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Herbaceous Weed Control Checklist to Minimize Damage to Pine Seedlings

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INTRODUCTION

- When herbicides are applied properly (the labeled, most appropriate herbicide(s) at the right dosage and at the right timing), herbaceous weed control (HWC) during the first and/or second spring after planting (with pine response the most significant to HWC in the first growing season) can be beneficial to growth and survival on old-field, pasture, hayfield, and cut-over sites, particularly in droughty growing seasons.
- A four to six-foot-wide band is often as effective as a broadcast treatment, but banded treatments must be applied from the ground. Broadcast herbicide treatments are recommended on sites with heavy turf grass, invasive plant, or vine competition and may be performed aerially or from the ground.

CHECKLIST

Prior to applying a herbicide over newly planted loblolly, longleaf, or slash pine, consider the following factors to minimize seedling damage and maximize benefits:

- Make sure the herbicide or herbicide tank mix is labeled for overtop application for the planted pine species. For example; the herbicide purchaser and applicator need to look closely at the herbicide label to make sure that the product used is: (a) labeled for the particular use site (e.g. "for use in forest sites", "for use in conifer plantations", "tree plantations", etc.) (b) labeled for the pine crop species (or genus in some cases), and (c) labeled for the particular application ("herbaceous weed control in pine plantations", "herbaceous release", "established trees", etc.). Herbicide products, even those with the same trade name (such as "Roundup"), may have different amounts of the active ingredient per gallon, so always follow the rates specified on the label of the particular product being used.
- □ Apply herbicide(s) at or below the labeled application rate. Remember, specified rates are per acre treated, not for the total acres in the field. Determine the amount per SPRAYED acre. The application will be either (a) a broadcast treatment, meaning 100% of each acre will be sprayed (i.e. Bermudagrass field), or (b) the application is banded over the seedlings, often in a 4, 5 or 6-foot- wide swath. In the case of broadcast treatment, each acre will receive the full herbicide rate specified on the product label. In the case of a banded treatment, only a portion of the field acre is sprayed, so only a portion of the labeled rate is used. For example, the distance between pine rows is 12 feet and you plan to apply a 6-foot-wide band centered on the tree rows. In this case, one half of the acre will be sprayed (6 ft/12 ft). If the product label specifies 8 oz per acre of product for the pine species (using loblolly pine in this example) for the site's herbaceous weed conditions, then only one half of the 8 oz/ac product rate will be needed for each acre. In this example, to treat a 100-acre field using the banded application method at 8 oz of product per SPRAYED acre, you will need 400 oz of product ((100 acres total x 1/2 = 50 acres treated; 50 acres x 8 oz product = 400 oz (3 gallons and a pint)), whereas 800 oz would be needed for a broadcast application to the whole area since twice as much area (100% vs 50% coverage) is sprayed.





- There are generic brands for many herbicides labeled for use over loblolly, longleaf, and slash pine. Different product labels for the same active ingredient can, and often do, vary. Read the product labels to make sure that your intended use is consistent with labeling.
- □ Wait at least one month after planting for loblolly, 1.5 months for slash, and two months for longleaf (with 2 inches of new white feeder root growth from at least 5 laterals) before applying overtop herbicides at labeled rates such as Arsenal® AC, Oustar®, Oust® XP and Velpar® to ensure best pine tolerance and growth response. Since optimum application timing is in mid-March to mid-April for most treatments (for north FL and the GA Coastal Plain), plan to have your seedlings planted early.
- □ For some herbicides, such as Bayer's Oustar®, Oust® XP and Velpar® L VU and Velpar® DF VU, recommended application rates depend on soil texture, soil pH, percent soil organic matter, and seedling age. For example, do not use Oust® or Oustar® when soil pH in the top 6 inches is 6.2 or higher, especially with longleaf pine. Lower rates for Oustar® and Velpar® are recommended on sandy soils and soils low in organic matter (less than 0.5 to 1.0%), which can include many Coastal Plain old-field sites. Higher rates are used for loamy or clayey soils, or where higher levels of soil organic matter occur (> 1.0%), which can include many Piedmont soils that have been forested for a long time (since the 1930's or 1950's).
- □ There can be damage to pine shoot terminals when applying Arsenal® AC and its generic equivalents over slash pine, especially when these species are in the active growth phase. This herbicide is normally recommended for slash and longleaf pine only where perennial grasses or species tolerant to Oust® XP and Velpar® L VU or DF VU are abundant. Arsenal® AC rates should not exceed 4 oz product per acre for these pine species. Combinations with other herbicides such as 2 oz product/ac Oust® XP are common over loblolly pine seedlings. Loblolly pine, on the other hand, is quite tolerant to the active ingredient in Arsenal® AC and rates between 6 and 8 oz product per acre are often recommended.
- Do not add a surfactant unless the herbicide label clearly states to do so.
- ❑ Apply herbicide at the optimal time to control competing vegetation. This varies somewhat by location, herbicide, and weed species, but generally treatments are most effective when applied as a pre- to early post-emergence application; when weeds first emerge in the spring and are no taller than ankle (preferably) to call high.
- Do not apply herbicides overtop of stressed pine seedlings as severe injury or mortality may result. In the southeastern US, drought is the most common cause of stress to seedlings. April and May have historically been the driest two months of the first half of the year in most parts of Georgia so herbicide applications for emergent herbaceous weeds should occur prior to the onset of drought conditions.
- □ Carefully calibrate spray equipment to determine and control the application volume the gallons of spray solution per acre (gpa). The gpa is determined for a particular CONSTANT ground speed and gallons per minute (gpm) spray output. If constant ground speed cannot be maintained, then the herbicide application rate will be inconsistent and seedling injury or mortality can result. For most nozzle types, spray boom height should be adjusted so the spray pattern just overlaps at the ground surface. Before calibrating the sprayer, measure each nozzle output to ensure that they are producing a uniform spray volume, and replace or clean nozzles with unusual output (+/- 5%). During application, periodically check strainers and clean nozzle screens to ensure even spray coverage and proper application rate.





- □ Most HWC applications using broadleaf weed herbicides (e.g. Oust[®] XP, Arsenal[®], and Velpar[®] should be applied at 10 gpa unless the label states otherwise. Grass selective HWC products are usually applied at a minimum of 10 to 20 gpa and a maximum of 40 gpa depending on coverage needs due to grass development and density.
- Read and follow all label recommendations. Inclusion of a product trade name or a company name in this publication does not constitute an endorsement of a product or a company, as other products manufactured by different companies might be equally suited for the intended herbicide use.

CITATION

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