Graham County Gardening Newsletter

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High Desert Conference Report

May 4 & 5, 2006

Erica Phelps, Marilyn Weaver, Karen Thomson, Craig Wilcox, Dorine Chancellor, Ralph McClellan, and Gene Fowler at High Desert Gardening/Landscaping Conference.

Six Graham County Master Gardeners and one potential member, Erica Phelps, attended the Thirteenth Annual High on the Desert High Desert Gardening & Landscaping Conference in Sierra Vista on May 4 and 5. Full registration of $85 for each Master Gardener was funded by Graham County Extension Agent, Carol Willis, with an additional amount of $50 provided to each Master Gardener by the Graham County Master Gardeners Association. Ruth Anne Neff, Master Gardener, was also eligible for funding but could not attend due to her new job at Home Deport.

Four General Sessions of one hour and fifteen minutes were held in the mornings. Topics included: Moonlight Garden Design, Native SE Arizona Cacti and Succulents, San Pedro Water Conservation and Management Challenges, and The Know It All Panel composed of Agents answering questions from those in attendance.

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Inside This Issue

High Desert Conference Report (cont. from page 1)

Three sessions, each with three choices, were presented in the afternoons for a total of 18 choices! Everyone had an opportunity to find something of particular interest. Topics ranged around basic gardening information, landscaping with native plants, and food production. Dr. Randy Norton, our own Extension Agent, gave one of the presentations on Desert Soils, Gardening in a Less Than Optimum Environment. Both profit and not-for-profit vendors provided exhibits. Many door prizes were awarded.

Highlight reports on the Conference follow from each of the six Master Gardeners.

Dorine Chancellor

This was my fifth time to attend a High Desert Gardening & Landscaping Conference. I never fail to find interesting and informative sessions. The Power Point presentation on Desert Soils by our agent, Dr. Randy Norton is fully published in this newsletter. It is excellent and worthy of detailed reading.

Another session of great help to me was on Noxious Weeds. Identification is the first step in control. Is it a dicot or a monocot, sedge, annual, biennial, perennial, native or non-native, invasive or non-invasive? Examples of each type were viewed and identified. Then control by mechanical, mulch, cover crops, crop rotation, biological, heat or flame or steam, chemicals was discussed. Chemical control, as well as other information, was discussed in far more detail than I can include in this report.

It is this type of information, given in full detail, that makes conference attendance so valuable. Perhaps, we can include this presentation in a future Gila Valley Gardening Conference.

Gene Fowler

Moonlight Gardening. A daily ritual after work is taking my kitty outside for some daylight and fresh air. As we putter around the backyard, the long shadow of a retiring sun lengthens across the yard. An orange and red sunset pokes its way through the leaves of our eucalyptus tree casting a hue on everything. A few minutes later in the darkening evening, fuzzy shadows start to make themselves known. A giant golden ball is peeking its way through the limbs of the mulberry tree. Gradually an eerie glow envelopes the whole yard. Shadows of all kinds introduce themselves into our domain. Different birds and creatures begin to appear. A softer, cooler, quieter, and gentler part of the day is here.

I guess I thought I was the only one who appreciated that calming experience. That is until the conference opening speaker. A bubbly and animated Barbara Skye Siegel, passionately expressed her expertise in "Moonlight Garden Design". In little more than an hour, she put meaning into such subjects as: formality, contouring, perspective, layering, planting white, yellow, pink, and light purple flowers that grab the evening light, shadow and structural pattern sculptures, tough plants, easy care, and whimsical, playful elements. She made me want to tear out my backyard and make it better with so many great ideas.

Need relaxation therapy? Try looking in your backyard!

Ralph McClellan

On May 4 and 5, I finally made the trip to Sierra Vista for the "fabled" High on the Desert Conference sponsored by the Cochise County Master Gardeners. For several years, others from our group have told me how great this conference is. After attending, there is not much room to argue the point.

I wanted to compare theirs with ours. It seemed there were many more people running around with ribbons indicating they were committee members than we have members. I suppose that is to be expected when population numbers are compared. I talked to a few members about their experiences in putting on the conference. One of the more surprising bits of information was the fact that they did not pay any of their speakers. One reason might be that they are so close to the University that none of them have to stay overnight.

