Cool Season Vegetables (Continued from page 7) garden space as the slower growing vegetables like carrots and onions. Giant white Japanese radishes like Diakon will grow up to 6-in. within a few months and to over more than 1-ft. long by midwinter. Carrots are also well adapted and can be sown from fall through spring. Germination is slow (up to 3 weeks) and uneven during the cooler winter months so thick sowing is advisable with later thinning as needed. Plastic coverings may be needed to encourage germination. Long rooted varieties like Emperor need loose soil tilled to a depth of 12-in. or more.

Turnips are grown for both greens and roots. Purple Top White Globe is one of the more popular varieties but some of the globular white varieties are more flavorful. Cooking brings out the strong turnip flavor so they are best consumed raw and will also be more bland if watered adequately to avoid stress from insufficient moisture. Turnips are grown by direct seeding from early fall through January. Rutabagas (Swedish turnips), are a strong-flavored kind of turnip with large pale yellow roots which are usually sown in October and November. Rutabaga plants seem to be very attractive to aphids which are a serious spring pest beginning in late January. Beets are very closely related to Swiss chard but are not as well adapted and more difficult to grow.

Parsnips have a strong carrot-like flavor, require deep loose soil and are relatively slow growing (up to 6 months from seed). There is a good chance of reaching maturity if sown before October 1. If garden space is limited it may be advisable to skip the parsnips in favor of a more useful vegetable. Salsify roots resemble parsnips but have an oyster-like flavor. This interesting root can be prepared many different ways and is worth trying. Culture is similar to parsnips.

Cabbage Types: Broccoli, Brussels Sprouts, Cabbage, Cauliflower, Endive, Kale, Kohlrabi Cabbage type crops are usually transplanted after October but can also be grown by either transplanting or direct seeding as early as September. Broccoli, depending on the variety, is pretty prolific in producing side shoots long after the main head has been harvested. Pests, particularly aphids, can be difficult to control on Brussels sprouts after entering the small cabbage-like sprouts. Cauliflower is considered to be marginally adapted but it has always been pretty successful for me. Purple kohlrabi seems to perform better than white. Endive and kale are hardy, attractive plants. There is more of a pest problem with most cole varieties than with other plants, probably because of increased susceptibility due to the long time needed for maturity.

Bulb Types: Onions, Garlic, Leeks

Our growing period for onions occurs during the short day season between the autumnal and vernal equinoxes when daylight is less than 12 hours. Onions developed for short days are appropriate for our climate. Sweet long-day onions like the popular Walla Walla require more that 12 hours of daylight and are not adapted. Short-day, Grano/Granex types are very well adapted. Onions planted from sets seem to be less likely to bulb than transplants. Onions grown by direct seeding seem to bulb best, possibly because direct-seeded onions will tend to seek the optimum depth. Early October is the best time for optimum germination with direct seeding. Thinnings can be used as green onions. Along about April when the heads start to bloom, irrigation should be reduced. “Kneeling over” at this time will help to speed bulb growth but, contrary to popular lore, my experiments have not demonstrated increased bulb size.

Green onions can be grown from seeds or from sets available at garden centers. Multiplier onions and top onions like Egyptian or walking onions are also used as green onions and are interesting to grow.

Virtually all of the garlic varieties are pretty well adapted to our climate. The bland supermarket purchases can be planted and grown successfully. But garlic aficionados prefer the more distinctive flavors of varieties available only by mail order from specialty growers or at farmers’ markets. After the initial purchases, it’s a simple matter to keep some of the better cloves as next fall’s “seeds.” With some of the hard-neck top garlic, it’s possible to grow garlic bulbs from the top bulblets but it is usually planted from cloves. Garlic is best when planted in October and requires up to 7 months to mature. Shallots are cultured and grown like garlic but are milder flavored.

Continued on page 10.
Poppies

The poppy family is diverse and very large. The genus *Papaver* is the largest in the poppy family and contains some 70 species. The 4 poppies which grow easily in the Phoenix area act as annuals. When poppy stems are cut, they ooze a liquid. To keep the poppies fresh as long as possible, you should seal the stems in hot water or burn the ends of the cut stems and then place in warm water. Most poppy blooms will last about a week as cut flowers. The poppy buds hang in an upside-down U-shape towards the ground. When the buds are ready to open, the stems straighten up.

