Q: What would you recommend as a good general herbicide for floating and submerged weeds in a pond?
A: Diquat and Aquathol are both recommended. I have not tried Aquathol, but have had good results with Diquat.

A: What turfgrass would you recommend for a low maintenance area where irrigation cannot be provided during drought periods?
A: Fine fescues are usually preferred in your area (northeast) although tall fescue also has good drought tolerance and will tolerate heat better than any of the other cool-season turfgrasses.

Q: What effect will Prime-a-Pell, a washing solution for buildings, have on plants? We maintain the plants around a building which is scheduled to be cleaned this summer.
A: I called Chemprobe Corp., manufacturers of the product, and was told that the petroleum-based solvents would have the same effect as gasoline. Their label states to protect plants and painted surfaces.

Q: How deep must a fill be before it will injure trees?
A: I would not attempt to even guess at a safe fill depth because of the number of variables that are involved in determining injury. Not only is the type and depth of soil important, but also the species, age, and condition of the trees.

Tree roots develop at certain depths in the soil because the oxygen level and other soil factors will support growth. If fill alters the soil environment, anaerobic conditions may result in root injury or death. Clay soils have the greatest potential for injury and reportedly have resulted in the death of sensitive trees at a fill depth of one inch.

Q: Which ground covers are recommended for areas too shady to grow turfgrass in the northeastern area?
A: English ivy (Hedera helix), periwinkle (Vinca minor), wintercreeper (Euonymus fortunei), and Japanese spurge (Pachysandra terminalis) are recommended for shady areas.

Continues on page 64

HYDROSEEDING AND MULCHING EQUIPMENT
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At the heart of our labor-saving system is the Cushman 3- or 4-wheel Turf-Truckster® vehicle. Powered by a rugged, air-cooled 18-hp OMC engine, the Turf-Truckster moves people, tools and equipment quickly and economically. And recent improvements help this year's Turf-Truckster deliver 50% greater payload capacity.

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The Greensaver teams up with either the 3- or 4-wheel Turf-Truckster to aerate greens, tees or other turf areas up to 10 times faster than walk-type units.

Choose the drum best-suited to your turf: 1/2" coring tines, 9/16" coring tines or slicing tines—all interchangeable within the system. What's more, both coring drums collect cores as you aerate, or remove the side plates and return the cores to the turf to be broken up as top dressing.

TOP DRESSER

Compared to self-powered or walk-type top dressers, this unit quickly pays for itself in saved manhours. A rubber fabric moving bed and rotating brush are matched to the vehicle's ground speed governor for an evenly spread 31½" swath. The clutch control, to engage spreader, is conveniently located to be operated from the driver's seat. And the hopper holds up to 1,000 pounds of material from rock salt to powdered fertilizer.

SPRAYER

Outfitted with optional 15' boom and handgun, this attachment is ideal for spraying greens, trees, bushes or roughs quickly and accurately. Powered by the Turf-Truckster vehicle's optional PTO, and equipped with ground speed governor, calibration is easy and thorough. And a big-capacity 100-gallon polyethylene tank means fewer stops for refilling.
your work force rising costs.

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With its 46" swath, this attachment earns its name by finishing big aerating jobs fast. By hydraulically lifting it into transport position from the driver's seat (optional hydraulic system and dump set required), you can move quickly from job to job, too. Choose from three tine styles: slicing, coring (2 sizes) and open spoon.

**POWER CONVERTER**
The Cushman Power Converter is an inexpensive way to turn your Turf-Truckster into a mobile power plant for electric tools, floodlights ... anything with a universal motor that draws up to 12 amperes at 120 volts DC. So instead of bringing small repair jobs back to the shop, your crew can handle them in the field. That can be a powerful advantage over the course of a season.

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Mounted on the optional Short Box or Flatbed/Box, its cyclone action broadcasts as much as 300 pounds of seed, fertilizer or other material over a 40' wide area. The Spreader/Seeder is powered by the Turf-Truckster vehicle's optional PTO with extension shaft. And the controls are operated from the driver's seat.

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Vegetation Management

from page 61

Q: What material can be used as a mosquito repellent on humans?
A: Commercial preparations containing diethyl-m-toluamide, diethyl phthalate, or diethyl carbate are the most effective. Outer garments can be treated with a preparation of one ounce benzyl benzoate (from drug store) to three pints water. Saturate all parts of the clothing, wring lightly, and dry thoroughly before wearing.

