

# GREEN INDUSTRY NEWS

Volume 6

August/September 2000

Number 6

## CALENDAR OF EVENTS

### **MGGA Conference on Nutrient Management**

October 24, 2000

### **Introductory Greenhouse Conference**

November 30 2000

### **Pesticide Recertification Conferences**

December 19, 2000

January 31, 2001

February 13, 2001

### **Advanced Landscape IPM PHC Short Course**

January 8 - 12, 2001

Details begin on page 9

## **Don't Throw the Dogwood Out With the Dandelion**

Bob Stewart

One of my favorite phone calls each summer (this is tongue in cheek so please note the sarcasm) is the one from the homeowner demanding I come out to their house right away and document the fact that the lawncare company has killed the prize dogwood tree through their careless use of a weed killer. I really don't like these calls so would all of you lawncare people please stop

doing this!

Actually, this is one of those perception vs. reality adventures. While many homeowners perceive that lawn weed killers cause the demise of many dogwood trees, the reality is that this happens very rarely. Compared to all of the other nasty things that can befall a dogwood in the average landscape, weed killers are rather low on the danger list. And yet, it does happen occasionally. Weed killers used to fight the dandelion can occasionally take a bite out of the dogwood and these rare instances simply serve to fuel the client's perception that whenever a dogwood dies, there's a lawncare company to blame.

Thus, we have a situation where we want to eliminate broadleaf weeds from the client's lawn, but we want to do so without hurting any of the nearby landscape plants. Let's deal with getting rid of the weeds first. This is a worn out cliché but it is important and true, so hear (read) it once again. The best lawn weed control method is to avoid weeds in the first place. Once again, the best lawn weed control method is to avoid weeds in the first place.

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We also know how to do this, we just don't do it often enough. Here's the list of things that contribute to a weed problem in the average lawn: (1) Mowing too low. (2) Applying too little or too much fertilizer. (3) Using cheap, poor-quality seed. (4) Excessive traffic on the lawn. (5) Compacted or poorly drained soils. (6) Too much shade.

Any, or all, of these conditions will increase the chance of the lawn being invaded by weeds. Some of these may be beyond your control, but that doesn't make a difference to the lawn or to the weeds. When these conditions are present, weeds cometh, and when weeds cometh the weed killers are right behind. This is a fact you have to make sure the client understands. You don't want to use a weed killer on their lawn, but their poor mowing habits, or the heavy clay soil is the reason for the weeds and the reason weed killers are required. If nothing else, work on getting the mowing height up into the 2-1/2 to 3 inch range, and the fertilizer applications shifted into a mainly fall schedule.

Once you are faced with a lawn that has a problem with broadleaf weeds you should act as soon as possible. The vast majority of broadleaf weeds are controlled by 2,4-D, MCP, dicamba or triclopyr. Commonly, two or more of these four broadleaf weed killers are combined in a single product. MCP and 2,4-D are known as phenoxy herbicides and they occur in two chemical forms, the amines and the esters. In general, the esters are less expensive and may be more effective against some difficult to control weeds, such as wild garlic and oxalis, but the esters are also more likely to cause problems for that dogwood. When temperatures are in the mid 80's and above, the ester formulations can volatilize and form a weed killer vapor that floats over, or up, to take a whack at that dogwood. When dealing with broadleaf weeds on lawns where landscape plants are nearby, choose and use the amine forms of the phenoxy herbicides. Dicamba, although a very effective herbicide on broadleaf weeds in lawns, is often the one weed killer singled out as the landscape plant killer. While several of the other broadleaf weed killers are active in the soil, dicamba seems to be the one

most often associated with damaging landscape plants. To avoid later client entanglements, you may wisely decide to forgo the use of a dicamba containing product when treating weeds in the vicinity of sensitive landscape plants.

Two of the newer broadleaf herbicides are triclopyr and its sister compound clopyralid. Triclopyr is combined with 2,4-D in the brand product Turflon-D and combined with clopyralid in the brand product Confront. The best broadleaf weed control product for you will depend on the types of weeds you are dealing with and the situations under which you are working. Nevertheless there are a few general rules to follow in the use of any of the broadleaf weed killer products.