Poppies like full sun. Plant them where you want them to grow as they don’t like being transplanted. Plant the seed of the following poppies in the fall. You may not ever have to sow the seed again, as most of them self-sow easily. They may be planted in mid-September, depending on what the maximum temperature is. Check the seed package to see what range of temperatures produce good germination. You may even be able to sow a second crop of seeds about 6 weeks after the first sowing to get a longer season.

Don’t spread the seed too thickly as this results in overcrowding. This in turn leads to inferior plants and a shorter flowering season. To spread them more evenly, mix the seeds with twice their volume of sand, then spread both seed and sand at the same time. Barely cover the seeds with about ¼-in. of soil. I always cover my seeds with mulch. Keep them moist until the seeds have sprouted. This may mean watering them twice a day, both morning and night — it will depend on what the temperature is. Thin out the seedlings, leaving about 10-to 12-in. between the taller flowers and 6- to 8-in. between the shorter plants. Extend the flowering season by keeping the dead blooms picked off.

**Iceland Poppies** (*Papaver nudicaule*). This poppy comes in a variety of colors, including orange, yellow, red, salmon and white. Some of the flowers are semi-doubles, bicolors or picotees. Some people consider the Iceland Poppy flowers to be rather gaudy. The plants are usually between 10- to 20-in. in height and can be grown towards the front of the border. They are good companions for pansies and violas. The variety “Oregon Rainbows” is sweetly fragrant. The Iceland Poppy is one of the best poppies for cutting. Pick the buds early in the morning, just before the blossom unfolds. They flower over a long period of time. Water them at the base of the plants as they don’t like overhead watering; it causes the flowers to droop. If you have a plant or two that has flowers that form but don’t seem to open, pull up the complete plant as it will never flower properly. To help the blooms last longer, cut the faded blooms near the bases of the plants and cut the stems as soon as the petals start falling.

**Shirley Poppy** (*P. rhoeas*). Also called the corn poppy and Flanders’ poppy, this poppy has been grown for many centuries. The true Shirley poppy has single flowers. Once you start growing these, you will find there are many variations. Flowers may be red, orange, pink, or white. Some flowers may be edged in white or a darker color, some may be double or semi-double, others may have petals that are ruffled or crinkled. To keep a wide variety growing in your yard, pull up the plain red poppies the moment they bloom. I have been growing these poppies in a small area in front of my roses for 10 or 15 years. I never water them — they get by on whatever rain we receive each year. They aren’t as tall as the poppies that receive irrigation, but they reseed each year and have the same variety of colors. The Shirley poppy makes a striking filler for gaps in your borders.

**Opium Poppy** (*P. somniferum*). I have read that this poppy was illegal to grow, but you could have a few seeds (now what kind of sense does that make). In the Spring 1998 issue of “The Curious Gardener,” it says “Opium poppy is also known as white or garden poppy. Although not widely grown, opium poppy is legal to grow as a garden flower in small quantities. There are peony- or carnation-flowered forms available.” The flowers are large (sometimes up to 5-in. wide) and they come in white, pink, purple, and crimson. My experience has been that they only bloom for a couple of weeks. The flowers are very showy and frilly - the seed heads are big, elegant urn-shaped. It is the oldest species in cultivation — poppy capsules have been found on the sites of prehistoric dwellings. The foliage is silver-grey to bluish-grey. You might try growing it with (Continued on page 10.)
Nature’s Gardening Calendars

As a Master Gardener I usually give one or two talks a month to garden groups, schools and the like. One of the common questions will always be “when do you plant?”

Better to plant on March 1. Ever since I was a ‘little sprout’ I can remember people saying “be ready to plant on March 1st.” I guess the rationale is that any time during February would be too cold even if it was done on February 28. Still yet another gardener told me if you don’t lose some of your plants at the beginning of the season and some at the end you really haven’t done all you can. After all, it’s only seeds, right?

After some research into Native American agriculture here in the Southwest, I discovered that the Papago actually looked for signs in nature to plant their crops, as did the Pimas. A principle crop here 300 years ago was cotton. I inquired of an Agriculture Agent at the Extension office as to the best time to plant cotton. He said I should wait until the ground temperature is at 55°F or above at 8:00 a.m. In Pima and Papago agriculture they would wait until the native mesquite would leaf out to plant. They felt the earth knew best, and that it would not let a tree leaf out only to kill it back in a week or so. Other spring crops were also planted at that time.

