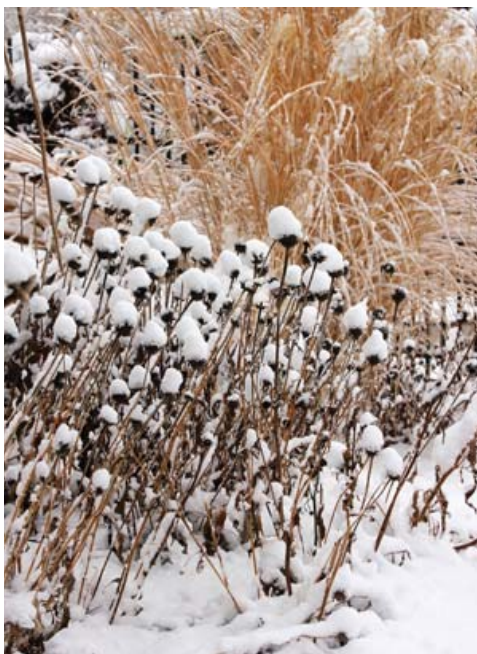


## Thinking Ahead:

### How to Optimize Next Season's Plant Health this Fall and Winter



**Gardening may be a distant memory in late fall and winter.**

Fall and winter are the times of year when outdoor gardening activities often become a distant memory. However even during the late fall and winter, there are basic outdoor gardening tasks that should be completed in order to prevent potential disease problems the following year.

#### Plant Debris Cleanup

Leaf diseases such as anthracnose (see UW Garden Facts XHT1001 – see below for link to Garden Facts), Tubakia leaf spot (see UW Garden Facts XHT1104), apple scab (see UW Garden Facts XHT1007a/b), and tar spot (see UW Garden Facts XHT1126) are prevalent on woody ornamentals anytime there is wet weather early in the growing season. Most fungal leaf pathogens overwinter in leaf litter, and thus leaf litter can serve as an important

source of fungal spores during the following growing season. In addition, herbaceous plant debris is an important overwintering site for herbaceous plant pathogens. Therefore, be sure to rake up tree and shrub leaves after they have fallen from woody ornamentals, and be sure to cut back and remove herbaceous plant debris after the vegetation has been killed by frost.



**Apple scab is one of many fungal diseases that can overwinter in infected leaf litter.**

There are many options for disposing of leaves and other plant debris. Many cities offer drop off sites for organic waste which is often eventually recycled by composting and then provided back to the community. Home composting is also an option for disposing of plant debris, even when that debris contains plant pathogens. The combination of heat and degradation of plant tissue provides an environment where most plant pathogens will not survive. Burying can also be a useful technique for disposing of leaf and herbaceous plant debris as long as there is a layer of soil separating the debris from the outside environment. Burying promotes decay of plant tissue, which, as mentioned above, tends to reduce the ability of plant pathogens to survive. In addition, a soil layer over plant debris provides a physical barrier that prevents spores that are produced by fungal pathogens from reaching new healthy plant tissue. Finally, where allowed, burning of plant debris can help in eliminating plant pathogens, although this technique can contribute to air pollution and thus is not the disposal method of choice.



**Leaves and other plant debris can be disposed of by composting.**



Late fall and winter are the best times to prune most woody ornamentals.

## Pruning

Late fall and winter are the best times to prune many woody ornamentals (see UW Garden Facts XHT1013, XHT1014 and XHT1015). Pruning during colder weather, when pathogens are less active, can help lessen the possibility that pruning wounds will become entry points for canker-causing fungi or bacteria, thus leading to a reduction in canker diseases that could potentially girdle and kill branches or even entire trees. Late fall and winter pruning of oak trees is critical in reducing the incidence of oak wilt (see UW Garden Facts X1075). If oak trees are pruned during the growing season, the sap from the resultant pruning wounds is attractive to sap beetles that can transmit the oak wilt fungus. Sap beetles are not active during colder weather and thus oak trees pruned in the late fall and winter cannot become inoculated via these beetles.



Oak trees should never be pruned during the growing season to prevent disease transmission.



Proper pruning can help reduce the likelihood of powdery mildew, a common fungal disease on lilacs and other plants.

Proper pruning of trees and shrubs can also be important in helping prevent foliar diseases. Pruning often opens up the canopy of trees and shrubs and allows for better air flow within a plant. During the growing season, the increased air flow will reduce the humidity around foliage and thus lead to more rapid drying of leaves. Lower humidity will reduce the likelihood that powdery mildew (see UW Garden Facts XHT1005a) will develop. In addition, many other foliar pathogens require long periods of "leaf wetness" (i.e., periods where there is a film of water on the leaf surface) for their spores to germinate and infect. Thus anything (including proper pruning) that shortens the length of time that leaves

stay wet is likely to reduce the severity of foliar diseases.

## Watering

Oftentimes in the late winter, or even into the spring, conifers begin to turn brown. This browning is a disorder called winter burn (see UW Garden Facts XHT1239). Winter burn results when conifers (especially yews) do not have enough internally stored water for their needs over the winter. As daytime temperatures become warmer in the late winter and early spring, conifer needles begin to naturally lose water (a process called transpiration) as they attempt to grow. During the summer, this lost water would be replaced by water taken up by the plant's root system. However, in the winter and early spring, soil temperatures are cold enough that the plant's root system is not functioning efficiently. Thus the amount



Winter burn of conifers occurs when the plants do not have enough water over the winter.

of water lost by needles is not replenished by the water taken up by the roots. As a consequence, the needles dehydrate and die.



**Water conifers well in fall to help prevent winter burn.**

The easiest way to prevent winter burn of conifers is to make sure evergreens are well watered into the fall. Established trees and shrubs need about one inch of water per week. If Mother Nature does not cooperate, then you should apply water at the drip line (i.e., the edge of where the branches extend) of any conifers (or more extensively if possible) using a soaker or drip hose. Conifers can be watered up until the time when the ground freezes or there is a significant snowfall.

With just a little effort in the late fall and winter, you can have a big impact on the health of landscape ornamentals next spring and summer. So get back into the gardening mode, and use the remaining snow-free days of this year to prepare your garden for a beautiful and healthy coming year.

– *Brian Hudelson, Director, Plant Disease Diagnostic Clinic, University of Wisconsin – Madison/Extension*

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### **Additional Information:**

- University of Wisconsin Garden Facts – available to download and print from the “Fact Sheets” section of the Plant Disease Diagnostics Clinic (PDDC) website at <http://pddc.wisc.edu>.
- Fall Garden Checklist – on the Iowa Gardener website at [http://www.theiowagardener.com/Fall\\_garden\\_checklist.html](http://www.theiowagardener.com/Fall_garden_checklist.html).
- Time for Fall Garden Clean Up – on the University of Illinois Extension website at [http://extension.illinois.edu/gardenerscorner/issue\\_01/fall\\_06\\_04.cfm](http://extension.illinois.edu/gardenerscorner/issue_01/fall_06_04.cfm)