1. Read and follow all label directions.
2. Smaller and younger weeds are easier to kill than larger and older weeds.
3. Liquid formulations are more effective than granular products.
4. Apply broadleaf weed killers when the soil is moist and the weeds are in active growth. Weed killers just don't work very well under drought conditions.
5. Don't mow the day before a broadleaf weed killer application and don't mow for at least 24 hours following a broadleaf weed killer application.
6. Don't apply broadleaf weed killers when temperatures are below 70°F or above 90°F.
7. Pay attention to where you are spraying and don't spray if there is a wind greater than 5 mph. The few times I've diagnosed lawn weed killer damage to landscape plants the cause was usually accidental misapplication.

Controlling broadleaf weeds is an important part of a regular lawn maintenance program. However, dealing with a client's claim that you killed their prize dogwood or azalea is no fun, so be careful out there. For more information on the use of broadleaf weed control in established lawns, pick up a copy of the University of

Maryland Department of Natural Resource Science and Landscape Architecture Agronomy Mimeo number 79. It's free and available from your local County Extension office.

*Bob Stewart is an Extension Educator in commercial horticulture for Anne Arundel and Prince George's counties with Maryland Cooperative Extension, University of Maryland..*

## **Check Those Brown Areas of Your Turf for Insects**

Paula M. Shrewsbury

This is the time of year that lawns and golf turf start to brown out due to insect damage. The following is a summary of a few of the key turf insect pests to be monitoring for at this time of year.

**White grubs:** The white grubs that feed on the roots of your turf are the immature stage of several species of scarab beetles which include Japanese beetle, oriental beetle, masked chafer, green June beetle, European chafers, and black turfgrass ataenius. At this time, most grubs are relatively small (2nd instars) and at a stage when chemical controls should still be effective. **MONITORING for white grubs** should be done **NOW** to determine if control measures should be applied to prevent turf damage later in September and October when grubs are bigger, eat more, and are more damaging. Monitoring should be focused in areas with the greatest probability of having grubs. For example, irrigated turf in sunny areas are more likely to have grubs than non-irrigated turf because eggs need moisture to hatch. Other areas include irrigated turf around plants such as roses, lindens, or grapes, which are preferred hosts of Japanese beetle; turf with thick thatch layers or that have been fertilized with organic fertilizers will attract green June beetles, chafers, and black turfgrass ataenius; and turf areas under lights since lights attract night flying beetles.

Monitor your grub population by examining several square foot sections of turf. Cut 3 sides of the square foot area and lift the turf. Look for grubs in the root zone and top inch or two of soil. Grubs should be identified to species and assessed for any signs of

beneficial organisms (insect killing fungi, bacteria, or parasitoids) at work attacking the grub population. Another sampling method is to use a 4" golf course cup cutter. Multiply the average number of grubs per cutter sample by 10 to estimate the number of grubs per square foot. If your average grub density is above 10 to 15 grubs per square foot, control measures are warranted to prevent future damage. If grub populations are at damaging levels, chemical controls should be applied in the hot spots (areas with damaging grub populations). At this time of year, chemical control options include trichlorfon (Dylox), isazophos (Triumph), fonophos (Crusade), ethoprop (Mocap), bendiocarb (Turcam), or diazinon (not on golf courses or sod farms). It is getting too late in the season for imidacloprid (Merit) which is a systemic or Mach2, an insect growth regulator.

**Annual Bluegrass weevil (*Hyperodes*):** Annual bluegrass weevil is a pest of short cut (less than 0.75") annual bluegrass which is often found on golf courses. Young larvae feed within the plant stems and older larvae come out of the stems and feed on the crowns of the turf. This feeding causes the turf to yellow, wilt, and turn straw colored. Damage first appears along the edges of fairways near woods or perimeters of greens and tees. Monitor your short cut annual bluegrass around tees and greens for second generation larvae feeding near the crowns now. You can monitor for larvae visually or a more accurate method is to take several cup cutter cores and examine them. Break up the soil and thatch of the core and place it in warm water. Larvae should float to the surface in 5 to 10 minutes. If larval densities are high and damage is occurring, an application of isazophos (Triumph) or chlorpyrifos (Dursban) may be warranted. Treat only areas where populations are high and damage is occurring (hot spots). Control strategies should also include adequate irrigation, raising mowing height if possible, and reducing the amount of annual bluegrass in the turf.

