

LEAF ABNORMALITIES ON WHITE OAKS MAY BE LINKED TO DRIFT OF CHLOROACETAMIDE HERBICIDES. Jayesh B. Samtani, John B. Masiunas, and James E. Appleby, Graduate Research Assistant and Associate Professors, Department of Natural Resources and Environmental Sciences, University of Illinois at Urbana-Champaign, Urbana, IL 61801.

In some years, the emerging leaves of white oak trees in the Midwest develop abnormally, without interveinal tissues. This abnormality is referred to as tatters. Reports to State Foresters and Extension Specialists associated tatters with herbicide applications. The objective of our study was to determine if herbicide drift could cause tatters. Potted white oak seedlings 0.6 m in height were treated with 2,4-D (2-ethylhexyl ester), 2,4-D (2-ethylhexyl ester) + glyphosate, acetochlor + atrazine, dicamba, glyphosate and metolachlor at 1/4, 1/10 and 1/100 X of the standard field use rate. The seedlings were treated at three growth stages i) swollen bud, ii) leaves unfolding, and iii) expanded leaves. A compressed air spraying chamber with a moving 80015 EVS spray nozzle was used to apply the herbicides. Tatters were observed on 62 % of total white oaks treated with acetochlor + atrazine and 38 % of total white oaks treated with metolachlor when treated at the leaf unfolding stage. Leaf tatters did not occur on seedlings treated with acetochlor + atrazine or metolachlor at the other two growth stages, or on seedlings treated with other herbicides or the controls. A month and half after treatment with acetochlor + atrazine or metolachlor, oak seedlings produced a new flush of leaves which were unaffected by leaf tatters. The study indicates that tatters on white oaks, may be linked to drift of chloroacetamide herbicides when leaves are unfolding. The study will be repeated in 2005.