Longleaf Pine CRP Establishment & Management Issues

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For the duration of the longleaf CRP program we have been behind the learning curve with many aspects of establishment and management. This has been exacerbated by the severe droughts experiences through much of the program which has magnified normally minor problems. Based on field experiences, demonstration, and research plot results, I have prepared a list of longleaf CRP establishment and management considerations. While some are general in nature, applicable to most sites, others may be specific for a particular situation.

Site Preparation

- ***Soil test before planting***
  On a few sites over the last few years we have experienced some mortality/morbidity problems that might be linked to herbicides, although it has been a rare occurrence and there has been no definitive diagnostic evidence to prove the cause, you need to be aware of a potential for damage.

  On agricultural fields, take a soil test prior to planting to determine pH and percent organic matter. OUST® activity increases as pH reaches 6.5 and greater. Consider reducing the amount of OUST® or do not use at high soil pH. On soils with 2 % organic matter or less, reduce VELPAR® L to 21 oz per broadcast acre. When using OUSTAR®, use a 10 oz broadcast rate when soil organic matter is 2 % or less (note that this is an OUST® rate of 1.5 oz broadcast and you may need to add OUST® to get a rate up to 2-3 oz. to increase control). If soil pH is 6.5 or greater you may want to use an alternative to OUSTAR®.

- ***Scalping to displace soil pathogens & insect pests***
  Data for research and demonstration plots in Florida (Dr. Ed Barnard) and the Longleaf Alliance (Mark Hainds) has demonstrated the benefits of displacing the surface soil layer (to a depth of 2-3 inches on cropland & to 3-5 inches on pastures) to lessen the impacts of root feeding insects and root pathogens.

- ***Preplant bermudagrass control***
  Planting into pastures and then trying to control grasses has posed one of the greatest problems in securing regeneration. Preplant treatments with glyphosate after spring green-up with a follow-up treatment in late summer to early fall of glyphosate or low rates of imazapyr have been inconsistent in providing sufficient grass control through the first growing season. And droughts generally limit the

effectiveness of a single late season treatment. Overall, the most consistent treatment has been the application of 32 ounces of ARSENAL AC® (imazapyr) or 64 ounces of CHOPPER® (also imazapyr but ½ a.i. of Arsenal) in late August to 3 weeks before frost. (See attachment on Native Warm Season Grasses)

- ***Subsoiling***
  Generally, this operation has been poorly timed. Dry soils are needed to achieve the maximum benefit from subsoiling. This means a late summer treatment if fall planting is desired. Several inches of rain are necessary to settle the subsoil trench. If this does not occur, or the operation was too late & planting is eminent, then plant 4 inches to the side of the subsoil trench to avoid seedling settling too deep into the trench. If the subsoil treatment was done while the soil was dry then the adjacent soil will have fractures to allow root penetration. Note that running a subsoil shank in a moist soil is not subsoiling.

Planting

- ***Seedling depth***
  Much of the mortality observed in the past year has been the result of seedlings planted too deep. If the buds are covered by soil the seedling become morbid and will likely die over the summer. The root plug should be exposed up to ½ above the surface of the soil.

- ***Timing of planting***
  Beginning to plant in the Fall (October if soil moisture is adequate) is preferred for container-grown stock as root growth over the winter results in a more vigorous seedling in the Spring. Generally, survival decreases with later season plantings in late February through March.

Competition Control

- ***Herbicide timing***
  Preemergent herbicides like OUST®-VELPAR® & OUSTAR® preform best if applied in late February to April 15. Later applications of these herbicides do not provide effective weed control in the critical early weeks of May when early herbaceous competition accelerates. In dry years, post-emergement treatments may not provide sufficient early May weed control as drought delays herbicide activation and metabolism.

- ***Application precautions***
  See notes on Soil Test Before Planting under site preparation.
- ***Control of perennial grasses***
  Control before planting is critical (see ***Site Preparation***). Post-plant treatments

will include selective grass herbicides (ENVOY®, VANTAGE® or FUSILADE®) applied after grass green-up in the Spring with treatment to regrowth in late summer; or shielded sprays of non-selective herbicides following grass green-up in the Spring, followed up by spot treatments as necessary. Avoid applications if grasses are drought stressed and carefully follow label for rates for perennial grass control.

