



Nursery Cooperative MANAGEMENT ALERT 2010 - 01

SANDBLASTING CAUSES HERBICIDE INJURY TO YOUNG GERMINANTS

Goal 2XL® has been used at many conifer nurseries and is also registered for use on deciduous trees. However, in some years, we have observed injury to germinants following sandblasting and rain-splash. In one study on loblolly pine seedbeds, we demonstrated the importance of using a soil stabilizer like Agrilock® (see Research Report 05-01). Without Agrilock® on beds and allyways (typically 40 to 55 gallons/acre), non-stabilized soil treated with oxyfluorfen can splash onto the stem (emergence and matchstick stage) and this can result in needle twisting and stem bending. A few seedlings are weakened and seed efficiency is reduced. Use of a soil stabilizer greatly reduces the risk of this type of injury.

High winds can blow Goal 2XL®-treated silt and sand and this not only abrades the stems but, depending on the stage of growth, it may also result in herbicide injury. This injury occurs within a day or two after the sandblasting (even though the herbicide treatment occurred 4 weeks earlier). GoalTender® is typically less phytotoxic to deciduous trees than Goal 2XL® when applied directly to young foliage. Some wonder if injury after sandblasting might be reduced when using GoalTender®.

The bed on the left was treated with 1 quart of Goal 2XL® in March while the bed on the right was not treated. There was no injury on Thursday, April 22 (high winds of 15 MPH). On Friday, thunderstorms occurred from 4 PM to 7 PM (high winds of 23 MPH; gusts of 29 MPH; rainfall 0.46 inches). More thunderstorms occurred on Saturday (5AM to 11AM) with rainfall amounts of 0.33 inches (high winds of 28 MPH; gusts of 36 MPH). Sunday was partly cloudy with high winds of 25 MPH and gusts of 33 MPH. Herbicide injury was noticed on Monday, April 26 (see photos below). Photo at right taken on May 6th.



Sawtooth oak, swamp chestnut oak, and persimmon were injured. Newly-emerged leaves were affected as well as some older-leaves (some exhibited a “lacing” effect). Injury to the larger seedlings was mostly “cosmetic” and many soon recovered from the event. Water tupelo had little injury (likely due to protection from a thicker epicuticular wax). Nursery managers should realize that both weather conditions and management practices can affect the risk of injury from Goal 2XL®. If weather conditions are favorable, no injury may be observed for years. However, the risk of herbicide injury increases after wind sandblasts young stems and foliage. The risk of injury can be reduced by using a soil stabilizer and some have speculated that applying GoalTender® can also reduce injury to seedlings.

