



# Hort Notes

An educational newsletter with research-based information for businesses and individuals involved in selling, planning, designing, servicing, and enjoying landscapes and gardens.

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**Volume 13, Number 1**  
**March 4, 2002**

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## Upcoming Events

*from UMass Extension's Landscape, Nursery and Urban Forestry Program*

**Community Tree Conference: The Changing Face of New England**  
**March 14** - UMass, Amherst

An introduction to some of the new challenges facing tree wardens, arborists, foresters, municipal planners, and other land managers. How we cope with pest problems and these new issues will determine the appearance of New England in the future. **Cost is \$45.** *Two pesticide contact hours for categories 29, 36 & comm. applicator license offered.*

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**Ecological Management Strategies for Weeds, Insects, and Diseases in the Landscape**  
**March 26** - Marlborough, MA

Learn about Integrated Pest Management concepts and optimizing the control of insects, diseases and weeds in the landscape using key cultural management strategies, less toxic chemical materials, and an understanding of the biology and stages of key pests. **Cost is \$75.** *Three pesticide contact hours for categories 29, 36 & comm. applicator license; two contact hours for cat. 37 offered.*

**To get a registration form:**

**Call** (413) 545-0895

**Fax** (413) 577-1620

**Online** [www.umassgreeninfo.org](http://www.umassgreeninfo.org)

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# **Managing Crabgrass Without Herbicides: What Changes in Management and Budget Need to be Considered? Part I**

Recently there has been an increase in the number of requests for crabgrass control strategies which do not use preemergence or postemergence herbicides. Unfortunately, there is no single, easily stated answer and a silver bullet does not currently exist. However, there are several components of a turf management program that can be adjusted to aid in the control of crabgrass. While implementing some of these management strategies will result in little change in the overall management system, others may result in appreciable changes in the budget due to additional labor, equipment and materials.

When exploring non-herbicidal management options for crabgrass, attention should be focused on implementing cultural practices that result in a healthy, dense turf. Successful execution of many of the commonly used cultural practices can significantly increase the inherent competitive nature of turfgrass and result in a decrease in the severity of many crabgrass infestations.

Crabgrass seeds require light for germination and establishment. **Increasing the mowing height** will result in a decrease in the amount of light reaching the soil surface and can reduce the germination and establishment of crabgrass. This is particularly important in the spring and early summer during the peak germination period of the species. Decreasing the height of cut and collecting clippings that contain seedheads during the late summer and early fall can be effective in reducing the amount of viable seed that is added to the seed bank.

Along with adjustments in mowing height, **fertility** can play a major role in the reduction of light that penetrates the turf canopy and reaches the soil surface. Fertilization programs should supply adequate nutrients to yield a dense turf. Avoid high levels of fertility during the summer months, although this may be difficult to accomplish with organic sources of nitrogen. If heavy infestations of crabgrass result in turf thinning, increase fertility levels in the fall as crabgrass dies in order to support turf recovery.

An effective **aeration** program will relieve compaction and increase overall turf health and density. However, aeration methods that bring soil to the surface can reposition crabgrass seed, which was once too deep to germinate, to a location where germination and establishment are favored.

Crabgrass and many other annual weeds are warm-season species. Warm-season species are capable of growing very well during the hot, dry periods that are characteristic of summer. Turfgrass species utilized in the northeast are cool-season species and, without adequate moisture from rainfall or irrigation, become dormant during the summer. During periods when the growth of cool-season turf species has slowed or ceased as a result of low soil moisture and high temperatures, crabgrass becomes very competitive in otherwise healthy, dense turf. In the absence of summer rainfall, **irrigation** should be applied to maintain turf growth and prevent summer dormancy. Special attention should be focused on areas that are prone to drought including elevated areas, south and southwest facing slopes and areas adjacent to sidewalks and driveways. These areas may be hand watered in lieu of running the

entire irrigation system.

Turf renovation carried out in the spring and early summer without the use of a preemergence herbicide fails more often than not due to annual grass pressure. This weed pressure is not present if turf establishment is initiated in the late summer and early fall. Crabgrass plants that germinate in new seedings at this time of the year seldom reach a size that deters establishment and will soon die with the onset of cold weather.

When planning turf establishment, choose species and cultivars that are best suited for site conditions and turf use. Aggressive cultivars should be considered. Encourage rapid establishment by providing adequate fertility at seeding, especially phosphorus. Maintain good soil moisture during the germination and early establishment period. Overseeding can be a valuable tool in restoring sites where turf thinning has resulted from insufficient crabgrass control. Openings in the turf as a result of insect damage, diseases and excessive wear are prone to weed growth. Overseeding should be used to repair this damage. The same recommendations for seed selection, fertility and soil moisture would pertain.

*Part II of this article will appear in the next issue of Hort Notes. Originally printed in Turf Notes, Vol. 10, #2 Winter 2001-2002.*

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## **Some Cutworm Caterpillars May Be Active In Winter**

Cutworm caterpillars belong to a rather large family of moths (Noctuidae) that are found throughout North America. Many of them are night feeders and, therefore, may not be readily seen. Yet, their injury is all too familiar to many a gardener when toppled plants, such as peppers and tomatoes, are found chewed off at the base of the stem. Other species are known as the climbing cutworms and can ascend landscape shrubs, at night, creating large ragged notches on the margins of the foliage which is sometimes mistakenly attributed to such pests as the black vine weevil (which makes much smaller marginal notches).