**Billbugs.** Billbug larvae are active at this time. Billbugs prefer highly maintained Kentucky bluegrass, but can also be a pest on perennial ryegrass, fescue, and tall fescue. Their feeding results in small, irregularly shaped

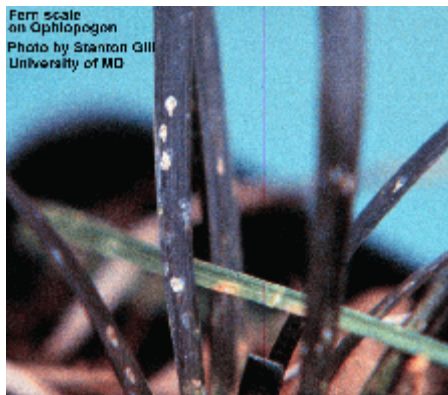
brown patches (often mistaken for dollar spot disease) that pull up easily when tugged on. Young billbug larvae feed in the stem of the turf and control at this time is very difficult. However, at this time the older billbug larvae have dropped out of the stems to the soil where they feed on the roots of the turf. Monitor for billbug damage by tugging on tufts of grass. Damaged turf will pull up easily and sawdust-like frass can be seen around the crowns and in the stems. Visually examine the base of plants at the thatch / soil interface and the top 4" of soil (use a cup cutter to sample) for the presence of larvae. Chemical control options for larvae include bendiocarb (Turcam), carbaryl (Sevin), imidacloprid (Merit - this is a systemic and must be applied early – too late now), bifenthrin (Talstar), diazinon (not on golf courses or sod farms), ethoprop (Mocap), fonophos (Crusade), or isofenphos (Oftanol). Entomopathogenic nematodes (*Steinernema carpocapsae*) have been demonstrated to give good control and are commercially available. If infestations are not too high, damage may be masked with adequate irrigation and fertilization

*Paula Shrewsbury is an Extension Specialist in Ornamental and Turf Entomology in the Department of Entomology at the University of Maryland, College Park.*

### The Fern Scale is Creeping Into Groundcovers

Stanton Gill

In July, David Clement and I were conducting an IPM tour of pests in the landscape with PGMS at American University. In over half of the landscape beds with liriopie that we examined, the plants were infested

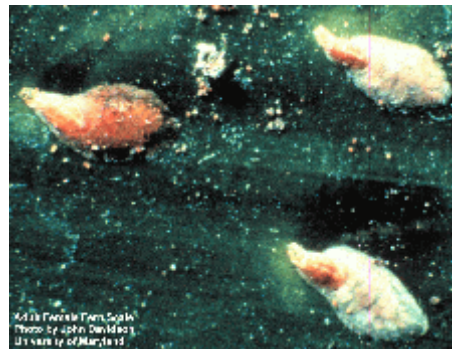


Fern scale on Ophiopogon  
Photo by Stanton Gill  
University of MD

with an armored scale. This pest is showing up more and more in landscape plantings on mondo grass, *Ophiopogon*, and *Liriopie*. This armored

scale is commonly called the fern scale, *Pinnaspis aspidistrae*. This might be because so many landscapes have these two plants installed as groundcovers.

The female is pear-shaped and mature females are 1.5 –2.5 mm long. The males are white, felted, and three ridged. Crawlers are out in May and June. If you catch this scale in the crawler stage, use a 2% horticultural oil to control it. Mature females appear to be fairly susceptible to foliar applications of Orthene. In the fall, the crawlers move into the base of the plant where they overwinter in the crown of the plant. During the growing season the crawlers move back out to the newly emerged foliage. The best thing a landscape manager can do is examine plants before they are moved into the landscape and make sure they are clean of any scale



insects.

Visit our web site to see a color picture of fern scale.

<http://www.agnr.umd.edu/users/ipmnet> and choose Green Industry News.

### Fall webworm

Stanton Gill

Fall webworm has been especially active this season in central Maryland. The caterpillars have been causing lots of webbing over the ends of branches. In some cases, I have observed whole crabapple, mimosa, and maples that were completely covered in webs and devoid of foliage. In September, control is really not practical. Next season, if you can catch the larvae when they are small, Bt or the new reduced risk pesticide, Conserve, can be used to control the young larvae.