The second season or sign in nature was the saguaro harvest, which was usually the last of June to the 1st part of July. Into the ground again went corn, beans and squash. While the Pimas would plant their gourds in the early season, the Papagos were the only tribe that would wait until the saguaro harvest. This also coincides with the monsoon rains. Since the Papago were a semi-nomadic group they grew no crops in the winter months.

Frank Martin
Master Gardener

Cool Season Vegetables (Continued from page 8).

Elephant garlic is mild in flavor and is more closely related to leeks than to garlic. The bulbs must be dug no later than June so planting must occur in September for the 9 months growing period required to get the huge cloves. If planted in October or November as recommended by most available literature, the result will be smaller bulbs but the crop can still be successful. Elephant Garlic planted from the bulbils that grow on the roots of the cloved bulbs will develop into single onion-like bulbs the first year. When planted from the onion-like bulb or from cloves it will grow into bulbs with cloves the first year.

Leeks should be planted and grown in trenches, then blanched by filling in the trenches as the plants develop. Blanching by mounding dirt around the plant as recommended in most of the literature is inappropriate for our climate because of the risk of excessive salt accumulation at the stalk.

Olin Miller
Master Gardener
Excerpted from “Vegetables for the Low Deserts of the Southwest” May/June 1997 Gardener magazine.

Poppies (Continued from page 9), other plants with grey foliage. It also has a pleasing fragrance.

California Poppy (Eschscholzia californica) This is the state flower of California, but when we have lots of rain, our hillsides are covered with this golden-orange poppy. This flower looks good planted with purple lupine and blue dicks (both wildflowers). There are new hybrids which include different colors and forms, bicolors, and wavy-edged varieties with the texture of silk. You will have to buy seeds of these new varieties each year — if you don’t, the second year you will have all golden-orange flowers again. Make sure to keep the soil moist after planting the seed, as they are particularly demanding of moisture in the earliest stage of their lives. They will tolerate fairly dry conditions after that. They will bloom for a long time until the heat kills off the plants. They have fern foliage and a cap-like calyx that pops off when the flower is ready to open. I didn’t know this, but they close their flowers on cloudy days and at night.

Val Carsey
Master Gardener

*“Spring is Popping Up All...Poppies!” by Kathy Bovee Spring 1998 “The Curious Gardener” published by the University of California and the Master Gardeners of Placer and Nevada Counties.
Book Review

Full Life in a Small Place, by Janice Emily Bowers, published by the University of Arizona Press, 1993.

A friend of mine, a poet, always reads the opening sentence of a book before she buys it or pays it any serious mind. If that first sentence fails to ignite her imagination, engage her curiosity or grab her attention, she takes a pass on the book. Janice Bowers’ “A Full Life in a Small Place (and other essays from a desert garden)” begins with this line, “A garden, like a life, is composed of moments.” The truth and beauty of the entire book are fully encapsulated in that one line.

Bowers is a professional botanist who began her gardening efforts much later in her career, often explaining to those who would ask for plant advice that she was “not that kind of a botanist.” I am eternally grateful that she finally turned her hand to the soil in her backyard for she writes with the mind and eye of a scientist and with the heart and soul of a gardener. “From the beginning, I expected to watch biological principles at work in my garden. What I didn’t expect was that my garden would teach human knowledge at every possible point.” A Tucson resident, she writes of efforts to garden with a minimum of expensive water since “at 2 cents a foot, water is generally the most expensive component of our gardens.” She weaves ethnobotanical stories into her essays, ruminating on the gardening ways of the Tohono O’odham, the Hopi, the Mundurucu of Brazil, the Algonquin, and the Navajo.