Q: What is the best way my men can tell nimblewill from bentgrass in clients' lawns?
A: Both nimblewill and the bentgrasses have a membranous ligule. However, the ligule for nimblewill is short and jagged. Also, nimblewill has long hairs at the edges of the collar.

Q: I have noticed that Bordeaux is gradually being replaced by other fungicides in most disease recommendations. What does Bordeaux contain and is it losing its effectiveness?
A: Bordeaux mixture is a mixture of copper sulfate and hydrated lime in water. The ratio is one pound copper sulfate, three pounds spray lime, 50 gallons water.

Bordeaux is available as a dry wettable powder and is more effective against many diseases but is being replaced with safer materials because of problems with plant injury and compatibility with other pesticides.

Q: What pre-emergent chemical can I use to control weeds in a bed that contains English ivy, pachysandra and myrtle?
A: The three ground covers you listed are tolerant to Betasan, Eptam and Ronstar.

Betasan is effective on annual grasses, especially crabgrass. Eptam will suppress nutsedge, quackgrass and certain broadleaf weeds, although it will not give as long-lasting control as many other herbicides. Ronstar will control many annual grasses and broadleaf weeds.

Read the labels for more specific information, including application instructions.

Send your question or comments to: Vegetation Management c/o WEEDS TREES & TURF, 9800 Detroit Ave., Cleveland, OH 44102. Leave at least two months for Roger Funk's response in this column.
The lindens (Tilia)—American, Little-Leaf, Silver, and Mongolian—are exciting as street, park, large area, or home landscape trees with each being outstanding when grown in optimal situations.

The native American Linden (Basswood) [Tilia americana] has a range from Alaska through the Great Plains of Canada, southward to North Carolina. It is found growing in many sites but prefers deep, rich, fertile soils with a relatively high percentage (35%) of silt and clay. Basswood thrives in full sun but will tolerate partial shade. It is resistant to drought and tolerates salt spray and chloride applications to the soil. The fast-growing tree reaches 70 to 90 feet in the landscape but can be found native over 100 feet in height. Its habit is pyramidal when young but becomes drooping and irregular with maturity. The 4 to 8 inch long coarsely serrated, somewhat heart-shaped leaves are bright green during the summer, usually turning brown in the fall with little or no effective fall color. Its pale yellow, fragrant flowers of mid-June can be quite effective visually and they have a sweet aroma.

Basswood (T. americana) propagates easily by seed when acid scarified for 15 minutes and stratified for three months. Further, we find this tree propagates quite easily by cuttage (softwood).

American Linden is a large-area (park or golf course) specimen tree. It is a good companion when used with grass or pachysandra. Junipers, which are too aggressive for the American and Little-Leaf Linden, often lead to premature defoliation and/or death of these lindens.

Their diseases are minimal but anthracnose caused by Gnomonia tiliae often causes defoliation in late season under a moist condition. Lawn mower disease (basal hits) is most significant and heartwood rot is common. This tree is a poor compartmentalizer; thus, only small branches can be pruned off because large-branch pruning results in heartwood decay. Insects that top the pest list include aphids and mites. These sucking insects can become numerous during late summer, secreting a honeydew that produces a black, sooty mold on the foliage. Control is appropriate only when defoliation seems to be a problem.

The only cultivar of American Linden is 'Redmond' (T. americana 'Redmond'). Although often listed as a cultivar of Crimean Linden, C. Lewis has suggested it would more appropriately be listed as a cultivar of American Linden. I feel that the habit of growth is more characteristic of American Linden. It is a good street tree and grows extremely well in the largest cities of Michigan. 'Redmond' Linden grows aggressively and tolerates chlorides (sodium and calcium chloride), compacted soils, and urban stresses, making it outstanding as a street tree in areas with a large out-lawn. Longevity of this tree — more than 40 years — presently seems acceptable.
Lindens from page 65

has been reported fast growing with good wide angle crotches. It seems to be the outstanding urban cultivar of Little-Leaf Linden in central and northern Michigan.

‘Rancho’ (T. cordata ‘Rancho’) is a small, upright oval in habit with small, glossy leaves but often doesn’t develop fall color. It displays the finest texture of the Little-Leaf Linden cultivars.

Presently, Little-Leaf Linden cultivars are propagated by graftage or budding, but we have shown they can easily be propagated by cuttage (softwoods). I believe propagation by cuttage is the way many cultivars will be grown in the future. In fact, this should eliminate the graft incompatibility which has been showing up with increased frequency.