I enjoyed the conference and note that the facilities were good but not one bit better than we have. The exhibitors were numerous and varied. One small complaint was that the afternoon classes did not follow the schedule sent out with the enrollment materials. I did and found myself in two classes that I did not expect to be in.

I wish to express appreciation to the Graham County Master Gardeners and to the Extension Office for their assistance in making the conference available to each of us.

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Conference Reports (cont. from page 2)

Karen Thomson

Sights. Sounds. Smells. Talking plants. Talking environments. Getting ideas. A new book! Listening to lectures and losing all track of time. Speakers like Matt Johnson from the U of A who presented a program on native southeastern Arizona cacti and succulents made me realize that I'm actually able to identify some of the desert plants, the natives, and wanting to know more. Now I own an autographed copy of his book.

And then there was Holly Richter of the Nature Conservancy who spoke about the San Pedro water conservation and management problems. The problems they are having with population growth and water can be applied to anywhere in the southwest.

There were hard choices to make with the multiple, simultaneous afternoon sessions. Some sessions were for beginners or review, all were informative and I came away with some new ideas and thoughts. The end came all too quickly. Our heads filled with information, we were tired and exhilarated all at once.

Marilyn Weaver

Holly Richter's presentation on the San Pedro Water Conservation and Management Challenges was both disheartening and hopeful. We are all aware of the water crisis that is facing our community and our state. Dr. Richter spoke specifically on measures being taken to conserve the San Pedro River, which is one of the last remaining riparian areas left in the United States. It supports an old growth cottonwood forest, rare amphibian species and is a critical route for migrating birds. Did you know that the Charleston gage (near the Charleston Bridge) stopped flowing last summer for the first time EVER? This location is one of the places where the ground water is monitored. Fortunately scientists have determined there is enough water for human consumption, but the lowering of the water table just a few feet will kill the river. The National Defense Authorization Act, Section 321, for 2004 requires measurable goals for reduction of overuse by 2011. Some steps have already been implemented, such as no agriculture pumping or community developments near the river. Committees of scientists and lawmakers are in place to solve this problem before it's too late. Hopefully they can achieve this daunting task, since the San Pedro River is one of nature's best gardens.

Craig Wilcox

About 120 attendees were at the two-day High on the Desert gardening conference in Sierra Vista. Plenty of vendor booths, great speakers, an excellent selection of gardening and plant books at the U of A bookstore booth. The conference included breakfasts and speakers, many from academia and extension and many local experts. The conference was sponsored by the Cochise County Master Gardeners Association and the University of Arizona Cooperative Extension.

I especially enjoyed the presentation on chiles by Dr. Ron White from New Mexico State University. Being more of a chile aficionado (aka pepperhead) than a chile grower, it was surprising to learn that most of the common peppers and chiles, from bell peppers and jalapenos to green chile and poblanos are all the same plant specie, Capsicum annum. Thai, Tabasco, habaneros and Chinese pepper are closely related but are different specie. Closely related to tomatoes and potatoes, chiles are afflicted by many of the same challenges like curlytop and potato fruitworm. Grown by early American tribes for at least 400 years, chile peppers are thought to have originated in South America, and were spread by birds throughout tropical America and into the Southwest. Hence the reason that the common wild chile is sometimes called "bird chile". The first commercial grower was Emillo Ortega, of Ortega Chile fame, who grew, canned and sold chiles from New Mexico to California. New Mexico State University runs the Chile Pepper Institute (www.chilepepperinstitute.org) and is a member of the Chile Taskforce (www.chiletaskforce,org). Best known as the cash crop of New Mexico, Arizona has gotten into the act; in fact most of the commercially grown chiles in New Mexico are an Arizona breed chile. Some new developments in chiles include developing the ornamental chiles like "treasure red", used as either a decorative container plant or in cut "flower" arrangements.

