Longleaf Note #5: After Planting Dichotomous Key for Herbaceous Release on Agricultural Lands

Applications to Restoration Ecology

The Longleaf Alliance has conducted four herbicide screening trials over longleaf pine seedlings; two in an old pecan orchard with a full complement of old-field weeds, and two herbicide screening trials on agricultural crop fields in Monroe and Geneva Counties, Alabama. From these and other studies, a good site preparation proved a critical first step. In the absence of a good site preparation herbicides tend to be less effective in promoting good survival and growth of newly planted longleaf pine seedlings. We also recommend that a small number of seedlings be excavated prior to applying any herbicides "over the top" of newly planted longleaf pine seedlings. Insure that new roots have developed since planting. If new roots have not grown from the plug or the original root system, it is inadvisable to apply soil-active herbicides over the newly planted seedlings. If, on the other hand, a vigorous root system in developing (more than 4" of new growth since planting), the seedlings should be able to better tolerate soil active herbicides. Before applying any herbicide over longleaf pine it is important to test the soil pH. One of the most popular herbicides (Oust/sulfometuron) becomes more active as soil pH increases. If soil is above 6.0 pH, Oust should only be applied at the lowest recommended rate. If the soil is above 6.5 pH, do not apply more than 1 oz of Oust to the acre. If the soil is above 6.7, Oust should probably be avoided on these soils.

Site was a pasture, a cultivated field with a large component of grasses, or a fallow old-field. (**go to C**)
Site was a clean old field with no significant component of grasses prior to planting. (**go to D**)

C Area received no site preparation. (**go to C1**)
Area received site preparation prior to planting. (**go to C4**)

C1 Site is fertile old field/pasture (**go to C2**)
Site is infertile sandy soil (**go to C3**)

C2 Recommended herbaceous release treatments in the order they should be applied:

- #1 Broadcast Oust at 2-4 oz/acre between Mid-March and early-April.
- #2 Band spray Arsenal at 4-6 oz/acre as a post-emergent herbaceous release after May 10th.
- #3 Mow between rows (**optional**).

Two post-planting release treatments will be necessary if the site is a fertile old field and bermuda-grass is present, bahia grass is not killed during the initial herbaceous release, or if crab-grass germinates after the initial chemical treatment. If young crabgrass germinants are present, it is imperative that a post-emergent (second) herbicide be applied.

C3 Recommended herbaceous release treatments in the order they should be applied:

- #1 Broadcast **one** of the following pre-emergent herbaceous releases between Mid-March and early-April.
  - a: Oust 2-4 oz/acre
  - b: (Tank mix) Velpar L 24-32 oz/acre and Oust 2-4 oz/acre
  - c: (Tank mix) Velpar DF 10.67 oz/Acre and Oust 2-4 oz/acre
  - d: Oustar 10-12 oz/acre
- #2 Band spray a post-emergent herbaceous release after May 10th (**optional**).
  - a: Arsenal 5 oz/acre
- #3 Mow between rows (**optional**).

Two post-planting release treatments may be necessary if bermuda-grass is present, bahia grass is not killed during the initial herbaceous release, or if crab-grass germinates after the initial chemical treatment. If young crabgrass germinants are present, it is imperative that a post-emergent (second) herbicide be applied.

C4 Area received chemical site preparation only. (**go to C5**)
Area received chemical site preparation and scalping, or scalping alone. (**go to C6**)

C5 Recommended herbaceous release treatments in the order they should be applied:

#1 Broadcast **one** of the following pre-emergent herbaceous releases between Mid-March and early-April.
- a: Oust 2-4 oz/acre
- b: (Tank mix) Velpar L 24-32 oz/acre and Oust 2-4 oz/acre
- c: (Tank mix) Velpar DF 10.67 oz/Acre and Oust 2-4 oz/acre
- d: Oustar 10-12 oz/acre

#2 Band spray Arsenal 4-6 oz/acre as a post-emergent herbaceous release after May 10th (**optional**).

#3 Mow between rows (**optional**).

Two post-planting release treatments may be necessary if bermuda is present, bahia grass is not killed during the initial herbaceous release, or if crab-grass germinates after the initial chemical treatment. If young crabgrass germinants are present, it is imperative that a post-emergent (second) herbicide be applied. As an alternative, to steps #1-#3, wait till Middle-May and broadcast 4-5 oz Arsenal and 2 oz of Oust to the acre as a tank-mix. Do not use this option unless the site was chemically or mechanically site prepared prior to planting.

C6 Recommended herbaceous release treatments in the order they should be applied:

#1 Broadcast or band-spray **one** of the following pre-emergent herbaceous releases between Mid-March and early-April.
- a: Oust 2-4 oz/acre
- b: (Tank mix) Velpar L 24-32 oz/acre and Oust 2-4 oz/acre
- c: (Tank mix) Velpar DF 10.67 oz/Acre and Oust 2-4 oz/acre
- d: Oustar 10-12 oz/acre

#2 Band spray Arsenal at 4-6 oz/acre as a post-emergent herbaceous release after May 10th (**optional**).

#3 Mow between rows (**optional**).

Two post-planting release treatments may be necessary if bermuda is present, if bahia grass is not killed during the initial herbaceous release, or if crab-grass germinates after the initial chemical treatment. If young crabgrass germinants are present, it is imperative that a post-emergent (second) herbicide be applied

D Field is fertile soil (go to D1)
Field is unfertile sandy soil (go to D2)

D1 Recommended herbaceous release treatments in the order they should be applied:

#1 Broadcast **one** of the following pre-emergent herbaceous releases between Mid-March and early-April.
- a: Oust 2-4 oz/acre
- b: (Tank mix) Velpar L 24-32 oz/acre and Oust 2-4 oz/acre
- c: (Tank mix) Velpar DF 10.67 oz/Acre and Oust 2-4 oz/acre
- d: Oustar 10-12 oz/acre

#2 Band spray a post-emergent herbaceous release after May 10th.
- a: Arsenal 5 oz/acre

#3 Mow between rows (**optional**).

Two post-planting release treatments may be necessary if bermuda is present, if bahia grass is not killed during the initial herbaceous release, or if crab-grass germinates after the initial chemical treatment. If young crabgrass germinants are present, it is imperative that a post-emergent (second) herbicide be applied

D2 Recommended herbaceous release treatments in the order they should be applied:

#1 Broadcast **one** of the following pre-emergent herbaceous releases between Mid-March and early-April.
- a: Oust 2-4 oz/acre
- b: (Tank mix) Velpar L 24-32 oz/acre and Oust 2-4 oz/acre
- c: (Tank mix) Velpar DF 10.67 oz/Acre and Oust 2-4 oz/acre
- d: Oustar 10-12 oz/acre

#2 Mow between rows (**optional**).