Silver Linden (T. tomentosa) should be used more often. Its habit is similar to Little-Leaf Linden, becoming an upright oval 70 feet high at maturity. The leaves are 2 to 4 inches long and doubly serrated. The upper leaf surface is a dark green and the lower surface is a silver-green. When the wind blows, this tree gives one the feeling of Quaking Aspen. Because of the large leaf size, Silver Linden is coarser in texture than Little-Leaf Linden but exciting as a change of pace in the landscape. It is a good street or specimen park tree. It is reported by Dirr and Lewis to be drought tolerant. Silver Linden is perfectly hardy in Chicago, central and southern Michigan, throughout much of Ohio, and the East Coast, but for latitudes north of Gaylord, MI, it should not be considered. Silver Linden makes a good companion with grass as well as many ground covers, preferring full sun and tolerating only partial shade. As it becomes more widely known and available in the trade, it should play an increasingly important role in our urban landscapes.

Mongolian Linden (T. mongolica) is a small tree which is somewhat pyramidal when young, almost pendulous at maturity, and rarely reaches over 30 feet in height. Its 1 to 3 inch deeply-cut, almost lobed leaf makes it unique among the lindens. It has a relatively fine texture, shows good tolerance to most urban conditions, and should be considered for small area-home landscapes. With its unique leaf character and habit, it should become one of our major new small trees.

The lindens are certainly an outstanding addition to our urban landscapes. American Linden and its cultivar distinguish themselves as large area or park trees; Little-Leaf Linden is outstanding as a street tree; Silver Linden fills in well as a street or park tree; and Mongolian Linden is ideal as a home or small area landscape tree. These trees fit a unique niche in poorly-drained, heavy-silty soils. They thrive even under droughty conditions, and tolerate salt, air pollutants, and compaction. They will become more widely used due to their tolerances and relative freedom from catastrophic diseases. Considering the low maintenance requirements, linden’s place of importance will increase. The one main precaution with linden is that they are poor compartmentalizers and lawn mower damage can easily result in heartwood or butt rot, but this is the main detractant of an otherwise outstanding group of urban trees.
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RAM I was found growing on the ninth putting green at Webhannet Golf Club in Maine. There it grew vigorously though consistently mowed at ¼”. It was selected by Mr. Ernest W. Brown, superintendent, in consultation with Alexander M. Radko, National Research Director, USGA Green Section. The original plant was submitted to Dr. C.R. Funk at Rutgers University for further evaluation and testing. University testing proved this new variety to have superior qualities.

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stitute (OPEI) asked that the new standard be based on an existing industry voluntary standard, but the CPSC denied the request. A primary part of OPEI’s argument was that the CPSC standard is a design, rather than performance, requirement.

The court did strike down one provision against which OPEI argued — the requirement for probing the discharge chute. The provision was backed up by only one injury incident in CPSC files.

GROUNDs

Grounds Mgmt. Society to meet in Kansas City

The Professional Grounds Management Society is holding its annual conference and trade show at the Hilton Plaza Inn, Kansas City, MO, on Nov. 3-4.

The Exhibit Hall will house the trade show and lounge area used for both coffee breaks and lunch. This will allow for full presentation of products to the grounds management industry. All lunches and coffee breaks will be held on the show floor.

For more information, contact Allan Shulder, PCMS, 7 Church Lane, Pikesville, MD 21208, 301/653-2742.

AQUATICS

Aquatic plant meeting updates weed controls

Talks on the white amur and hybrid grass carp, new chemical registrations for aquatic use, and mechanical treatments highlighted the annual meeting of the Aquatic Plant Management Society in Sarasota, FL.

Two hundred and thirty attended the July show which contained much discussion on biological factors for weed control, such as the white amur, sameodes moth, and a combination of insects and pathogens used to combat water hyacinth.

An update on Florida’s use of the hybrid white amur was given and Donna MacKenzie from Ontario, Canada, spoke about the integrated approach used in her area. Dr. Eldon Blancher presented a paper on the use of mathematical modeling for aquatic management. Dr. M.J. Allen from England spoke on cell membrane work as it relates to chemical control.

Nelson Virden was elected president of the society for the coming year. He is owner of Virden Weed Control Service in Jackson, MS. Other officers elected were: Roy Clark, president-elect; Emory McKeithen, vice president; William Rushing, treasurer; William Haller, editor; and T.W. Miller, secretary.