Plant your chiles early, just after the last frost in the spring, as chile seedlings don't like hot soil. Use drip systems with mulches as root rot can be a problem with chiles and flood irrigation. Dr. White recommends light fertilizing with phosphorous and potassium at or

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Conference Reports (cont. from page 3)

before planting by working into the soil and holding off on the nitrogen until later in the season and if possible, by injecting into your drip system. Chiles need full sun. Hopefully everyone knows that green and red chiles are from the same plant, they just differ in how long you leave them on the plant. But what many home gardeners may not know is that growers usually don't keep seeds from their own crop for the next year since chiles cross very easily and it is often difficult to predict the progeny. A friend once ended up with very hot palmettos that crossed with his jalapenos.

Capsasum is the chemical responsible for the hotness in chiles and is measured in Scoville Heat Units or SHUs. A New Mexico green is about 10,000 SHUs Tobasco is 150,000 and the hablano is 300,000. The current reigning champ is the Red Savina habanero at 900,000 SHU. Capsasum is found only in the vesicles or the internal ribs which can be removed if you end up with a batch hotter than you wanted. Enjoy your chiles and the next "High on the Desert" gardening conference.

Gardening in a Less Than Optimum Environment

By Dr. Randall Norton, Graham Extension Agriculture Agent

Dr. Randall Norton at High Desert Conference presenting Gardening in a Less Than Optimum Environment.

Basics of Soil Science

Soils are formed from various types of parent material--sediments, decayed, rocks, glacial deposits, etc. Parent material changes as things are added to the soil, moved within the soil, or washed out of the soil. Water, nutrients and mineral particles are added as rainfall, dust, and organic materials are deposited on the surface. Water moves through the soil, carrying dissolved salts, organic materials (dissolved and particles), and clay particles with it. These can be redistributed within the soil, or removed by washing out of the soil entirely.

These processes of addition, redistribution, and removal are instrumental in the formation of horizontal soil layers or horizons. A soil is made up of a set of horizons which is also called a soil profile. Note that soil layers can also be formed when parent material is deposited by wind or water, and that these layers can look very much like the soil horizons described here.

In most parts of the United States, net water movement is downward. Even though short-term water movement may be upward (from the soil to the atmosphere) as water evaporates from the soil and as plants transpire, precipitation is great enough that, in the long run, water moves down through the soil profile. This water carries dissolved salts deeper into the profile or washes them from the soil.

In arid regions like Arizona, however, net water movement is upward because rainfall is limited and high temperatures increase evaporation. Water moving up through the soil profile carries dissolved salts with it, and when the water evaporates from the soil surface, the salts are left behind. Thus over time, arid region soils tend to become saltier and saltier because salts added from precipitation, ground or surface waters, and parent materials do not get washed out of the soil profile. A visible layer of sodium chloride may form at the soil surface. This is also one of the mechanisms responsible for caliche formation.

Soil Horizons

Horizons are given letter des-

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Gardening in a Less Than Optimum Environment (cont. from page 4)

ignitions. The main horizons are:

A horizon—a surface horizon formed by a buildup of organic matter at or near the soil surface.

E horizon—E for eluviation (leaching or washing out of). These horizons are depleted of organic matter, clays, iron and aluminum oxides which have been moved out of the E horizon and deposited below.

B horizon—this is a horizon of accumulation, rich in organic matter, clays, iron and aluminum oxides. The material that washed out of the E horizon ended up in the B horizon.

C horizon—this is the unweathered parent material.

Horizons can have many subdesignations to further describe them. Soils need not have all horizons, and some can have more than one of a given horizon.

Arid Soil Horizons

The upward movement of water in arid regions like Arizona, carries dissolved salt up through the soil, and salts accumulate in the profile. Over time, salt layers form. They are classified according to the type of salt that accumulates.

An accumulation of sodium chloride will form a salic horizon. An accumulation of hardened (petro) calcium carbonate forms a caliche layer which is another term for a petrocalcic or cemented calcium carbonate. It can be relatively weak, or cemented into a rock-like layer. This cemented layer can impede water flow and root penetration. It is also fairly alkaline, which can cause additional problems.

Soil Color

Highly organic soil shows a typical rich, dark color. A young soil (probably from a flood plain or other recent deposit) will be without much color development. A well-drained, highly weathered soil with good red or orange color results from highly oxidized iron. Basically the iron in such soil has rusted and you will notice that this is, indeed, a reddish rust color.

Soil components are: 20 – 30 % air, 20 – 30% water, 45% mineral and 5% organic.

