THINGS TO EXPECT:

LEAF DROP is due to the shortening days and cooling temperatures of fall, intensified by growth stress due to drought, overwatering, or lack of fertility.

DAMPING-OFF CAN OCCUR with bedding plants. Don’t keep beds too wet. Recommended fungicides provide fair control. Infection is most likely in repeatedly planted flower beds.

MESOPHYLL COLLAPSE is a sudden wilt and dying of citrus leaves provoked by abrupt weather changes. East and north sides of grapefruit, lemon, and orange trees are most affected.

ALEPPO PINE BLIGHT can be induced by day/night temperature extremes on tender, actively growing sections of these trees. Brown needles cling to plump, healthy branches. Sun-exposed sides are most affected. Normal revoliation occurs in the spring.

NUISANCE INSECTS Roaches, earwigs, crickets, scorpions, and spiders instinctively move indoors as winter approaches. Spray, dust, or granule formulations at night of diazinon or carbaryl applied around building foundations discourage invasions.

CITRUS FRUIT SPLITTING is due to rapid fruit expansion; hot, dry weather; and dessication of rinds causing rinds to be less pliable. Burst fruit attracts pests, so prompt removal is recommended.

WHITEFLIES may move onto the broadleaf evergreens such as ficus, citrus and ash as cooler weather approaches. (See page 3.)

CHLOROSIS AND LEAF DROP OF CITRUS AND OTHER EVERGREENS can occur. Short days, winter weather, drought, or over-watering may be responsible.

HOUSE PLANTS experience winter also. Reduce watering and fertilization accordingly and expect some yellowing and dropping of older leaves.

THINGS TO DO:

PLANT WINTER-HARDY, CONTAINED TREES, SHRUBS, AND VINES. Wait until March or April for freeze-tender plants.

OVERSEED BERMUDA GRASS LAWNS with winter grass from mid-October until mid-November.

REDUCE WATERING FREQUENCIES to minimize risk of root rots and allow dormancy to occur and harden cold-tender plants.

POSTPONE EXTENSIVE PRUNING OF TREES AND SHRUBS until late January, early February.

COMPLETE FLOWER GARDEN PLANTING during November.

PREVENT WINTER WEEDS by applying pre-emergent herbicides, DCPA or oryzalin, before seeds sprout. Don’t apply where seeds are to be planted for up to five months. (see page 6.)

TRY WILDFLOWERS this year. The pamphlet from the conference gives a nice month by month schedule. (See page 6.)

PUT BERMUDA LAWNS TO BED. Research indicates an application of potassium (muriated potash or potassium sulfate) in October or November helps lawns go into dormancy better and regenerate quicker in the Spring. Generally, we have little need for potassium on most plants, but it seems to help for the storage cycle on Bermuda. Potassium is associated with dormancy, structure and disease resistance. Try some on part of your lawn and see if it helps.

Terry H. Mikel
Extension Agent, Horticulture
FALL BULBS

Location: Fall is the time of the year when most flower bulbs used in south central Arizona are planted. In selecting a planting site, avoid areas where roots from adjacent trees or shrubs will compete. Most bulb varieties require full sun during the winter months.

Soil Preparation: Add organic matter in the form of compost, forest mulch, well-rotted and composted manure, cotton gin compost, etc. Work 3 to 4 inches of organic matter and a high phosphate fertilizer into the upper foot of soil.

Planting Bulbs: Since growing height of bulbs varies greatly, keep the smaller varieties apart and to the front of the bed. Check the Bulb Planting Guide in Q382 Publication, “Bulbs for Southern Arizona.”

Special Treatment: Tulips and hyacinths respond better in the low desert if the bulbs are stored in the vegetable crisper of the refrigerator for about 4 weeks before planting. Plant in late November; they are best treated as an annual. Anemones are good only once. Each year dig up ranunculus after the foliage has browned and replant in Fall.

Selection: Some bulbs which are good perennials here include the allium, amaryllis, canna, narcissus (daffodil), freesia, Dutch iris, bearded iris, etc. These bulbs can be left in the ground year round.

Allen Boettcher
Extension Agent, Home Horticulture

MG Educational Tour

The MG Educational Tours are continuing education opportunities available to MG’s to learn more about Agriculture in the state of Arizona. This year’s exciting tour will take place November 5th & 6th (Thursday and Friday) and will include visits to Tucson and the Willcox area. You should have recently received details in the mail about the tour. If you need more information call Carolyn Chard at 255-4456.

