

Down the Garden Path



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Plant & Pest Diagnostic Laboratory

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THE GRAPE VINE

Hints for Establishing and Maintaining an Ornamental Pool

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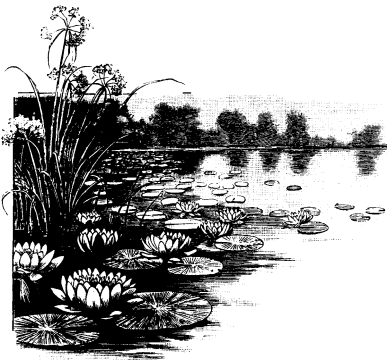
THE GRAPE VINE

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PUZZLE MANIA



Last summer I recall attending a seminar on ornamental pools offered by one of our local garden shops. I was amazed to find myself in a group of almost 50 people wanting to learn about how to establish ponds and care for them. The interest in constructing a natural, plant and fish-filled ornamental pool, even in small backyards, is definitely on the upswing. The aesthetic appeal can be tremendous, and the addition of a fountain or trickle to create the soothing sound of running water is very appealing to many of us in this stress-filled world!

What are some of the steps a home owner must take to have a successful ornamental pool? The best way to get started is to attend a workshop such as I did in order to learn some of the fundamentals. Many of these garden shops will distribute their own literature or literature from manufacturers of pool products. In addition, there are many excellent books on the subject, some of which, such as those put out by Sunset Gardens and Ortho Books, can often be found at a garden shop without having to go to a bookstore.

Most ornamental pools will be lined. That is, after digging the pool, leveling it, and contouring it, the pool will be lined, first with sand or some other soft material, and then with a heavy plastic liner. The sand is used to protect the liner from rocks, tree roots, or any other sharp object that might tear the plastic liner. The plastic liner seals off the water from the underlying sediment. This is important because sediment can contribute nutrients, which can stimulate the growth of unwanted algal blooms. Sediment that is disturbed, perhaps by fish activity, can cause the water to become murky or turbid. Finally, having a plastic barrier will prevent the establishment of unwanted or weedy plants in the pool. The only plants that will grow will be the ones that you plant.

Plants for pond sites should be purchased from garden shops or catalogs. Although plants can be collected from the wild, their identification may be difficult. Some plants, such as purple loosestrife and Eurasian watermilfoil, are extremely weedy, and even if they are planted in containers, they may take root in other plantings or escape to other sites and cause problems for your neighbors or adjacent wetland areas.

Plants are potted in containers. Plastic tubs will do, but some plant suppliers sell their own specially-made containers. Use a heavy garden soil. Peat and humus-enriched soils are not necessary nor are the garden mixes available in garden supply shops. Place fertilizer in the soil toward the bottom of the container, fill the remainder with soil, and then plant. Layer the top of the soil with pea gravel or coarse sand to prevent movement of soil into the water. Then place the plant at the appropriate depth in the pond.



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There are four major classes of aquatic plants for ponds. They each play an important role in the life of a pond.

1) Emergent or shoreline plants, like cattails, rushes, sedges, water iris, arrowheads, and pickerelweed should be planted in the shallowest part of the pond. They provide shade along the edge of a pond and are good habitat for birds, frogs and other wildlife.

2) Floating-leaved plants such as water lilies are extremely important components of a pond. They provide most of the shading for the surface of a pond, which is necessary to cut down on algal growth. Approximately one-third to two-thirds of the pool's surface should be covered with these plants. Water lilies (and their relatives such as water lotus) should be planted in water that is approximately two feet deep.

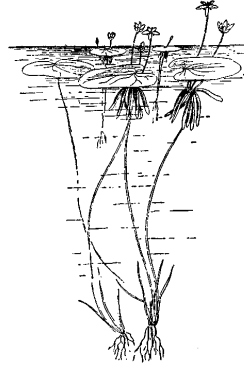
3) Free-floating plants such as water hyacinth and water lettuce have extensive root systems that hang down into the water. These plants are good competitors with algae for nutrients. They also provide shading. Neither water hyacinth or water lettuce are natives to the midwest, and they cannot tolerate our cold winters. Therefore, they must be brought indoors during the winter or repurchased each spring. Another type of free-floating plant is duckweed. This plant can be purchased or collected, but its value is questionable. Duckweeds are very small plants (each plant is about an one-eighth of an inch long), and they can easily spread and completely cover a pond, thus preventing the movement of oxygen into the pond that is necessary for fish life. Because they are so small, the duckweeds are much more difficult to remove than are larger plants such as water hyacinth.