Soil Texture

Soil texture refers to the size of individual grains. Grains are grouped according to diameter. Sand – 2 to 0.05 mm, silt – 0.05 to 0.002 mm, and clay is less than 0.002mm. Texture is recognized on the basis of relative percentages of these separates.

Texture at Home--The Jar Test

Collect an accurate sample where the roots actually grow. Scrape away the first two inches of soil and dig a hole 6 inches down (free of large organic matter and rocks. Place in a plastic bag and label the bag.

Sift before testing. Spread the soil out in an old cookie tray to dry for a day or so. Sift it through a wire-mesh sieve or an old colander to remove small stones and roots and to break down any lumps of soil.

Place a cupful of the soil into a straight-sided jar. Add a tablespoon of powdered dishwashing detergent. (Detergent is a surfactant, which keeps the soil particles separate, resulting in a more accurate test.)

Fill the jar to the top with water. Shake the jar for three minutes to thoroughly combine the soap, soil, and water, and to make sure no soil is stuck to the bottom or sides of the jar. Set the jar on a flat surface to let the sediment settle. Sand particles settle out of the solution after about a minute. Silt will settle out after about an hour. The silt layer is darker than the sand. Clay can take from one to two days to settle out of the solution. The clay layer that settles on top is fine texture and light in color.

Measure the depth of each layer. The total depth is 100% Example: Total depth = 2 inches.

Sand Layer = 1 inch = 50%

Silt Layer = 0.5 inch = 25%

Clay Layer = 0.5 inch = 25%

Sample Problem: What is My Soil Texture?

Depth of sand = 2.3 inches

Depth of silt = 0.2 inches

Depth of clay = 1.0 inches

What is the soil's textural classification?

Answer:

Total depth = 3.5 inches

Depth of sand = 2.3 inches = 2.3/3.5 times 100 = 66%

Depth of silt = 0.2 inches = 0.2/3.5 times 100 = 6%

Depth of clay = 1.0 inches = 1.0/3.5 times 100 = 28%

Structure Area--Is It Important?

Increased surface area generally results in: higher CEC (Cation Exchange Capacity), higher level of nutrient content, higher water holding capacity, higher soil reactivity, greater microbial activity.

Surface Area Comparison

1 gram sand - 0.1 square meter

1 gram silt – 1 square meter

1 gram clay – 10 to 1,000 square meters

Why are Clay Particles Important?

They are coated with water, electrically charged, sites for microbial growth, sites of chemical reactions such as weathering, adsorption of chemicals, retention of nutrients, soil aggregate formation. (continued on page 6)

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Electrical Charge

Most clay particles are negatively charged. Like charges repel. Opposite charges attract. Amount of charge in soil is CEC (Cation Exchange Capacity))

Effect of Charged Soil Particle

Effect of CEC: Increased nutrient capacity and increased buffering capacity. In general, CEC increases with clay content and organic matter content.

Soil Structure

Physical attributes: Aggregation (soil particles grouped into aggregates) results in increased aeration, increased water penetration and increased root growth.

Enhanced by: organic matter, calcium and other 'flocculating' cations. Destroyed by: over tillage and traffic, and chemical destruction (Sodium-affected soils)

Flocculation v. Dispersion

Flocculation results in development of good soil structure aggregation. Dispersion results in destruction of good soil structure, soil 'sealing' and is enhanced by presence of $Sodium^{+}$ resulting in large hydrated radium, 'pushed' soil particles apart.

Soil Salinity and Sodicity

USDA classification of soils based upon Electrical Conductivity, Sodium Adsorption Ratio, pH (acidity/alkalinity of the soil).

Optimum pH is 6. Most Arizona soils are 7 - 8

How to Correct Salt-Affected Soils

Correction depends on salt composition. Saline is the easiest to remediate. Remediation can be accomplished by employing leaching fraction **or General Rule of Thumb for Leaching:** Periodically flush soluble salts from soil. Make sure adequate drainage is available. Irrigate 2 to 3 times as long as normal every 6 to 8 weeks to flush salts from soil.

How to Correct Salt-Affected Soils

Sodic dominated soils are more difficult. Soil structure is typically destroyed and difficult to leach. Restore soil structure by adding source of calcium (gypsum), flush soil of sodium and excess gypsum. This is difficult to achieve and takes time.

