of the many and excellent educational programs conducted through the Pesticide Applicator Program. We are not aware of reported misuse or health problems resulting from methyl parathion by agricultural producers.

Besides the serious nature of this misuse and the possible health effects to individuals that have been exposed, (to date we are not aware of any fatalities) this misuse also raises possible serious consequences to agricultural producers who must use this pesticide in a pest management system. The EPA has seriously considered cancellation of the product.

The EPA, as a result of this misuse by homeowners, or persons illegally treating homes with methyl parathion, has required the manufacturer to enter into a compliance agreement to change the formulation and to publish educational materials on misuse of this product.

John W. Impson, National Program Leader, Health, Environmental and Pesticide Safety Education
Wells Willis, National Program Leader, Extension Food & Nutrition Education Program

Vegetable Garden Weed Control

(Continued from page 6) seedlings. Irrigate when necessary and place the water only where the crop can most efficiently utilize it. Drip irrigation is more precise than sprinkling or flooding. Weeds will grow where there is adequate space and water availability. Mulches can be used to cover the ground and prevent weeds from growing. Dark plastic or grass clippings or straw can be used as mulches between rows of crops.

Biological control in small vegetable gardens is difficult because the cropping season is often very short and trying to maintain an infestation of weeds for a natural enemy insect or disease is counter to minimizing competition and interference for the crops. Prevent weeds from going to seed and prevent buildup in the soil. Also prevent perennial weeds such as johnsongrass, field bindweed, or silverleaf nightshade to proliferate and reduce the development of rhizomes and tubers.

Weed control in small plot backyard gardens is a long-term effort requiring patience and diligence. Grow vegetable gardens in an area that can be managed comfortably without being overrun by weeds or crops. Developing and providing a site that is optimal for growing vegetables will eventually reduce the severity of most weed problems.

Kai Umeda
Extension Agent, Vegetable Crops
Maricopa County Cooperative Extension

Bulletin Board

1997 Southwestern Low Desert Gardening and Landscaping Conference

"Growing Through Knowledge"
August 8 & 9, 1997
at the
Wigwam Resort

For more information, call 470-8086 Ext. 824

Dial Extension

(602)470-1556
24 hours a day, 7 days a week

University of Arizona Cooperative Extension Horticulture List Serves

Three Internet e-mail list-serves have been created to enable gardeners to obtain quick answers to questions posted online. You may join any or all of them at no charge. You will have instant access to the collective knowledge of all the subscribers!

To join a list, send a message to **Majordomo@ag.arizona.edu**.
In the body of the message type any or all of the following lines:
subscribe arid_gardener-digest
subscribe school_garden-digest
subscribe community_garden-digest
(Note: the first line is an underline, the second is a dash.)
A message with more information will be sent to you once you subscribe. Contact bradleyl@ag.arizona.edu with questions.