PLANTS

Tissue culture is topic for October symposium

A symposium, “Propagation of Higher Plants through Tissue Culture”, has been scheduled for the University of Tennessee, Knoxville, for October 12-15.

For more information, contact Dr. Karen Hughes, Department of Botany, University of Tennessee, Knoxville, TN 37916 (615/974-2256).
Planting auger adapts in minutes to chain saw powerhead of 1.8 cubic inches or larger. International Reforestation Suppliers has built a lightweight auger for use by one person. The rugged piece of equipment is available with 4- or 6-inch-diameter augers with carbide flighting and cutting edge.

Model 35 drinking fountain, constructed of 10-gauge rolled steel and a green or bronzetone scratch-resistant epoxy finish, protects against vandalism. The Western Drinking Fountains product is guarded by 1/4-inch plate steel, and the push button valve is recessed within the pedestal to further protect it. The 36-inch fountain suits playgrounds, parks, golf courses, and other areas.

The Bradco Skid-Hoe from American Trencher, Inc. allows the operator to dig trenches 6 feet, 6 inches deep and 36 inches wide. It attaches to the bucket quick attach system of most skid-steer loaders. It is available in two models: a 6 foot, 6 inch digging depth unit for skid-steer loaders 30 horsepower and over, and a 5 foot, 8 inch digging depth unit for under 30 horsepower loaders.

An electronic instrument, the DMI-Surveyor model IIS, measures linear distance or rate of motion while a vehicle is in operation. It easily attaches to a car, truck, tractor, motorcycle, or any ground vehicle. With an accuracy of 99 percent, it measures land parcels to figure requirements of seed, fertilizer, insecticides-pesticides, water, and other calculated factors. It gives a constant read-out of the current distances traveled, area covered, or the current rate of motion at all speeds from 0 to 100 mph. Distance Measurement Instruments, Inc. makes it.

The Morbark EEGER BEEVER will chip brush, sawmill slabs and edgings, Christmas trees, dry material and most other disposable wood products.

The weed killer is applied to the ground by the ribbed roller right alongside borders with no possibility of drift onto shrubs and flowers. There is no waste. The herbicide is applied evenly and exactly where you want it. Models from 18" to 36" wide; 1 1/2 to 6.6 gallons

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Why? Because Sky-Worker can prove cost-savings up to 50% through utilization of its built-in sturdy features and superior maneuverability.

Platform stays level under all conditions • dual controls operate unit from work platform or vehicle deck • Fail-safe hydraulic system, combined with optional heat-exchanger requires little warm-up time. Lower boom on Model 1035 moves through overhead arc of 135° degrees • 45 degrees past vertical • horizontal rotation is 400 degrees, 40 degrees beyond full circle.

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A one-step lawn mat, called Roll 'n Grow Lawns, applies grass seed, fertilizer, and straw mulch to provide a new turf. Action Lawns, Inc., the manufacturer, chops straw into short lengths and bonds it together with grass seed and starter fertilizer into either a 2 by 25 foot or 4 by 25 foot mat approximately ¼-inch thick. Seed mixes can be made to meet specific site needs.

When the mats are laid down on a prepared surface and watered, a bonding agent releases and helps bond the mat to the prepared surface. The straw protects the seed during germination and establishment and eventually breaks down to provide organic matter to the soil. The bonding agent deteriorates as the grass seeds take root.

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A 1½-inch plastic valve from WeatherMatic's 11024 Series is ideal for use in all types of sprinkler installations and water supplies. Low pressure loss helps efficiency. A brass flow control is standard. The glass-filled nylon body resists chemicals in the soil. Flexing inlet orifice in the diaphragm resists clogging and mineral build-up. Stainless steel cover bolts have mating brass body inserts for ease of reassembly.

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To prepare seedbeds and incorporate chemicals, Bush Hog's Model 1440 tandem disc harrow comes in over 100 variations to work most soils. Gang angles of 20 degrees front and 18 degrees rear with blade spacing of 7½ inches, 9 inches, or a combination of both, pulverize soil and level fields. Wings flex nine degrees up and down for thorough plowing on uneven ground. Spring-loaded balkbuster (center tooth) with 10-inch sweep levels any ridge left in the center by the front gangs to insure smooth, well-worked fields. Three hydraulic cylinders control depth and wing folding.

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