One of the truly unique aspects of a limited number of these cutworm species is that they can be found foraging during the winter months. These may even be seen moving across snow covered areas. These particular caterpillars contain a type of natural "anti-freeze" within their blood system (hemolymph) that keeps their blood from freezing, thus allowing them to be active. They are of little to no concern for the overall health of our landscape plants yet they remain an interesting curiosity of nature.

The cutworm species *Zanglognatha cruralis* Guenee is the one commonly found in the Northeast (Canada to North Carolina) and it has been reported as being active this year. Although not very common in Massachusetts, it is here and has been seen in Easthampton, Massachusetts in January of 2002. However, in New Brunswick, Canada, it is quite common. It feeds on mosses and dead leaves

but rarely on the foliage of living plants. There is mention in the literature that it may feed on the foliage of balsam fir but there is disagreement within the scientific community concerning this claim. This species is mostly seen as one of the earlier cutworm species to be active in the spring. Even during this time period its primary food source is listed as being dead leaves of trees.

*Information for this fact sheet obtained from Carol Lemmon, State Entomologist for Connecticut; Cornell Experiment Station Memoir 329 (WT Forbes: Lepidopterist of NY); and Charlie Burnham, Massachusetts Department of Environmental Management.*

*Bob Childs  
UMass Extension Entomologist*

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## Questions from You

*Q. How can one distinguish cold injury to plants from desiccation injury?*

A. A good review of the types of overwinter injury to plants was written by Tom Landis of the U.S. Forest Service in the Winter 2002 issue of *Forest Nursery Notes* (U.S. Dept. of Agriculture, Forest Service, P.O. Box 3623, Portland, OR 97208-3623). Much of the following information was developed from that article.

Cold injury affects plants that either lack hardiness or are not in a dormant state when exposed to freezing temperatures. Always, check the hardiness rating of the affected plant. Those that are marginally hardy to this region are good candidates for cold injury. Also, any plant that is not in a condition of physiological dormancy at the time of exposure to freezing temperatures is susceptible to cold injury. This may occur in fall if plants are not hardened, during winter months characterized by prolonged spells of mild weather, or in spring after growth has been initiated. Given the unseasonably mild conditions in New England through the fall and most of this winter, there is a good possibility of cold injury to plants this year. Container-grown plants stored in clear poly houses or unheated greenhouses are especially prone to cold injury because of heat buildup that occurs on sunny days. Proper venting can help reduce dramatic fluctuations in temperature.

Meristematic tissue is most affected by exposure to cold temperatures. That is, shoot tips, buds, and vascular cambium are the first to be killed by freezing temperatures. Roots are generally less hardy than vegetative shoots and are also prone to cold injury. This is important to keep in mind with respect to the overwintering of container-grown plants.

Symptoms of cold injury develop quickly, usually within a few weeks of exposure to freezing temperatures. According to Landis, "This characteristic helps distinguish cold injury from winter desiccation, which usually affects all exposed foliage and develops over a longer time period." With cold injury, it is not uncommon to see buds killed while the foliage of evergreen plants remains unaffected. The opposite is typically true with desiccation injury; that is, foliage will be damaged or

killed but buds will live and give rise to normal shoots during the spring flush of growth.

Cold injury to cambial tissue and roots is more difficult to detect. Symptoms may not appear until plants begin growth. “Cambial or root injury may be expressed as delayed bud break or foliar wilting after (plants) are returned to a growth-promoting environment,” writes Landis.

Winter desiccation is caused by plant exposure to the drying effects of sun and wind. Desiccation most commonly occurs when the ground is frozen but plants continue to lose moisture from their leaves via transpiration. This situation can occur with plants in landscapes, field nurseries, and with container-grown plants in winter storage. In landscapes and nurseries, plants in exposed sites with southern exposure are prone to desiccation. Container plants stored in poly houses are subject to desiccation injury but it is usually the plants at the periphery of the houses that are most likely to be damaged. Desiccation can also occur on evergreens in field nurseries and landscapes in late winter and early spring when there is snow cover over frozen soils. Sunlight - quite intense at that time of year - will be reflected off the snow and warm up foliage, leading to increased transpiration.

On plants suffering from “winter burn” or desiccation, leaves typically turn bright red and appear scorched. On needled evergreens, the tips of needles show the damage first. Although foliage is most noticeably affected, stem tissue may be damaged in extreme situations.

In contrast to desiccation injury, the leaves of plants exposed to cold injury will develop “pale, water-soaked tissue that eventually turns from straw-colored to brown or bright red, depending upon the (plant) species and degree of injury.” As previously mentioned, symptoms of cold injury appear more rapidly than those caused by desiccation.

*Q. Can plants be protected from cold injury and desiccation at this time of year?*

A. That’s a question that should have been asked in the fall. Nevertheless, there are some things that can be done now:

\* Storage structures, such as poly houses, should be well-ventilated on sunny days when temperature within the structures rises well above the freezing level.

\* Don’t uncover poly houses too soon and risk exposure of plants to hard freezes. If plants are already actively growing within their overwintering facility, the houses should not be uncovered until danger of frost is past. For plants that are still dormant, Mather (*The Buckeye*, Ohio Nursery and Landscape Assoc., January 2001) suggests, as a rule of thumb, removing the cover between 30 and 45 days prior to the average last frost date for your area.

\* Apply anti-desiccant sprays to the foliage of plants susceptible to “winter burn”, although the effectiveness of these sprays is still somewhat undecided.

\* Irrigate plants during prolonged mild spells if the soil and/or growing medium are not frozen.

*Ron Kujawski*

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