4) Submersed or underwater plants are seldom grown for their beauty, although they can make interesting patterns under the water surface. Their primary role is to provide oxygen for the animal life and to remove carbon dioxide and nutrients that might otherwise be used by algae. Some submersed plants include elodea, bladderwort, dwarf sagittaria, and milfoils (but not Eurasian watermilfoil). They should be planted in containers with a higher percentage of sand or gravel than the other types of plants. In addition, the soil should not be fertilized. This forces the plants to obtain their nutrients from the water. The rule of thumb to determine how many plants are necessary for a pond is one plant for every one to two square feet of pond surface. They should be planted several bunches to a container, which then can be lowered to the deeper parts of the pool.

Fish can be introduced into the pool about two to three weeks after planting. The fish must be acclimatized to the water temperature of the pool by floating them in a plastic bag on the water surface until the water temperature in the bag is the same as that in the pool.

Constructing and planting a pool correctly help to maintain a natural balance between the plant and animal life. Under ideal situations, the plants provide the oxygen that the fish need and the fish provide the carbon dioxide that the plants need for photosynthesis. Sometimes, however, a pond can become unbalanced and suffer from an excess of algal growth. Here are some hints for reducing unwanted algae:

1) During the construction of the pond, make sure it is situated so that it does not receive runoff from surrounding areas. Runoff can contain fertilizers that will stimulate algae growth.



2) In a newly established pond, it may take awhile for the plant life to grow enough to become competitive with algae. Be patient and let the plants grow and do their job.

3) Reanalyze the amount of shading and oxygenating plants in your pool. Add more if necessary.

4) Do not use liquid fertilizer to fertilize potted plants. Use a granular fertilizer that can be pushed down into the soil in the container. Waterlilies should be fertilized every two weeks for best growth.

5) Keep the fish population low. Fish wastes add nutrients to the water. Feed fish only what they will eat in five minutes. After the pool has become well established, the fish should have plenty of natural foods to eat without adding more food.

6) Freshwater mussels and water fleas (*Daphnia*) can eat microscopic algae that color the water green. Filamentous, mat-forming algae can be consumed by snails. Consult your garden supply or aquarium store for the best species and stocking density.

7) Most filters do not remove algae. Their primary purpose is to remove large debris. Decomposing materials in the filters will release nutrients that can be used by algae. Therefore, clean the filters frequently.

8) Remove visible, mat-forming algae by hand.

9) Do not use algicides or other chemicals to control the algae. They provide only temporary relief. The best solution is to continue to work towards a natural balance in the pond.

One last thought: pools provide ideal sites for the development of mosquito larvae. Goldfish are not very efficient at eating mosquito larvae. Purchase some top-feeding minnows; they will effectively remove these nuisance insects.

An ornamental pool, if constructed and maintained properly, can add a lot to the aesthetic value of a home. Enjoy your pool! ☺

Catalogs For Ornamental Aquatic Plants

Lilypons Water Gardens
P.O. Box 10
Buckeystown, MD 21717
Phone: 1-800-999-LILY

Paradise Water Gardens
14 May Street
Whitman, MA 02382
Phone: 617-447-4711 or 447-8595
FAX: 1-800-966-4591

Perry's Water Gardens
191 Leatherman Gap Road
Franklin, NC 28734
Phone: 1-800-lilypad
FAX: 704-369-2050

Slocum Water Gardens
1101 Cypress Gardens Blvd.
Winter Haven, FL 33884-1932
Phone: 813-293-7151
FAX: 813-299-1896

Van Ness Water Gardens
2460 N. Euclid Avenue
Upland, CA 91786-1199
Phone: 1-800-205-2425
FAX: 909-949-7217
e-mail: c.hayes@ix.netcom.com

Waterford Gardens
74E Allendale Road
Saddle River, NJ 07548
Phone: 201-327-0721
FAX: 201-327-0684

William Tricker, Inc.
7125 Tanglewood Dr.
Independence, OH 44131
Phone: 1-800-524-3492
FAX: 216-524-6688 ☺

YARD

White Grub Alert???

Tim Gibb, Extension Entomologist

Nearly every year at this time, we receive dozens of calls from homeowners who have been told by various sources that Purdue University has released a "White Grub Alert". The essence of this alert is supposed to be something to the effect that this year is going to produce a record number of white grubs and that all turfgrass in the state not immediately treated with an insecticide will be damaged. **THIS IS SIMPLY NOT TRUE!** Neither the turfgrass specialists in the Department of Agronomy nor the Department of Entomology have ever released such warnings.