ALL ABOUT TREES

Living in our low desert environment does somewhat eliminate the pleasure of Fall tree color compared to northern Arizona counties. A few trees are effective even down here, with yellow being the predominate color from Arizona ash. The Chinese pistache can produce some excellent bronze and red color but genetic differences mean some do and some don’t.

Chinese tallow is a moderate size tree that has excellent color. Carolyn Chard has one and has indicated very few cultural problems in growing them. The Bradford selection of evergreen pear has beautiful fall color but must be purchased bare root. The standard evergreen pear does not have fall color.

Splitting of citrus fruit is an annual concern that starts in the late summer due to summer sunburning or just rapid growth. Pruning of dead wood inside the tree is very permissible in citrus this time of year but the top canopy of leaves should be left intact as cold weather protection through the winter. Fall planting of citrus (October through early November) works out fine as long as the homeowner realizes that frost protection with covering and/or lights is a must if winter temperatures drop into the 20’s. Lemons and limes are a high risk because they are more cold sensitive. Fall watering schedules on citrus and other landscape trees can be less frequent now, but pecan nuts are still filling so regular, high volume water applications are needed.

Fertilizer applications in the fall are recommended on non-frost tender trees, evergreen trees such as pines, eucalyptus, etc. Eucalyptus often show iron deficiency symptoms during the fall period. If iron chelate as a soil application is used to correct it, early October is about the latest that soil temperatures are high enough to expect a response. The alternatives are the trunk implant iron capsules that work well through the winter months.

December is the beginning of pruning season for the deciduous shade tree group with the usual discussion on “stubbing back” as an improper pruning practice. As a standard recommendation we would suggest thinning out and moderate heading back as the basic approach.

Lowell True
Extension Agent, Fruits & Nuts
BITS ON BUGS

Whiteflies are not true flies but are closely related to scales, mealybugs and aphids. These are all insects which belong to the insect order Homoptera. Whiteflies (WF) have sucking mouthparts and produce honeydew (a sugar/protein exudate) as a waste product from the sap of the plants on which they feed. Both the adults and nymphs (immature or larval stage) feed on plants but the heaviest feeding is done during the nymphal stage. Through their feeding habits WF can transmit plant disease agents from plant to plant.

An adult female WF can lay 200 to 400 eggs on the undersides of leaves. Newly hatched WF nymphs, resembling small mealybugs or scales, will move a short distance from the egg and at 1st molt (shedding of its skin to grow), lose their legs, and remain attached tightly to the leaf like a scale. They will form a pupal stage after three to four molts, then the pesky winged adult emerges. During summer temperatures it is estimated to take a newly laid egg from 15-30 days to grow into an adult.

There are many different species of whitefly and the four most troublesome which we find in Arizona are the greenhouse, bandedwinged, ash and sweet potato. It is the sweet potato whitefly (SPWF), Bemisia tabaci, that we see in mass in late summer/early fall. Because of its broad host range, SPWF is the most economically damaging WF. Two biotypes (same species but different behavioral and physiological characteristics) have been identified from the SPWF; the “A” biotype (sometimes called the cotton biotype) and the “B” biotype (sometimes called the poinsettia biotype). The “B” biotype was first noted in AZ in 1988 and has a greatly expanded host range when compared to the previously known “A” biotype. Researchers so far have reported about 500 plants affected by the insect. Both biotypes have been shown to extract up to five times as much phloem sap from plants than other types of whiteflies, thus causing more damage.

The incredible populations of SPWF which occur in the valley make control very difficult for the homeowner. Soapy water sprays help to desiccate and kill the nymphs which build up on leaf undersides, but new adults quickly fly in to take their place or lay more eggs. Chemical sprays also seem ineffective and they will likely kill beneficial insects as well. General predators like lacewings and spiders just cannot keep up.

Before even attempting control in the landscape you should determine if the SPWF is truly damaging your plants. Those plants which warrant possible treatment are those which show: 1)—definite build-up of nymphs on the undersides of the leaves (almost a sandpaper look) 2)—honeydew build-up on leaves causing plants to glisten or grow sooty mold fungi 3)—leaves starting to wilt, yellow, or brown (plant may also need removal at this point if it is diseased). We still recommend using 1 teaspoon to 2 tablespoons of Dawn or other dishwashing detergents to 1 gallon of water with sufficient coverage of the leaf undersides (spray every 3-4 days). You may want to consider replacing some of your more WF desirable plants (i.e. lantana or hibiscus) with less WF desirable plants (i.e. silk). Flower and vegetable gardeners may have to consider adjusting their planting habits to miss the WF season. Wait for populations to die down— which will occur once temperatures cool. Try using floating row cover placed over new seedlings to create a barrier.