Incorporate organic material at every opportunity. Apply soil sulphur every year at rates ranging from 300 – 3000 lbs./acre. Amount depends upon the problem. Use as high quality water as possible.

Problem/Question. How much Sulphur to Add?

In a loamy soil, how much sulphur do I need to add to my garden plot of 50 ft. x 50 ft, to change the pH from 8.0 to 6.5?

Answer: Area of garden plot is 50 ft. by 50 ft. = 2500 square ft. 0.3 lbs. Sulphur/10 square ft. needed to affect the desired change so: 0.3 lbs Sulphur/10 square ft. = 0.03 lbs/square ft., then 0.03 lbs/square ft. x 2500 ft. = 75 lbs. Sulphur.

Soil Water

Field Capacity (FC). If a soil is thoroughly wetted, then drained by gravity, the pores are not filled with water, a sheath of water coats the surface of each soil particle and is physically held to the soil. Permanent Wilting Point (PWP) is the point at which the plant can no longer extract water from the soil.

Maintain Proper Soil Moisture

In general, soils hold 1 – 2 PAW per foot and roots explore 12 – 18 inches of the soil. **Example:** If 1.5 inches/foot – 18 inches profile = 2.25 inches PAW water. Then you should irrigate when at 50% PAW, 1.1 inches depleted. Track ET rates. During peak of season may use 0.3 inches per day. 3.6 days replenish water.

Soil Organic Matter

Organic matter is biological remains, less than 1% to over 20%, most Arizona soils have less than 2%, is energy-rich material, broken down by organisms to form. Humus (improves structure and water holding capacity) contains soluble nutrients.

Benefits of organic matter are increased nutrient availability, increased CEC, increased permeability (water infiltration), increased aggregation, increased water holding capacity. Presence stimulates biological activity.

Supplemental Organic Matter

Release of nutrients and breakdown of soil organic matter to stable humus requires biological reactions (soil microbes). Microbes have nutrient requirements. Carbon (C) is used as energy source. Nitrogen (N) also needed for decomposition. 10:1 Carbon:Nitrogen ratio will remain in balance. For every 10 carbon atoms consumed one Nitrogen atom is used.

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Gardening in a Less Than Optimum Environment (cont. from page 6)

Carbon:Nitrogen Ratios of Common Organic Amendments

Material	C:N Ratio
Vegetable wastes:	12:1 to 20:1
Grass clippings	12:1 to 25:1
Cow manure	20:1
Horse manure	25:1
Leaves	30:1 to 80:1
Straw	40:1 to 100:1
Bark	100:1 to 130:1
Paper	150:1 to 200:1
Woodchips/sawdust	100:1to 500:1

When Adding Organic Material

Low Carbon:Nitrogen Ratio

Incorporate early enough to allow for decomposition. For spring planting, incorporate in the fall. For fall planting, incorporate during the summer. Compost the material first. (lowers Carbon:Nitrogen). Supply additional Nitrogen through a fertilizer to assist in breaking down the organic material. Apply directly to soil. If there is a high Carbon to Nitrogen ratio, there is a potential for burn. Take caution.

Plant Nutrition and Soils

Nutrients are required for plant growth. There are 20 essential nutrients. Carbon, hydrogen, oxygen, phosphorus, potassium, nitrogen, sulphur, calcium, iron, magnesium, manganese, boron, copper, zinc, molybdenum, sodium, chlorine, cobalt. Not all are required for all plants but all have been found to be essential to some (Soil Fertility, Tisdale and Nelson)

Plant Nutrients—What's in a Plant

One way to look at what elements or nutrients must be provided for healthy plant growth is to look at plant composition. Carbon, hydrogen, and nitrogen make up the bulk of the plant as water and various carbohydrates. Remaining macronutrients are relatively large. Listing is:

45% Carbon (C), Potassium (K) 1 to 6%, Hydrogen (H) 6%, Calcium (Ca) 0.1 to 4%, Oxygen (o) 43%, Magnesium (Mg) 0.1 to 2%, Nitrogen (N) 1 to 6%, sulfur (S) 0.l to 1.5%, Phosphorus (P) 0.l to 1%.