*Stanton Gill is a regional specialist for commercial*

## **Redbud (*Cercis canadensis*)**

Ginny Rosenkranz

Someone played a silly trick on all of us when they named a native American purple flowering tree a Redbud, but there it is and we are stuck with it! Redbud (*Cercis canadensis*) is a small, elegant tree that grows no higher than 30 feet and about 25 to 35 feet wide, perfect for small yards and single story homes. Some varieties prefer a bit of shade, but many thrive in full sun as long as they can get a cool drink of water during the scorching months of July and August. They are fairly drought tolerant but a long drought can predispose them to diseases.

Redbud bloom in the early spring before their foliage is formed, so the effect of bright pink or purple (never red!) flowers on black branches is stunning. Some Redbud cultivar flowers are actually pure white, like the 'Alba' and 'Royal White'. Neither seem to be embarrassed by the name Redbud as they flower very profusely in pure white. There is also a 'Dwarf White', discovered by J. C. Raulston at his arboretum, that only grows 7 feet tall. For more color in the landscape, try the pink flowering cultivars like 'Flame', which is a double flowering form. 'Pinkbud' and 'Tennessee Pink' are both single bloomers but are well worth growing in the landscape for their bright pink flowers. If a less flamboyant pink is desired, try 'Texensis', a subspecies of the 'Tennessee' that flowers a soft rose pink and is said to be very drought tolerant. An even softer pink is 'Withers Pink Charm' which combines the soft pink color with good cold tolerance.

All of these cultivars have valentine shaped green leaves ranging from light green to dark green in color. They all grow in a dense, rounded shape if grown in the full sun, and loose and open when grown in the shade. They can all handle full sun very well. For bright pink flowers followed by brighter pink foliage, try growing the 'Forest Pansy'. After flowering, this unusually delightful

tree starts out with almost iridescent pink leaves that tone down to a dark purple green. During the summer months, some new foliage will emerge giving the tree bright 'highlights' of pink. The 'Forest Pansy' does need to grow in light shade and looks very good when paired with true green hollies or yews. For sun or shade, a Redbud will find a place in the landscape.

*Ginny Rosenkranz is an Extension Educator with Maryland Cooperative Extension, University of Maryland, for Wicomico, Worcester and Somerset counties.*

## **Species Tulips**

Russell Balge

Among my favorite plants are the tulips, members of the genus *Tulipa*. It is the unhybridized, 'wild', or species tulips, most of them suitable for rock gardens, that fascinate me the most, and to which I dedicate much of my spring garden. I used to think that I had a pretty good handle on species tulips until I discovered John E. Bryan's epic two volume treatise, simply titled *Bulbs*. This book covers all manner of bulbs or bulbous plants including over 100 species of "wild" or species tulips.

The species tulips are divided into four classifications. The first three are those with the specific epithet *fosteriana*, *greigii*, and *kaufmanniana*. These species have been highly hybridized and each has many cultivars. The fourth class contains all of the other "Species and Variants". These are largely unhybridized and only a few have had cultivars selected out from the "wild" form.

Unfortunately, or fortunately, most of the species tulips are not readily available. Among those species tulips that are available at garden centers or through ordinary or connoisseur catalogs are the following:

- *T. accuminata*: yellow and red, 3-4-inch-long, twisted petals; flowering in April or early May; 18 inches tall; not found in wild; zones 6 to 8.
- *T. albertii*: flowers in April, orange-scarlet petals with yellow base, prominent dark purple anthers, 6 to 8 inches tall, zones 6 to 8.
- *T. alatica*: solitary cup-shaped flowers, petals pointed, deep yellow, exterior of petals strongly tinged green and

bronze, flowering in April, 10 to 12 inches tall, zones 3-8.

- *T. aucheriana*: 1 to 3 sweet-scented, flat-when-opened, star-shaped, pink with a yellow-brown blotched base flowers with distinct greenish-yellow stripe on outer segments; 5 inches tall, zones 4 to 8.

- *T. bakeri*: fairly large, rich-purple flowers with a yellow base; flowers in March; 4 to 6 inches tall; zones 5 to 9. Needs warmth to flower well. Must have dry period in late summer. 'Lilac Wonder' is excellent selection.