Her prose is at once humorous, informative, romantic, reminiscent and straightforward. Contrast the desert in May with the city garden; Bowers writes, “Out there, pads of prickly pear shrivel from heat and drought. Joints of staghorn cholla turn maroon, a response to heat... Meanwhile, a few miles away in the well-watered paradise of the city garden...melon vines gallop across paths and passages, so exuberant you can almost hear them shout.” In the essay, “Transformations,” she muses evocatively about the metamorphosis of moths and butterflies, passing on everything you need to know biologically about this process, and including along the way her childhood memories and a sense of wonder at this most magical and spiritual of processes. Would that more scientists could or would write this lucidly about the mysteries of life. Bowers muses philosophically about our human fascination and ignorance of the process “So appealing is transformation — this vision of new form and new life — that we build it into our dearest beliefs. Reincarnation myths suggest that again and again we are reborn to new lives, new selves, new problems, each bringing us one step closer to eventual release from the chain of transformation.” And isn’t that what gardening is all about? The transformation of a tiny seed into a profusion of flowers or peas, the metamorphosing of yard and kitchen waste into nutrient rich compost? Closing the circle from birth through life to death and recycling it all over again? Works for me.

Speaking of compost, here’s the elemental truth for Bowers: “Since compost is like confidence — you can never have too much — I’m always plotting ways to increase my pile...No plant in my garden is safe. At the first signs of weakness, I start to eye it covetously. The gardener in me, solicitous for its ultimate health and productivity, struggles against the composter, whose fingers itch to yank it out.” I often amaze myself at what I attempt to grow in my backyard garden, often at the wrong time, in the wrong place, forgiving all the effort expended when I gleefully rip it out and toss it on the compost pile.

I especially recommend the essays included in the section titled, “The Green Heart of the Garden.” Here Bowers ruminates on seed saving in “Acts of Faith,” the joys of tomato season in “Homegrown” and her own philosophy of putting in “The Use of Gardens.” The final essay ends with an anecdote about Japanese gardens and the great Japanese tea master Rikyu. Seems he had at last completed his garden and invited guests to see it. His visitors were surprised to discover that rather than a view of the nearby ocean and coastline, the view was blocked by a stand of evergreens. As each man bent to rinse his hands in a stone basin, “he saw the ocean through a gap in the shrubbery. Unexpectedly, he understood the connection between the water cupped in his hands and the shimmering sea beyond. He realized, too, that his hunched-over position symbolized his own position in the universe, stooped and therefore humble.” Bowers concludes that, “in the end, (this) is the use of every garden, great or small — to bring its inhabitants into proper relation with the infinite.”

“A Full Life in a Small Place” is a treasure that you will revisit frequently as the seasons change here in the desert. Janice Bowers’ voice and vision resonate with other desert naturalists like Gary Paul Nabhan, Charles Bowden, Ann Zwinger and Joseph Wood Krutch.

Diann Peart, Ph.D.
Master Gardener & Director of The Farm Institute at South Mountain
Meet the Natives
Arizona Wildflowers Part I

A big topic! It has been estimated that 75% of the world’s desert flora are annuals. Arizona flora is no exception, with hundreds of annual and perennial wildflowers that are widely spread from the high mountains to low deserts of Arizona, flowering in every season of the year, and new Arizona wildflowers are documented every year. If our native trees and shrubs define our Arizona landscapes, then wildflowers would be considered the icing on the landscape cake, so to speak. However, if your landscape is in transition, wildflowers can provide lots of cover and soil stabilization for a modest investment.

Arizona gardens can be rich mixes of trees, shrubs, groundcovers, vines, grasses, cacti/succulents and wildflowers. Gardens with little else but wildflowers can look fairly weedy at times — Arizona gardens need the trees and shrubs to give them foundation. The spontaneous and serendipitous nature of wildflowers in the landscape is one of their main attractions. Granted, you can plan on specific color combinations such as the gray foliage and yellow flowers of Baileya multiradiata, Desert Marigold in contrast to Penstemon eatonii, Firecracker Penstemon with green foliage and red flowers, but sometimes the unplanned and spontaneous combinations with other wildflowers, trees, shrubs, groundcovers, vines, grasses, cacti and succulents go far beyond your planned landscape dreams. Arizona wildflowers are grown in one of two ways:

1. Perennial fall planting from containers for wildflowers such as penstemon and globe mallow. Perennials require good drainage, and appreciate cool fall and winter temperatures and moisture for establishment in locations with plenty of winter sun for spring flower displays.