Commercially, strategic cultural practices are being recommended (i.e. timing of crop planting and termination). Many biological controls are being considered such as parasites, predators, and even a WF destroying fungus. (The gnat-sized parasitic Encarsia wasp which was released and keeps ash WF in check does not seem effective on SPWF.) New formulations of insecticides and a hormonal compound which causes the insect to not grow properly (insect growth regulator) are being studied at the University. The problem is that registration of these compounds is at least a few years away. In the mean time, keep your patience, hold your breath, and hope for a cold winter.

Donna Ellsworth
Ag Program Coordinator

WHY SO MANY WHITEFLIES NOW?

• Recent winter weather patterns have been mild allowing populations to overwinter
• The “B” biotype was introduced to the U. S. without its natural parasites/predators
• Some agronomic and landscape practices allow large numbers to build up
• They quickly develop resistance to pesticides
• Feeds on a broad range of plant material.
1992 MASTER GARDENER
CONFERENCE A HUGE SUCCESS

The Second Annual Arizona Master Gardener Conference held at the Biltmore Conference Center August 20-21 attracted more than 240 enthusiastic gardeners from Arizona, Nevada, and California. Several participants who went to the National MG Convention in Portland, Oregon, pronounced ours better because it addressed more local and regional concerns. Chairpersons Carole Burchaell and Karen Tsutsumida, along with the entire staff, did a remarkable job of organizing this magnificent Gardeners’ event.

A long list of outstanding speakers covered almost all aspects of growing, disease control, and pest management. Many sessions were repeated to eliminate conflicts with other interests. The team concept wherein two or more experts covering the same subject worked well. Some sessions were so enthusiastically received that many of us returned to hear the subject repeated. An extra day was added for an extended range of tours. One of the most popular was a walk-about tour of Biltmore grounds conducted by their garden superintendent, Don Dickerman who keeps the place blooming with 24 gardeners and a quarter of a million annual plants each year.

We learned about the birds, bees, and bats, irrigation, wildflowers, succulents, landscaping, plant diseases, vegetables and fruits, pest management, herbs, international agreement on what constitutes real organics, desert edibles, and many more. Doctors Dave Langston and Peter Ellsworth managed to keep us intrigued with insects.

Tasty continental breakfasts began our busy days. Sumptuous lunches were served so efficiently that no sessions were delayed. There were some good-natured complaints about the minor inconvenience of “frigid” meeting rooms. Next year bring a sweater! Terry Mikel, who did the introductions in the Flagstaff Room, wrapped it up there with a Conference Summary two days later. A reception in the Aztec Lounge provided a chance for speakers and attendees to unwind and discuss conference highlights. Many participants took advantage of the Biltmore’s bargain rates and stayed over to savor the atmosphere and service of Arizona’s oldest and best-known resort. At dinner we learned our soup had a splash of gold. The waiter assured us that it was 24 carrot gold and completely ingestible. The entire conference was a golden experience.

John J. Ward
Master Gardener

What do you think?

Any suggestions or comments about this year’s conference are welcome. Suggestions for topics for the 1993 conference are also needed. Mail to MG Conference, 4341 East Broadway Rd., Phoenix, AZ 85040.

MG SATELLITE OFFICE

This summer our headquarters located in the P.O.R.A. building (Property Owners and Residents Association) have been renovated and expanded. We are now operating in a very pleasant environment enabling us to serve our clients better.

We are, however, currently are furnished with old desks and file cabinets which are not in keeping with the pleasant ambiance of the newly remodeled office. Any suggestions as to how we can scrounge some decent furniture would be appreciated.

The last class to graduate from the Sun City West course has provided us with some excellent and dedicated Master Gardeners.

We also have instituted office procedure training under the tutelage of Dorothy Schrag which assures us that new Associate Master Gardeners slide right into the office routine with a minimum of apprehension. Charlie McGarvie has done an outstanding job in office management and time scheduling.

John Kent
Master Gardener

The most noteworthy thing about gardeners is that they are always optimistic, always enterprising, and never satisfied. They always look forward to doing better than they have ever done before.

VITASACKVILLE-WEST (1892-1962)
FROST PROTECTION
CONSIDERATIONS

As our days continue to shorten and temperatures begin to drop, we need to look ahead to those cold nights when frost may occur. Some areas in the Valley are referred to as the "colder Valley regions" and can be considerably below the official temperatures at Sky Harbor Airport. Last winter was extremely mild, with only a few cold nights near the end of November, but a typical winter could have several nights in the twenties; and cold snaps can occur as late as mid-March.