- ***Broadleaf weeds & annual grasses***
  Preemergent (late February to April 15) or early preemergent (April to May 1) herbicide treatments generally provide sufficient early growing season (May - June) weed control. Spring droughts often limit control if preemergent applications are delayed until after May 1.

- ***Summer treatments***
  Some sites will have outbreaks of grasses and certain broadleaf weeds if mid-summer rains occur. Grasses generally pose more serious competition problems than broadleaf weds. Effective control of both requires scouting of the fields to catch developing infestations when the weeds are small and treating: 2-leaf broadleaf stage or 2 - 4 inch grasses. Herbicide application to broadleaf weeds and grasses with dense rank growth are less effective and the competitive damage may have already damaged the pine seedlings.

- ***2nd year treatments***
  Generally, I prefer a second season of application on longleaf stands as long as they are in the grass stage and where interplanting or reenforcement planting was done.

- ***Weed control expectations***
  This is the greatest area of concern for landowners and foresters. In general, the critical weed control period is in the spring of the first growing season, specifically providing weed control in late April to June. Additional grass control treatments may be necessary in mid-summer on some site (see ***Summer Treatments***). However, many landowners have the unreasonable expectation of year-round weed control which is not practical or desired. Winter annuals, late summer and fall annuals may appear unsightly and can overtop seedlings in the grass stage but they actually are short-lived competition that generally do not cause a mortality problem. Concentrate on control in the spring of the year and on control of perennial grasses.

  Additionally, broadcast weed control can pose insect problems as the preferred food sources are removed form the site leaving the pines as the forage target. Band treatments where cover vegetation remains in the row middles may reduce pressure form insects and some pathogens on the pines.

Longleaf and Native Warm Season Grasses

Legislation has been passed in Georgia that requires 44,000-64,000 acres of pasture land to be converted into stands of longleaf and native warm season grasses by the year 2010. The funds were designed to establish a viable stand of longleaf and incorporate Native Warm Season Grasses (NWSG) where non-native species (bermudagrass, bahiagrass, fescue, and johnsongrass) are present. This program will be a joint venture between the Georgia Forestry Commission (longleaf establishment) and NRCS (NWSG establishment). The NWSG will be established in a 6-8 ft band in the middle of each planted row of longleaf pine. BASF will provide a "**three year guarantee"**for the control of competing vegetation (non-native species) if the following Quality Vegetation Management steps are followed for the establishment of longleaf pine and NWSG (native warm season grasses).

Step 1: Inspection of Tracts (June)

- If thick thatch layer is present, tract will need to be burned, raked, or thatch removed. Thatch will interfere with chemical absorption and reduce effective control.

Step 2: Site Preparation Treatments (June – October 1st)

- Apply: 48 ounces Chopper (imazapyr) on clay sites
  40 ounces Chopper (imazapyr)/2qts glyphosphate on sandy sites
- On sandy sites, Chopper (imazapyr) is more active therefore rate reduction.
- If heavy competing vegetation is present scalping is also suggested.

Step 3: Planting of Longleaf Pine (Nov – Feb)

- There is no plant-back restriction, but suggest a minimum of 4-6 weeks to prevent temporary yellowing or stunting (mostly seen during dry seasons).

Step 4: Preplant Application (February – May)

- Preplant application of Journey (imazapic/glyphosphate) at 24 ounces before planting of NWSG.
- If non-native grasses are present, the addition of 1 qt glyphosphate will increase control (target at transition stage!!).
- If thistle, briars, and horsenettle are present, add 4 oz Overdrive. Although there is no plant-back restrictions on planting of NWSG with Journey or glyphosate, Overdrive has a 30 day planting of NWSG restriction. Also, do not use Overdrive if forbs are in the mix.

Step 5: Planting of NWSG (February – May)

- Minimum of 4-6 months after site preparation treatments.
- Bluestem, India grass, etc. can be planted early in plant-back due to tolerance. Gammagrass will be the most sensitive.

Labels, research materials, and contact information of applicators, consultants, and other technical representatives can be found at ***vmanswers.com***.