2. Annual fall planting from seed for all spring and summer flowering annual wildflowers such as Mexican Gold Poppy and Indian Blanket. Obtain your wildflower seed from local seed dealers, botanic gardens, catalogues, gardens or wild sources. Limited collection of wildflower seed for private garden use is not regulated by the Arizona Native Plant Law. When in doubt, talk to the Arizona Department of Agriculture, Native Plant Division. Formulate your seed mix with desired species. Obtain two empty buckets, fill one with mulch or sand and colored aquarium gravel. Disperse seed into the mulch-gravel mix and pour back in forth between the two buckets for good seed mixing.

Pick a garden location with a fair amount of winter sun and till and turn over the wildflower beds. A fair amount of winter sun is required for germination and growth. Pick a fairly calm day in mid-October to early November. Take hand-fulls of the seed mix (the aquarium gravel gives you a guide for even distribution of the mix in the beds). Lightly rake in the seed mix. Cover with bird netting to keep hungry birds from devouring your wildflower seedlings. Keep the seed beds fairly damp until germination. Check daily and water if dry. Many seedlings are lost at this stage due to drought and early frosts.

Check for weeds and winter grasses. Try to weed but make sure you know what you’re weeding, since you could be pulling up your spring and summer wildflowers. The winter rains usually start in November. If not, keep your wildflowers well watered. Nights are cool but warm days can desiccate young wildflower seedlings.

The spring wildflower show peaks in March, followed up by the summer wildflower show in July and August. Let your spring wildflowers, seed out and remove or cut back in late spring to make way for summer wildflowers and let them seed out and remove to make way for spring wildflowers.

We know so little about the horticulture of wildflowers in regard to germination and growth requirements. Arizona botanic gardens and the National Wildflower Research Center at Austin, Texas are conducting research on these topics and promoting the use of native wildflowers. Some authors refer to ‘wildflowers’ as desert trees, shrubs, groundcovers, vines, grasses, cacti and succulents, annuals and perennials. For the purpose of this series of articles on Arizona native plants for landscape use in the Phoenix area, I have chosen to split the ‘wildflowers’ into some logical landscape categories. Arizona trees, shrubs and grasses have been previously discussed. Perennial groundcovers such as verbena, blackfoot daisy and evening primrose will be discussed in a future articles as will Arizona native vines, cacti and succulents. So, the ‘wildflower’ selection for this article becomes the common and a few uncommon Arizona annuals and the not-too-woody perennials that have not been included in the article on Arizona shrubs. As I have mentioned previously, knowing your Arizona wildflowers in regard to elevation and life zone is important. Arizona wildflowers that thrive in Flagstaff gardens might cook in the summer in a Phoenix garden and vice versa in the spring. Know your wildflowers!

Some Arizona residents mistakenly think that African Daisy and California Poppy are Arizona natives. There is great need for research and public education, so that our Arizona wildflower gardens become celebrations of the wild Arizona flora that surrounds our urban landscapes. The following is a selection of Arizona wildflowers that work in the Phoenix area with our cold winters and hot summers. Carefully selected, you can have Arizona wildflowers in blooms every day of the year.

Abronia villosa — Sand Verbena is low desert spring annual that bears masses of umbrella-like clusters of bright pink to lavender flowers. A villosa is commonly seen throughout western, southern and central Arizona from 1,500-ft. or lower. Sand Verbena typically grows to 6 ft. in diameter and germination is enhanced by removing seeds from its papery fruits. Some growers germinate Sand Verbena in liners which take about 3 weeks to germinate for fall planting.
Meet the Natives (Continued from page 12).

Abutilon palmeri — Superstition Mallow is a spring-blooming, herbaceous perennial with striking orange - yellow flowers. *A. palmeri* is seen in the Superstition Mountains, Santa Catalina Mountains to the Growler Mountains in Pima County from 1,000- to 3,000-ft. Superstition Mallow occasionally likes to be cut to ground for new, clean flowering growth.

Allionia incarnata — Trailing Four O’Clock is ground-covering wildflower with distinctive 1-in. rose-purple flowers. Trailing Four O’Clock occurs throughout Arizona from 6,000-ft. or lower and ranges into Colorado, Utah and southern Mexico. The “flower” of *A. incarnata* is actually comprised of three single flowers grouped closely together. Trailing Four O’Clock is a spring-blooming perennial that dies down in the winter.