- *T. batalinii*: 4 to 6 inches tall, species has solitary buff-yellow flowers with gray blotch at base, leaves held in rosette, hardy zones 3 to 8. Several selections available: 'Apricot Jewel', apricot-orange exterior with golden-yellow interior; 'Bright Gem', sulfur-yellow flushed with orange; 'Bronze Charm', glowing bronze hue; 'Red Jewel', red flower remains closed in "picture perfect" tulip form; and 'Yellow Jewel', lemon-yellow with tinge of rose.

- *T. biflora*: smallest of all tulips at 3 inches tall, 1 to 5 small flowers per stem, white with yellow centered flowers open flat, outer segments stained green and crimson on their backs, zones 5 to 8.

- *T. celsiana*: clear yellow flowers with outer petals tinged bronze; sweetly scented; flat and star-shaped when open; 6 inches tall; produces 1 to 3 flowers per stem; flowers in May; zones 4 to 8.

- *T. chrysantha*: not found in wild, small yellow flower on slender stem, exterior of petals red, 6 to 8 inches tall, zones 3 to 9. Selection 'Tubergen's Gem' is larger flowered.

- *T. clusiana*: "Lady" or "Lipstick" tulip, inner petals white, outer petals white with broad crimson band from top to bottom, up to 12 inches tall or more, zones 3 to 9. Selection 'Cynthia' has cream colored flowers with a red outer side and a purple base to the petals.

- *T. eichleri*: solitary, bell-shaped, bright scarlet flower with yellow margin and black blotch; 8 to 10 inches tall; flowers in April; zones 3 to 8.

- *T. fosteriana*: seldom available; used extensively in hybridizing; 8 inches tall; flowers bright scarlet with black blotch which has yellow margin. 'Red Emperor' most well known cultivar.

- *T. greigii*: used extensively in hybridizing, many cultivars resemble true species, flowers solitary, cup-shaped, outer perianth segments recurved and reflexed, inner segments erect; species scarlet; 8 inches tall. Leaves of species and all cultivars distinctive, with purple-brown stripes or mottling.

- *T. hageri*: bell-shaped flowers copper to near scarlet on

interior with olive blotch, inner segments sometimes margined yellow, with green median stripe on backs, outer segments buff and green; up to 4 flowers per stem; zones 4 to 8.

- *T. humilis*: very variable, 4-inch-tall, solitary flowers, but most are a shocking violet pink with yellow base. Other flowers may be bright rose-pink or deep purple-violet. Blotches at base of perianth parts may be pink to purple, to black to yellow, and may be shades of blue. Popular cultivars are: 'Alba Coerrulea Oculata', white with deep-steel blue base; 'Lilliput', cardinal-red with violet base and black anthers; 'Odalisque', spirea-red outer petals frosted with silvery glow, inner petals beet-root purple, outer base striped green, and a large yellow inner base; 'Persian Pearl', magenta-rose exterior with greenish tint, inside cyclamen-purple, buttercup-yellow base; and 'Violacea', purple-red petals with lower segments greenish tinged. Hardy from zones 4 to 8.

- *T. kaufmanniana*: waterlily tulip, used extensively in hybridizing. Characterized by solitary flowers that open into a wide, flat, star shape. Foliage may be mottled. Flowers are 6 to 8 inches tall, while foliage is only 3 inches tall. Inner flower color may be white, cream, or pale yellow, while outer segments are red-streaked.

- *T. linifolia*: narrow undulating, almost grass-like red-margined leaves held in rosette, scarlet-red flowers with recurved petals, 4 to 6 inches tall, zones 4 to 8.

- *T. marjoletti*: soft primrose-yellow flowers when opening, turning creamy-white with cerise edge to petals, whole flower turns rosy with age, zones 3 to 8.

- *T. maximowiczii*: similar to *T. linifolia*, but leaves upright instead of flat and 4-to 6-inch-tall flowers are lighter red with a deep blue center, smaller, and earlier than *T. linifolia*, zones 4 to 8.

- *T. neustruevae*: crocus-like deep-yellow flowers highlighted by greenish-brown bands, orange anthers, 4 inches tall, zones 4 to 8.