Early freezes can cause serious damage to citrus and frost-tender shrubs and vines. Late freezes can cause damage to citrus blossoms, vegetable plants, and again, frost-tender shrubs and vines. No one method of frost protection will provide optimum protection for all types of plants, so the following is a brief description of the options available.

WALLO' WATER is a ring of water-filled tubes that surround individual small plants and can provide protection when temperatures are as low as 16 degrees Fahrenheit. These are ideal for early planting of vegetable transplants and eliminates any concern about loss to frost damage.

N-SULATE is a white frost blanket material made of spunbonded polypropylene fabric that can protect plants when temperatures dip to 26-27 degrees. N-SULATE is ideal for covering shrubs, vines, and flower beds and can be left on for several days at a time since light, air, and water will penetrate the material. Even heavy rains won't weigh down the fabric.

FROSTGARD is a liquid spray that is relatively new on the market. This spray kills the bacteria on foliage (which are initiation sites for frost) and also is absorbed into the leaf and claims to produce a resistance to damage by temperatures below 32 degrees. It can be used to spray large shrubs, vines, and trees (including citrus and fruit trees) to provide some frost protection. Since our last winter was very mild, it wasn't possible to test its lowest temperature protection, but it's believed to be approximately 28 degrees. If a freeze is expected when fruit trees are budded or after the blooms have dropped, a few degrees of protection can be vital. Spraying would be needed every two weeks as long as the danger of frost is present.

STRESS RELIEF 35 is a liquid spray that leaves a permeable membrane on the foliage of plants and produces a protective barrier to frost. One major advantage is that the permeable membrane (which eventually breaks down due to exposure to the sun) will remain effective for 90 days during the winter. In the Spring, it has extremely good elasticity and will stretch up to 900 percent as new foliage begins to grow. STRESS RELIEF 35 is effective for 45 days in the Spring. One possible drawback is it could prevent pollination of flowers of fruit and citrus trees by bees. It appears effective as low as 28 degrees.

As you can see, there are several options for frost protection and selection will depend upon the vegetation you're trying to protect. You may even choose to use two at the same time, such as a liquid spray and the N-SULATE fabric. With the products available today, you should be able to carry your plants through the coldest weather in the Valley this Winter.

Mark Miller
Master Gardener

Editor's Note: Mark Miller is co-owner of G & M Agricultural Supply Co., a distributor of Ag Products. Call local nurseries for availability of particular products. If you are unable to locate an item, contact Mark at 947-0096. See Bulletin Q77 "Frost and Frost Protection" for more information.

Master Gardeners Bev and Vaughn Autrey, Jack Blake, Lenora Boner, Roy Stewart and Don Nordlund joined Scottsdale Saguaro High School teacher John Calvin and students from his Lincoln Memorial Museum National Youth Committee Leadership Center class recently to plant donated items at the New Day Center. The project shows that working with students can make difference!
WILDFLOWER FRENZY

Fall has arrived and with it many Master Gardeners may contract what I call “wildflower fever”. It begins with dreams of surrounding our homes with spring carpets of gold poppies, cobalt bluebells, spires of pink penstemon, purple lupine and mounds of lilac verbena, amongst other beauties. Not resisting the urge to collect and study wildflower catalogs we search for species which are native to the Southwest and are best suited to our particular elevation. We eye sunny areas of our landscape that could be magically transformed with a little effort on our part.

Master Gardeners appreciate the toughness of wildflowers over traditional bedding plants as they are well adapted to our soils and climate, resist disease and pests and get along with much less care. Once established, they need hardly any water if the winter rains are timely, as a rule they dislike fertilizer and leave you with more seed for next year once they are spent! Wildflowers really give you a “big bang for the buck” as an average mix costs $40.00 and covers 2,000 square feet; most of us need much less seed thus, less expensive.

Most wildflowers are ephemerals (short-lived) and can be sown from seed (around mid-October for Phoenix and Tucson.) Some, such as bluedicks form bulbs underground and take longer to establish. Penstemons are generally perennials and take more than one season to flower, although *P. parryi* blooms the first year. Fortunately, many nurseries carry a great selection in the spring grown in one gallon containers. Look for *P. superbus* (giant coral), *P. eatoni* & *P. barbatus* (red), *P. pseudoparryi* and *P. wrightii* (magenta) and purple varieties (*P. strictus* and *P. grandiflorus*).

Here are some of my favorites which can give you three seasons of color from seed. Spring: Mexican gold poppy, bluebells, mallows, yellow blanket, lupines, desert five spot, desert coreopsis, chia, owl’s clover and desert verbena. Summer: firewheel, Mexican hat, chocolate flower, Mexican sunflower, blue flax, wild sunflower, and desert senna. Fall: purple aster, golden eye, chinchehead, gayfeather, desert marigold and dyssodia. (Desert marigold gives Spring blooms also.)