Other nutrients are needed in much smaller amounts (parts per million). They are iron, copper, manganese boron, molybdenum, zinc, chlorine and nickel.

Nutrient Composition in Desert Soils

Most desert soils are young (geologically). Leaching levels are low and nutritive value is high. Most nutrients are present but availability (closely linked to soil pH) can be an issue. Nitrogen, potassium and phosphorus are the most common nutrients added through supplemental fertilizer.

Iron deficiency is the most common nutrient deficiency symptom. It is exhibited by interveinal chlorosis and appears on new growth first. Iron deficiency can be temporarily corrected by adding sulfuric acid or by adding soil sulfur which is slower reacting. Many metal nutrients are insoluble in high pH soils. Use chelated forms of these nutrients and apply directly to foliage following label. Don't apply in heat of day or when plant is stressed.

General Fertilizer Recommendations

Recommendations for specific crops may be found in the Master Gardener Manual online. http://ag.arizona.edu/pubs//garden/mg/index.html. Typically no other nutrients will need to be applied except Nitrogen. Special cases exist: Zinc in pecans, phosphorous in flowers which promotes blooming and iron in high pH areas.

Soil Testing

Soil chemical testing can reveal areas that may be deficient in certain nutrients. Commercial laboratories can analyze soil samples and water samples for salinity and all nutrient levels. The usual cost is $60 to $100 per sample.

Fertilizers

Labels must contain percent (by weight) of total nitrogen, available phosphate and soluble potash. Other nutrients may be specified.

Types of fertilizer; Complete which contains all three primary nutrients (N(Nitrogen), P(Phosphate) and K(Potash) and Incomplete which is missing at least one of the primary nutrients.

Common Incomplete Fertilizers

Fertilizer	N	P	K
Ammonium Nitrate	34	0	0
Ammonium Sulfate	21	0	0
Ammonium Phosphate Sulfate	16	20	0
Mono-Ammonium Phosphate	11	48	0
Single Super Phosphate	0	20	0
Triple Super Phosphate	0	45	0
Urea	46	0	0
Urea formaldehyde	38	0	0
Muriate of potash	0	0	60

Slow-release fertilizers release nutrients (usually nitrogen) over a long period of time. They are slowly soluble materials (urea formaldehyde), granules are coated with resins or sulfur (sulfur-coated urea and Osmocote), materials that must decompose to release nutrients (organic fertilizers).

Organic fertilizers. Almost any plant or animal waste or by-product can be used as a fertilizer material. In general, they have (continued on page 8)

Gardening in a Less Than Optimum Environment (cont. from page 7)

much lower nutrient concentrations than conventional fertilizers, although there is a lot of variation. Some of the benefits of using organic fertilizers are: they usually contain micronutrients, often in a chelated form, they release nutrients slowly, so the nutrients are less likely to be lost through leaching processes or tied up in the soil. Because they release nutrients slowly, it is harder to overdo it and damage or 'burn' plants, they add organic matter to the soil, improving soil structure. Organic fertilizers are not magical. The nutrients provided are exactly the same as those contained in conventional fertilizers and the plants grown with both types of fertilizers are identical in every respect.

Typical Composition of Organic Fertilizers

Source	% Moisture	N	P	K
Chicken	35	4.4	2.1	2.6
Cattle	80	1.9	0.7	2.0
Hog	72	2.1	0.8	1.2
Horse	63	1.4	0.4	1.0
Sheep	68	3.5	0.6	1.0
Solid Waste Compost	40	1.2	0.3	0.4
Sewage Sludge	80	4.5	2.0	0.3

Fertilizer Formulations

Fertilizers can be combined with herbicides. They can be in the form of granular solids, slow-release granules, liquids/water soluble powders, slow-release spikes/tablets.

How Much to Add?

Always follow the label recommendations. However, it might be necessary to perform some simple calculations.

Example:

If you need to apply 1.5 lbs. Nitrogen/1000 square ft. to your Bermuda lawn every month over the course of the summer (June, July, and August), approximately how much fertilizer do you need to buy?

Answer: Yard is 50 ft. x 200 ft. = 10,000 square ft. Need 1.5 lbs Nitrogen/1000 square foot/application. 1.5 x 10 x 3 = 45 lbs. Nitrogen.

