

Imprelis: What You Don't Know Will Cost You

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Imprelis® herbicide has killed over a million trees in urban landscapes, parks and golf courses throughout the United States. Many golf course superintendents and managers are unaware of the long-term impact on their own courses. Damage caused to trees by the herbicide can be in the millions of dollars for just one 18-hole course. DuPont and its product distributors are assisting property managers with claims and are paying to replace trees that were killed or to 'treat' damaged.

DuPont contracted with tree care companies throughout the United States in fall of 2011 to evaluate trees on impacted properties. And, based on the replacement formula DuPont developed, have offered most claimants settlements based on that initial evaluation. For most properties, most with less than 5 trees, the settlements are very reasonable. However, as we discovered during the 2012 growing season, properties with large numbers of trees,

such as golf courses, stand to lose more



Figure #1: Dead tips on a Black Hills spruce (Picea abies 'Black Hills') impacted by the herbicide Imprelis®.

trees to the herbicide over time than those that were identified as damaged in fall of 2011.

Without a re-evaluation of trees inventoried by the DuPont contractors, golf courses could be short changed significantly by the proposed settlements.



Figure #2 Dead terminal buds on a Colorado blue spruce (Picea pungens) impacted by the herbicide.

What can golf courses do?

Step #1: Did we use Imprelis®?

Identify if your staff or a contractor used the Imprelis® herbicide in 2011. Imprelis® was only available in 2011 and was subsequently taken off the market. Your land care manager and any contractors your staff hire are required by law to list what herbicides are used where and at what time. Look through those records and see if Imprelis® is listed on any treatments. If it isn't breathe a sigh of relief.

If it is, identify the areas that were treated and plan to examine the trees and shrubs along the fairways and in any rough areas that may have been

treated. If you did use Imprelis® and also had a DuPont contractor evaluate your trees, plan to do a cursory re-evaluation. Carefully examine the trees on the original survey as well as trees in the same treated areas that may not have been listed by the contractors.

Step #2: What are we looking for?

Since it is winter don't bother with the deciduous trees (those with leaves), instead look at the conifers (spruce, pine and arborvitae) to see if there is damage. Most conifer damage occurs on new tissue at the end of the branch tips.



Figure #3: Fused needles on a Colorado blue spruce (Picea pungens) impacted by the herbicide Imprelis®.



On spruce (Colorado, Norway and Black Hills) the damage can range from entirely dead tips to just dead terminal buds. Also look for distorted, misshaped or otherwise abnormal needles and twigs. Needles fused together, twisting and curling of needles, along with tumor-like gall formations on twigs are three indicators of Imprelis® damage on spruce. (Figures 1-5 illustrate damage associated with Imprelis® on spruce.

Above: Figure #4: Twisted and curled needles on a Colorado blue spruce (Picea pungens) impacted by the herbicide Imprelis®.

Right: Figure #5: Twig tumors (galls) on a Black Hills spruce (Picea abies 'Black Hills') impacted by the herbicide Imprelis®.



Below: Figure #6: Distorted needles and dead terminal buds on a) Austrian pine (Pinus nigra), b) Ponderosa pine (Pinus ponderosa), c) Red pine (Pinus resinosa), d) Scots pine (Pinus sylvestris) and e) Eastern white pine (Pinus strobus) impacted by the herbicide Imprelis®.



On Austrian, Red, Scots and Ponderosa pine the most common symptoms are dead terminal buds and twisted and distorted needles. Arborvitae damage appears as distorted scales at the terminal end of the needles as well as reddening of the impacted tissues that eventually turns a grayish-tan color as it dies. (Figures 6-9 illustrate damage associated

with Imprelis® on pines and arborvitae.) The symptoms indicate that the trees were impacted by the herbicide. More thorough examinations in the spring will be necessary to determine the extent of the damage as well as whether or not the trees will survive or be permanently deformed.



Above: Figure #7: Close-up of distorted needles on Arborvitae (Thuja occidentalis) impacted by the herbicide Imprelis®.



Left: Figure #8: Close-up of reddening needles on Arborvitae (Thuja occidentalis) impacted by the herbicide Imprelis®.

Below: Figure #9: Close-up of dying needles on Arborvitae (Thuja occidentalis) impacted by the herbicide Imprelis®.

Step #3: How are we going to deal with this in 2013?

Develop a plan for evaluating the trees in 2013 and connect with your attorney to see what options are available for submitting a claim in 2013. If you've submitted claims, have your attorney negotiate with DuPont over adding trees or changing the status of



trees from the 2011 survey. Impacted properties have until December 31, 2013 to submit claims for damage due to the application of Imprelis® herbicide.

Keeping Track:

While the problems caused by the use of Imprelis® are massive, DuPont is negotiating in good faith with properties that were impacted by using the herbicide. Unfortunately, Since Imprelis® was a brand new product, neither DuPont nor the Universities or government agencies know how many years the damage to trees will continue. Developing an inventory of affected trees is the first step to making sure that every damaged tree is accounted for in any settlement and that each impacted tree can be monitored over the next several years to see if decline continues.

Inventories can range from hand drawn maps to computer generated maps with GPS coordinates. What golf courses can use is dependent on the size of the property, number of trees and labor available to assist with damaged tree identification. Photographs of damaged trees must also be included with the inventory. When claims are submitted photographic evidence is

required to support the addition of new trees to the surveys that were completed in fall 2011. In cases where tree decline has continued, DuPont may also choose to send their contractor to reevaluate the based upon the new reports that are submitted.

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