Try coral bells, betony, columbine and cardinal flower in a shady, moist spot such as where your air conditioner drains. Purple rocket and blackfoot daisy are worth a try but the beautiful Indian paintbrush is difficult. (Try sowing them with native grasses.) Lupines need to be placed into boiling water and soaked overnight to soften their hard seed coating.

You can rake your seed into gravel or even over-seed a scalped Bermuda lawn which has been aerated. Read the “Desert Wildflowers” brochure published by the Arizona Native Plant Society. Call Rita Jo Anthony at *Wild Seed, Inc.* and leave a message for a free catalog. *Plants of the Southwest*, 1812 Second St., Santa Fe, NM 87501 and J. L. Hudson, *Seedsmen*, P.O. Box 1058, Redwood City, CA 94064, offer catalogs for $1.00 each.

There are many beautiful native species which are worthy of our attention besides the familiar California poppy and African daisy. Get the “fever” and mix the seed blend of your dreams for a personalized spring display!

Carrie Nimmer, Master Gardener
Landscape Designer

PRE-EMERGENT HERBICIDES

The use of pre-emergent herbicides is common because they are relatively safe for non-target plants, and animals, and, if used correctly, they work.

Using them correctly includes: 1. Reading all instructions before use; 2. Applying before seeds sprout or seedlings emerge (get the name? pre-emergent); 3. Applying uniformly over the whole area to set up the barrier affect; and 4. Watering within some number of days (varies by product; see #1) to get it into the soil. Water initiates seed sprouting which is necessary for the chemical to work.

Refer to Q349, “Care and Weeding of Desert Landscapes,” in your MG notebook. Also, add oryzalin and isoxaben to the Q349 bulletin along with DCPA and simazine as effective pre-emergent compounds.
MEET ARLELEHA TURNER

You’re sitting there reading these words...have you ever stopped to wonder how they got there? Sandwiched in between the writing, editing, layout, folding, stamping and mailing lies one very important component...Printing!!! The Maricopa County Master Gardener program (and the whole Extension office for that matter) is lucky to have Arletha Turner at the controls of the 9840 Offset Printing Press. The quality of her work stands out not only in clean, even copies but also in her creativity and willingness to share her ideas on how to make a project look better.

As a young mother, Arletha has all the frustrations (and joys) of raising three small children: Andrea, six, Vanessa, four, and Robbie, two. When not at work mixing inks and paper, she likes to read to her kids, take them fishing and camping, and teach them about the outdoors. Because Arletha likes to garden, recently she and Master Gardener Nate Holesome planted and harvested sweet corn and other vegetables at the office demonstration garden.

Since Arletha began working at the Cooperative Extension office she has worked on two different presses and received certification from the A. B. Dick Company. Her work load has expanded to cover special jobs for the entire state Extension system.

If you’re in the office and want to stop and say “Hi”, Arletha’s press operation is down the wing toward the Home Economics Department. Just follow the press sounds.

Thanks, Arletha, for all your hard work making our projects look so good!

Joanne Littlefield, Master Gardener
Public Information

No two gardens are the same. No two days are the same in one garden. Hugh Johnson (1939)

UPDATES

The MG Updates are continuing education programs offered once each month to Master Gardeners. Update topics are decided by a committee of MG’s and extension staff. The updates include seasonal and new information and question/answer sessions. New volunteer opportunities are discussed. Updates are scheduled to take place on the last Wednesday of each month, from 9 a.m. to Noon, and are located at the Maricopa County Extension office unless otherwise noted. Holidays or other scheduled events may change the timing occasionally, but you will receive ample notification when necessary.

Due to the upcoming holidays, the November update will take place on Wednesday, November 18th, and the December update will take place on Wednesday, December 16th. See calendar on back page. If you have an interest in joining the Update committee or have a suggestion for a topic, call Carolyn Chard.

VOLUNTEER OPPORTUNITIES


February & March, 1993: Master Gardeners are needed for many garden talks.

If you are interested in any of the above opportunities, please contact Joanne Littlefield at 255-4455, press 8327.

UPCOMING EVENTS

Mother Nature’s Christmas Ranch, Baseline Road West of Gilbert Rd will begin school tours on November 1. Call 234-1999 to make reservations. Tours last one hour and includes irrigation, seeds, tree planting, wildlife and tree identification. Tree cutting and digging begin the day after Thanksgiving.

Master Gardeners logged 570 calls on the phones during the month of September.