Urea is only 46% Nitrogen so you would need almost 100 lbs urea to achieve the 45 lbs. Nitrogen. 45/0.46 = 98 lbs. urea. Cow manure is only 1.9% Nitrogen. So you would need over 2 tons manure to achieve the needed Nitrogen rate. 45/0.019= = 2,368 lbs. cow manure.

If you are experiencing summer gardening problems, you may find the solution by reading the June and July In Your Garden Notes!!

In your June Garden!

- Plant sunflowers, cantaloupe, honeydew, Armenian cucumbers, and radishes all month.
- Plant watermelon and okra through the 15th of the month.
- Plant summer bedding plants such as celosia, coleus, cosmos, marigolds, salvia, verbena, vinca, and zinnias.
- Start preparing the soil for your big July garden.
- Harvest herbs before they begin to flower. Quality is best in the morning.
- Treat chlorosis in plants with iron chelate. Chlorosis shows up as yellowing between the veins of the new growth.
- Pepper and tomato plants need even soil moisture to prevent blossom end rot.
- Watch for sign of curlytop virus in tomatoes, melons, and cucumbers. The leaves of the affected plant curl upwards and the plant will be stunted. Remove and destroy affected plants.
- Blast off aphids, thrips and mites with a stream of water from your hose or use insecticidal soap.
- Check for squash borers. Look for clusters of small brownish eggs on squash vines. Rub them off before the borers hatch.
- Feed and water roses after each bloom cycle.
- When pruning hedges, make sure that the bottom of the hedge is wider than the top so that lower foliage is not shaded out. (continued on page 9)

In Your June Garden (cont. from page 8)

- Make sure that apricot trees are watered amply to carry them through their fruiting cycle.
- Fertilize indoor plants monthly during the summer. Pinch back tips to maintain fullness.
- Treat grapes and hedges with powdered sulfur or systemic fungicide to prevent mildew

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In your July Garden!

- Plant winter squash, corn, beans, black-eyed peas, cucumbers and radishes all month.
- Plant sunflowers, summer squash, watermelon and pumpkins (planting now will give you Halloween pumpkins) through the 15th of the month.
- Plant broccoli, Brussell sprouts, cabbage, carrots, cauliflower, and kohlrabi from July 15th on.
- Set out annuals such as cosmos, coreopsis, marigolds, salvia, verbena, vinca rosea and dahlias.
- Treat chlorosis in plants with iron chelate. Chlorosis shows up as yellowing of new growth between the green veins.
- Pepper, cucumber, squash and tomato plants need even soil moisture to prevent blossom end rot. Black, or brown leathery patches develop on the blossom end of the fruit. Uneven moisture levels cause a calcium deficiency in the fruits. Keep evenly watered and put mulch around the plants to hold moisture.
- Watch for signs of curly top virus in tomatoes, melons and cucumbers. The leaves of the affected plant curl upwards and the plant will be stunted. Remove and destroy (do not compost) affected plants.
- Pollination often suffers when temperatures are high. Bell peppers, tomatoes and squash are most commonly affected. Flowers dry up and fall off, leaving no developing fruit. Keep plants watered and health and fruit production will resume when the temperatures drop.
- Fertilize lawns monthly through the summer.
- Bermuda grass needs to be watered about every 3 days during the heat of the summer. If you notice sizable wilted patches of dull, blue-green grass that does not spring back after being walked on, it is time to water. Give lawns special attention where tree roots compete for moisture
- Blast off aphids, thrips and mites with a stream of water from your hose or use insecticidal soap.
- Cut back chrysanthemums to about 8 inches high or pinch back smaller plants on July 2 and again August 1 to encourage bushier plants and more flowers in the fall.
- Feed roses after each bloom cycle
- Mulch plants with 3 – 4 inches of organic matter for weed control and moisture retention.
- Continue to deadhead spent blossoms to promote more flowers.
- Continue to deep water trees and shrubs through the heat of the summer.
- Make sure apricot trees get enough water to carry them through their fruiting.
- Keep watching for grape leaf skeletonizers.

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There will be no July Newsletter. See you in August!

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