

## **Herbaceous Weed Control Checklist to Minimize Damage to Pine Seedlings**

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### **Introduction**

- ◆ When herbicides are applied properly, herbaceous weed control (HWC) during the spring following planting pine seedlings can be beneficial to growth and survival on old-field, pasture, hayfield, and cut-over sites, particularly in droughty years.
- ◆ A four to six foot wide band is often as effective as a broadcast treatment.

### **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:
  - 1) Make sure the herbicide or herbicide tank mix is labeled for over-the-top 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 herbicide product used is: (a) labeled for the particular use site (e.g. “for use in forest sites”, “for use in conifer 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”, 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 container being used.
  - 2) Apply the 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 the field acres will be sprayed, 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 field 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 field acre will be sprayed (6 ft/12 ft). If the DuPont Oustar® label specifies 10 oz/Ac product for the pine species and soil conditions at hand, then only one half of the 10 oz will be needed for each field acre. In this example, to treat a 100 acre field using the banded application method at 10 oz per SPRAYED acre, you will need 500 oz of product (100 acres X 1/2 = 50 acres; 50 acres X 10 oz = 500 oz), whereas 1000 oz would be needed for a broadcast application to the whole area since twice as much area is sprayed.

- 3) 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.
- 4) Wait at least one month after planting for loblolly and two months for longleaf (with 2 inches of new white feeder root growth from at least 5 laterals) and slash pine before applying over-the-top herbicides to obtain best pine tolerance and growth response. Since optimum application timing is in April for most treatments, plan to have your seedlings in the ground early.
- 5) For some herbicides, such as DuPont's Oustar, Oust® and Velpar® (L, DF and ULW), 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 6.0 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).
- 5) There can be damage to pine shoot terminals when applying Arsenal® AC and its generic equivalents over slash or longleaf 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 and Velpar are abundant. Arsenal® rates should not exceed 4 oz product per acre in these pine species, and combinations with other herbicides such as 2 oz product/Ac Oust are most common. Loblolly pine, on the other hand, is quite tolerant to the active ingredient in Arsenal and rates between 6 and 8 oz product per acre are often recommended.
- 6) Do not add a surfactant unless the herbicide label clearly states so.

- 7) Apply the herbicide at the optimal time to control the competing vegetation. This varies somewhat by herbicide and weed species, but generally most treatments are most effective when applied as an early post-emergence application; when weeds first emerge in the Spring.
- 8) Do not apply herbicides over-the-top of pine seedlings that are under stress or severe injury or mortality may result. In the southeastern US, drought is the most common cause of stress on seedlings.
- 9) Carefully calibrate the spray rig 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 a constant ground speed can not be maintained, then the herbicide application rate will be inconsistent and seedling injury or mortality can result. For most nozzle types, the 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.
- 10) 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.

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