GIBBERELLIN SYNTHESIS INHIBITOR AFFECTS ANNUAL XYLEM PRODUCTION
AND VESSEL ELEMENT ANATOMY IN SOME TREES
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Red oak (*Quercus rubra* L.), white oak (*Quercus alba* L.), sweetgum
(*Liquidambar styraciflua* L.), and yellow poplar (*Liriodendron tulipifera* L.) were treated
with paclobutrazol using the soil drench method at a dose rate of 2 grams a.i. per
diameter inch. Five growing seasons after treatment, cross-sections of the trunk of trees
were removed. Total tree height, diameter growth of the trunk, the width of annual rings
of xylem, and the size and number of vessels in the earlywood were compared in
paclobutrazol treated and untreated trees. Tree height was reduced in all four species,
whereas diameter growth at 137 cm above ground-line (DBH) and annual ring width for
five growing seasons were reduced by 36 and 33 percent, respectively, only in white oak
and sweetgum trees treated with paclobutrazol. The cross-sectional area of individual
vessel elements also was reduced by paclobutrazol treatment only in white oak and
sweetgum. The number of vessels per unit area of xylem tissue was not affected by
treatment.