The reason that we do not release such alerts is that we can not predict the weather through late August and September which is the main determinant of turf damage from white grubs. A dry August and September usually translates into extensive grub damage because grubs feed on roots, reducing water uptake by grass plants, thus exaggerating the stress of dry weather. Small numbers of white grubs can cause extensive damage in dry weather. Conversely, a wet August and September will allow the turfgrass to take up ample water in spite of moderate root feeding and even high numbers of white grubs may not cause noticeable damage.



Japanese beetles adults emerged this past week in central Indiana and adult populations are expected to be at the same levels as last year. This first emergence triggers the beginning of a long battle of keeping them from defoliating trees and ornamentals. It also triggers the beginning of the mating cycle which culminates in the deposition of eggs in the soil below the turfgrass. As the month of July progresses, Japanese beetles will be joined by masked chafers which also lay eggs in the turfgrass.

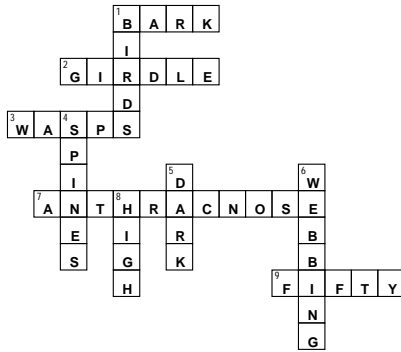
Together these two beetles pose the most serious insect related threat to turfgrasses in our area. Beginning in August the eggs will hatch and the resulting white grubs will begin feeding on turfgrass roots and causing serious turfgrass damage in some areas.

If grubs have been a perennial problem in an area, chemical controls containing Merit insecticide should be applied now. Remember that Merit is ineffective if applied later in August when white grubs are larger. In areas where turfgrass managers can afford to 'wait and see' what grub populations develop, they may be able to save themselves a lot of work as well as expense. If populations of white grubs become apparent during August, and turfgrass comes under moisture stresses, we recommend treating with any of several other chemical insecticides but NOT Merit (Merit is not as effective on mature white grubs). Remember to irrigate after application and to always use pesticides according to label directions.

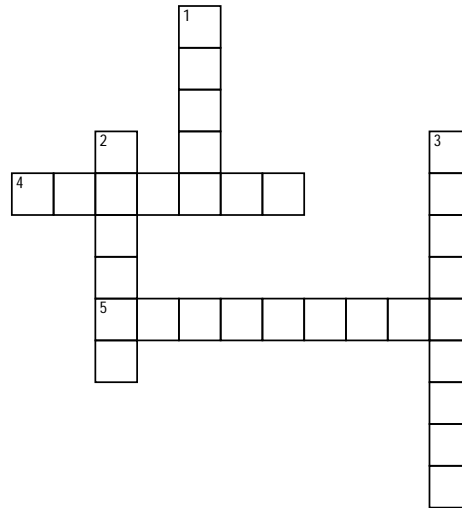
If you decide to try the 'wait and see' method, begin checking for white grubs during early August by digging into the top few inches of soil in numerous places around a turf area. Sift the soil between your fingers looking for small white grubs one-fourth to one-half inch long and one-eighth inch in diameter. Grubs are very small and tough to detect at this time of the year. If you find four to six grubs per square foot, consider applying an insecticide.

If you decide not to apply an insecticide, another option is to irrigate more frequently during August and September. Often the turfgrass will outgrow the grub feeding damage if no moisture stress is added. ☺

The answer to the puzzle from the last issue (No. 98) is shown below.



PUZZLE MANIA



Peggy Sellers, Editor
Janet Whaley, Subscriptions

Dan Childs, Weed Science
Corey Gerber, Entomology
Timothy Gibb, Entomology
B. Rosie Lerner, Horticulture
Karen Rane, Plant Pathology
Zac Reicher, Turfgrass Agronomy
Gail Ruhl, Plant Pathology
Cliff Sadof, Entomology

Across

- 4 masked _____ and Japanese beetles lay eggs in turf
- 5 a dry August and September usually translates into this type of grub damage

Down

- 1 most filters do not remove these
- 2 use this type of soil to plant aquatic plants
- 3 these plants' primary role is to provide oxygen and remove carbon dioxide

Down the Garden Path is published 17 times a year by the Plant and Pest Diagnostic Laboratory. For subscription information and comments, write to:

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