- *T. orphanidea*: bronze-orange inner petals of star-shaped flowers green and purple shaded on exterior, petals droop with age, one, but sometimes two flowers per stem, 8 to 10 inches tall, zones 5 to 8. *T. orphanidea flava* has medium-sized, barium-yellow flowers tinged orange and green.

- *T. ostrowskiana*: variable species, usually soft yellow inner petals with broad carmine stripe on outer petals. Wavy-margined stemless leaves. One or two flowers per stem. Zones 3 to 8.

- *T. polychroma*: sometimes confused with *T. biflora*, white cup-shaped blooms touched with violet on outer petals, opens to reveal golden-yellow base and yellow anthers, produces up to 5 flowers per stem, 4 inches tall, zones 4 to 8.

- *T. praestans*: up to 16 inches tall with as many as 4 cup-shaped dark red flowers per stem, zones 4 to 8. Several improved cultivars: 'Fusilier', 10 inches tall, bright red, 5 blooms per stem; 'Tubergen's', 10 inches tall, scarlet-orange, early flowering, 2 to 3 flowers per stem; 'Zwanenberg', 12 inches tall, flowers deep crimson-red, many flowers per stem, petal segments long and pointed; 'Unicum', 2 to 5 red flowers per stem, each with blue-black anthers and small yellow base, foliage variegated white.

- *T. saxatilis*: 1 to 3 cup-shaped pale lilac flowers per stem with yellow blotch, 6 to 8 inches in height, needs sun and excellent drainage, multiplies by stolons, zones 5 to 10.

- *T. sylvestris*: 1 to 2 sweetly scented, yellow flowers per stem with hint of green on outer petals, petals curl, flowers pendant in bud, mature flowers upright, 10 to 12 inches tall, zones 4 to 10.

- *T. tarda*: bulb produces stolon, making species ideal for naturalizing, acts as ground cover, 1 to 6 star-shaped flowers with yellow base and white upper one-fourth per stem, ground-hugging 4 to 6 inches tall, rosette of narrow folded leaves lasts well into late spring, zones 3 to 8.

- *T. turkestanica*: white outer petals are orange in center, one to 7 flowers per stem, very robust, flowers as early as February, 8 to 10 inches tall, zones 4 to 8.

- *T. uremiensis*: 4 to 6 inches tall, 3 to 5 flowers per stem, flowers golden yellow tinged bronze, green, and red, pointed star-like flowers rest on rosette of linear leaves, zones 4 to 8.

- *T. vvednskyi*: bright orange to scarlet flowers with black center, 8 to 10 inches tall, foliage silvery blue-green, zones 5 to 8. 'Tangerine Beauty' is a selection with a fiery-red exterior with Spanish –orange flames. Inside is capsicum –red with yellow basal blotches.

- *T. whitallii*: bright orange to scarlet flowers with black center, backs of outer petals flushed green and buff, zones 5 to 8.

- *T. wilsoniana*: 3 to 4 inches tall, deep vermilion-red flowers with pointed outer petals, solid black base, yellow stamens, leaves wavy-margined and stained



red on outside, zones 5 to 8.

*Russell Balge is a regional specialist at the Western Maryland Research and Education Center, University of Maryland, in Keedysville, Maryland.*

### **Production/Postproduction Factors For Araucaria**

Thomas M. Blessington, David L. Clement, Rondalyn Reeser, Sarah Tater, and Susan M. Tater

### **Introduction**

C Scientific name: *Araucaria heterophylla*

C Common name: Norfolk Island Pine

C Native to Norfolk Island in the Pacific

C Often grows near the coast and is salt tolerant

C Not a real pine

C In its native habitat it can reach up to 200 feet, in Florida and California it is usually less than 100 feet

C Gymnosperm, bears cones

C Grown as a single stem or with 3 plants per pot

C Can be decorated as a miniature Christmas tree

### **Growth and Development**

C Grows naturally in full sun but better color develops under less light

C Optimum light levels are 4,000 to 8,000 footcandles (fc)

C When grown under less light (< 4,000 fc) plants become stretched

C Higher light levels (> 8,000 fc) result in pale growth

C For best results grow plants under higher end of light range when plants are young and then finish them under shade to produce compact, dark green plants