Aquilegia chrysanthela — Golden Columbine is commonly seen around seeps and springs throughout Arizona from 3,000- to 11,000-ft. and ranges into southern Colorado, New Mexico and Mexico. Golden Columbine flowers from April through September and is a burst of yellow in the summer garden with its exceptional canary yellow, long-spurred flowers that attract hummingbirds. *A. chrysanthela* works well in the shade with the contrasting flowers of *Stachys coccinea*. Red Mint and is a good mini-ossia plant around water features. Cut back spent foliage and flowers in fall and plant Golden Columbine from containers in the fall or early spring.

Argemone pleiacantha (platyceara) — Prickly Poppy somewhat resembles the Iceland Poppy in growth but its bluish-green prickly stems and glistening white flowers characterize this Arizona native. Some botanists refer to this poppy as Cowboy’s Fried Eggs in reference to the egg-white petals and yoke-yellow stamens. *A. pleiacantha* is commonly seen throughout the Sonoran Desert. This highly toxic annual poppy is planted in the fall from seed for spring flowers.

Aster (Machaeranthera) bigelovii — Purple Aster flowers profusely during the spring to late autumn with a dazzling display of bluish-purple flowers. *A. bigelovii* is considered an annual or short-lived garden perennial growing to 3-ft. in height. Purple Aster is found throughout the inter-mountain west ranging throughout Arizona from 3,000- to 7,000-ft. and into Colorado and New Mexico. This aster can become very woody and unattractive in late summer in the garden, so cut to ground level to rejuvenate the foliage. *A. bigelovii* is primarily grown from seed sown in the fall.

Bahia absinthifolia — Bahia is a low-growing, silver-leaved, yellow-flowered perennial growing throughout Arizona from 2,500- to 5,500-ft., ranging into southern Texas and central Mexico. *B. absinthifolia* grows to about 1-ft. in height and diameter and works well in shallow calciche soil. Bahia could also work as a groundcover and its seed is sown in the fall.

Baileya multiradiata — Desert Marigold is the workhorse of our desert wildflowers and flowers nearly year-round even during the hottest summers. *B. multiradiata* is widespread across Arizona up to 5,000-ft. and wide ranging across the Southwest. Desert Marigold with grey foliage and bright yellow flowers typically grows to 1-ft. in height and diameter. *B. multiradiata* is typically grown from seed sown in the fall and container plants are occasionally offered for sale which seem very touchy and prone to rot. Desert Marigold seeds sometime lay around in soil for years until the germination inhibitors are washed off the seed coat. Once you have this Arizona native in your garden, you will have it forever. The mother plants usually die off in a couple of years and older plants appreciate being cut back to fresh new rosettes. The grey foliage and yellow flowers of Desert Marigold contrasts well with the green foliage and red flowers of *Penstemon eatonii* and the blue flowers of *Phacelia campanularia*, California Bluebell.

Berlandiera lyrata — Chocolate Flower or Green Eyes is a low-growing perennial with yellow-brown daisy-like flowers and light green foliage. The brown disk flowers have characteristic warm milk chocolate fragrance. *B. lyrata* is wide ranging throughout the southeast Arizona from 4,000- to 5,000-ft. and across Texas, northern Mexico and into the Midwest. Chocolate Flower blooms throughout the summer into fall with masses of chocolate-scented flowers and dies down in the winter when it can be cut back to fresh new rosettes. The common name Green Eyes is in reference to the green bracts of the spent flower heads. *B. lyrata* would contrast well with the bright red flowers of *Zauschneria californica* and *Jasminum candidum*.

Castilleja chromosa — Indian Paintbrush is a brilliant red spring annual. Indian Paint Brush is commonly seen throughout Arizona from 2,000- to 8,000-ft. and ranges into Colorado, British Columbia, New Mexico and southern California. *C. chromosa* is supposedly difficult to germinate and some botanists consider it a root parasite.

Camissonia brevipes — Yellow Cups is low-growing spring annual of the evening primrose family with brilliant yellow flowers. *C. brevipes* is commonly seen in western Arizona below 4,500-ft. and ranges into Nevada and southern California.