C Prefer pH of 5.5 but tolerate pH to 4.5

C Heat tolerant

C Minimum temperature is above 40°F

C Apply 200 ppm N at each irrigation from a fertilizer source of 20-10-20 or a slow release fertilizer

C Avoid applying high rate of slow release fertilizer on young plants

- C Have weak root systems when young so apply extra phosphorus to encourage root development
  - Incorporate superphosphate 0-20-0 into media at a rate of 5 lbs. per cubic yard (other sources include diammonium or monoammonium phosphate) or apply a complete fertilizer throughout production

### C Nutrient deficiencies:

- Iron: leaf tips turn yellow
- Copper: leaves are deformed, growing tip becomes malformed or distorted

### Propagation

- C Grown from seed or from 2-8 inch cuttings during summer
- C Seeds are collected from large green female pine cones
- C Plant seeds promptly in moist soil
- C Seedlings emerge in 2-3 weeks
- C About 5-10% of seedlings may be albino and are usually culled
- C Repot seedlings into larger pots often to avoid injuring the fast growing tap root

### Disorders

#### C Common problems

- High temperatures (95-105E F)
  - @ Symptoms: damage to growing tip, leaf tip becomes necrotic
- Temperatures below freezing:
  - @ Symptoms: shoot tip abortion may occur
  - Seedlings left in flats too long before transplanting
  - @ Symptoms: tap root becomes distorted, stem curves
  - @ Plants may be staked

#### C Diseases

- Biggest problem is *Colletotrichum*, needle necrosis
  - @ Symptoms: needle tips turn dark brown or

black with fruiting bodies

- @ Increased spread of disease under wet conditions
- *Pythium* can become a problem
  - @ Symptoms: roots are mushy and discolored, outer coating comes off easily, plants wilt even if soil is moist
  - @ Norfolk pines usually have a few white roots but the rest are mostly brown
  - @ Do not confuse the normally brown roots with disease symptoms
  - @ Allow media to dry between waterings

### C Pests

- Insect problems not common
- Mites prefer hot, dry conditions
  - @ Symptoms: chlorosis of the needles and the growing tip on the apical shoot
- Mealybugs appear as cottony, segmented insects
- Scale insect, *Oceanaspidotus araucarie* are also occasionally a problem

### Consumer Care

- C Generally doesn't drop leaves when stressed
- C Survive in minimum 100 fc, best quality should have at least 200 fc
- C Avoid excessive fertilizing to prevent leggy growth
- C Allow media to dry in between waterings
- C Species and cultivars:
  - *Araucaria heterophylla*: no named varieties, used in landscapes in zone 10
  - *A. columnaris*: when mature has darker foliage and closer tiers of branches

*Thomas M. Blessington and David L. Clement are regional specialists and Rondalyn Reeser, Sarah Tatar and Susan Tater are technicians at the Central Maryland Research and Education Center, University of Maryland, in Ellicott City, Maryland.*

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## Calendar of Events

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**October 24, 2000**

**MGGA Conference on Nutrient Management**

**Location:** Montgomery College, Germantown, MD

**Contact:** Hank Doong, 301-249-1700

**November 30, 2000**

**Introductory Greenhouse Conference**

**Location:** Prince Frederick Holiday Inn

**Contact:** Suzanne Klick, 301-596-9413

**December 19, 2000**

**Pest Management Conference for Recertification**

**Location:** Montgomery College, Germantown, MD

**Contact:** Suzanne Klick, 301-596-9413

**January 8-12, 2001**

**Advanced Landscape IPM PHC Short Course**

**Location:** University of Maryland, College Park, MD

**Contact:** Debbie Wilhoit, 301-405-3913

**January 31, 2001**

**FALCAN Conference**

**Location:** Urbana Firehall, Urbana, MD

**Contact:** John Bradshaw, 301-473-5678

**February 6, 2001**

**Central Maryland Recertification Conference**

**Location:** Timonium, MD

**Contact:** Russell Balge, 301-432-2767 ext. 311

**February 13, 2001**

**Eastern Shore Recertification Conference**

**Location:** TBA

**Contact:** Ginny Rosenkranz, 410-749-6141

**February 22, 2001**

**MGGA Greenhouse Conference**

**Location:** Martin's Crosswinds, Greenbelt, MD

**Contact:** Hank Doong, 301-249-1700

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