Kent Newland
Former President, Arizona Native Plant Society. Phoenix Chapter

More Arizona Wildflowers will be published next issue.
Healthy Gardening
Protect Your Skin

Remember to be safe and wise when you enjoy the Arizona heat. Here in Phoenix, sunlight plays a big part in our day-to-day activities. Too much sun exposure on our skin has acute and chronic effects. Acute problems include sunburn, tanning, and drug-induced photosensitivity reactions, while chronic problems include photo-aging (wrinkling, skin laxity, mottled pigments and spider capillaries), skin cancer, cataracts, and changes in immune responses.

Since gardeners spend many hours outdoors, let’s concentrate on the sun and its effect on our skin. Exact details of a “sunlight causing cancer” connection still are under investigation. But epidemiologists have determined a link between ultraviolet (UV) sunlight and the risk of skin cancer (ex: skin cancer is more common in Arizona than in Minnesota). In 1996, approximately 1 million Americans were diagnosed with skin cancer (which accounts for half of all new cancers). Ninety percent of skin cancers are non-aggressive basal cell and squamous cell carcinoma; but these were still responsible for 1200 deaths in 1996. Malignant melanoma (10% of cases) is increasing dramatically. In 1997 in the U.S., 40,000 new cases of melanoma were diagnosed and 9490 deaths were attributed to melanoma. By the year 2000, the American Cancer Society predicts 1 in 990 persons will be diagnosed with melanoma.

Risk factors for skin cancer include:

- People with blue eyes, fair skin, red hair, freckles, and those who sunburn easily. (Caucasians’ melanoma risk is 7 times that of Hispanics, and 12 times that of Non-whites).
- A history of multiple blistering sunburns in childhood doubles your risk.
- Multiple dysplastic nevi (or unusual brown moles)
- A family history of melanoma in first degree relatives
- A recent research suggests stress may also contribute to the development of melanoma.

Remember sunburn is classified as a real burn injury. With a First Degree Sunburn, you get pain and a red color on your skin, with peeling and healing in a few days. A Second Degree Sunburn is more serious. It usually covers a large area and the skin blisters. You may have headache, fever, chills, and need to see a doctor.

To prevent a sunburn (and decrease the odds of skin cancer), remember to do the following:

1. Limit your Sun Exposure, avoid the hours between 10 a.m. and 3 p.m.
2. If you will be in the sun, for even 20 minutes, use a Sunscreen SPF 15 and Lip Balm SPF 15 every day, year-round. You need 1 oz. — a generous handful — of sunscreen to cover the average adult body. Apply sunscreen thickly 30 minutes before going outside (so cream has time to penetrate the skin). Reapply every 1-2 hours when swimming, perspiring, toweling or exercising. Remember to reapply lip balm SPF 15 frequently.

Sunscreens block the sun’s burning rays. Their product effectiveness is measured in Sun Protection Factor (SPF). This SPF indicates how much longer it would take to produce a sunburn if a person were to use the sunscreen. (For example: if a fair-skinned person normally burned in 10 minutes and used an SPF 15, it would take her 15 times as long or 2 ½ hours — 10 minutes x 15.) Sunscreens with SPF 15 offer protection against 93% of UVB rays; SPF 32 protects against 97% of UVB rays. Epidemiologic studies show that regular use of sunscreen SPF 15 or more during the first 18 years of life can reduce an individual’s risk of skin cancer by 78%.

3. Wear Sunglasses which are capable of blocking 99-100% of UVA and UVB rays. Glasses should be labeled: “UV absorption up to 400 nm,” “maximum of 99% UV protection,” or “meets ANSI-UV requirements.” Remember the darkness of the lens does not indicate the degree of UV protection, the chemical applied to the lens is invisible. Larger-framed, wrap-around sunglasses offer the greatest protection.

4. Use Tanning Creams to achieve the “bronzed look” but remember the “tan” does not decrease the skin’s susceptibility to sun damage. You still need to use sunscreen during regular sun exposure.

5. Wear Protective Clothing — a large brimmed hat, long-sleeved shirt, long pants. Thick, white cotton long-sleeved t-shirts provide an SPF between 15-30. Special clothing manufacturers (Sun Precautions 1-800-882-7860 and Sun Protection Factory) have introduced garments made with special sunblocking fabric with SPF 30 (see Consumer Reports, May 1998 for details on Sun Protection Products).

6. Use Extra Protection when you are near sand, snow, concrete and water which reflects up to 85% of the sun’s...