Herbaceous Release & Woody Release

Ryan Mitchell

Objectives

- Soil Tests
- Herbaceous Weed Control
  - Research
  - Timing and Herbicides
- Woody Control

Soil Test

- **On Ag/Pasture Sites**
  - Chicken litter and livestock feed areas
  - Cutover sites if prior problem
- **Include micronutrients**
  - A normal test will not include these
- **Test pH**
  - Avoid high pH soils (>7.0)
  - Use caution when spraying

Longleaf establishment phase

- Most difficult phase for longleaf pine (Boyer 1972)

- 1st question: “What do seedlings need?”
  - Sunlight
  - Water (soil moisture)
  - Nutrients

- 2nd question: “What limits seedling survival and early growth on upland well drained former old-field soils?”

Research by Dr. David Dickens, UGA

Longleaf establishment phase – Addressing the Timing Issue

- On old-field and former pasture sites and most cut-over sites there is plenty of sunlight and nutrients for seedlings (sites with little to no native herb or grass vegetation)
- Therefore (on moderately well to excessively well drained soils)
- Soil moisture tends to be the limiting factor (for survival and early growth)
- Earlier herbicide treatments (prior to 15 April) give better survival and early growth on well drained soils in droughty springs on non-scalped sites for the Coastal Plain of GA and north Florida

Research by Dr. David Dickens, UGA

Is there a difference in banded vs broadcast and 1 vs 2 yrs HWC? Loblolly HCW Study 9-yrs post treatment

(Lauer et al 1993)

Volume/acre

- SD[1] between HWC vs no HWC — 7 of 8 sites (25% gain)
- SD between 1 vs 2yr HWC — 4 of 7 sites
- SD between HWC method (band vs broadcast) — 0 of 6 sites

» [1]SD = significant difference @ 5% alpha level

Research by Dr. David Dickens, UGA

Herbaceous Weed Control Herbicides in Longleaf

Common Name	Trade Name*	Product Rate Per Acre
Hexazinone	**Velpar® L** **Velpar® DF**	4-8 pints 1.3-1.8 lb
Imazapyr	**Arsenal® AC**	4-6 oz
Sulfometuron	**Oust® XP**	2-8 oz
Sulfometuron (12%) + Hexazinone (63%)	**Oustar®**	10-19 oz
Clopyralid	**Transline®**	¼ - 1 1/3 pints ~15 oz
Aminopyralid	**Milestone®**	3-7 oz

* Generics available for most

Dr. Pat Minogue

LLA HWC Research

- Mark Hainds (1995-2014)
- HWC Research conducted 1997-2003
- Tested over 45 different herbicide combinations on more than 7 sites

Most Consistent Herbaceous Release Treatments on AG SITES

- The Split Treatment
  - 2 Oz Oust between March 15 – April 15
  - Followed by 4-6 oz Arsenal after May 15 (as necessary)
- Arsenal 5 oz & Oust 2 oz (Tankmix)
  - Apply after May 15

Check -No Herbaceous Release Treatment (Survival/Mortality)

- Best of 16 treatments in 97 bareroot study
- 1999 Site Prep and Herbicide Study
  - Scalping Site Prep =8th out of 11 treatments
  - Chemical Site Prep = Worst out of 11 treatments
  - Check (Rip Only) Site Prep = 4th Worst out of 11 treatments
- Second best of 20 treatments 01 Monroeville Container study
- Ranked 12th out of 20 treatments in ‘02 Samson Study

Check Treatment

- On average, across these four studies we reduced survival 3 out of 4 times (74%) by applying a herbaceous release treatment.

- Removing treatments that were off label (Atrazine/Oust, Escort), we still reduced survival 70% of the time.

- On average, across these four studies we increased height growth by applying an herbaceous release treatment with 4 out of 5 treatments (80%).

When is the “Check” or “No Release” Treatment a Good Option?

- When the Site Prep is Adequate
  - Some agricultural sites that have been scalped
  - Cutover sites that have been chemically site prepared
- When the soils are very poor
  - Lakelands, Kershaws, other sands
- When the seedlings are planted late
  - 1st Screening trial planted in March
    - Best out of 16 treatments
  - Monroeville Site planted in Mid-February
    - Tied for 1st best out of 20 treatments.

Post-plant herbaceous weed control timing considerations for the GA Coastal Plain

- April and May have been historically the driest months of the first half of the year for interior CP GA
- Other studies done during droughty growing seasons by Ezell, Yeiser, and Nelson have found that **earlier** treatments (March-April HWC) often gives better survival and early growth than May-June treatments
- Five- and eight-year results show that 10 oz/ac Oustar in April (and May in 2 of 3 cases) outperformed all other treatments using cumulative height and volume index/ac

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Summary of post-plant herbaceous weed control for longleaf pine on old-field sites

- A four to six feet band is generally sufficient HWC control in the 1st (especially) and 2nd year vs a wider band or a broadcast treatment (Lauer et al 1993)

- Based on the recent longleaf study looking at herbicide timing; there was a significant survival decline (15 to 25 percentage points) if the herbicide was applied within 2 months of planting → therefore do not apply an herbicide over longleaf pine within 2 months of planting.

Research by Dr. David Dickens, UGA

Dig before you spray!
Planted on Jan. 14
Excavated on March 30.

Chemicals to Avoid

- Escort (at any rate)
  - **Oust Extra**
- Arsenal/Oust Tankmix (before May)
- Atrazine/Oust Tankmix
- Surfactants

- 1997 Herbicide Screening Trial.
- Chemical Site Prep.
- Velpar/Oust Release.
- Photo taken approx 3 months post-application

No Veg. Control
Yr 1 or 2

Survival: 67%

Grass Stage: 11%

Avg. Height: 5.4’

Velpar/Oust
Yr 1 only

Survival: 63%

Grass Stage: 4%

Avg. Height: 9’

Complete Yr 1
Velpar / Oust Yr 2

Survival: 67%

Grass Stage: 2%

Avg. Height: 12.1’

2 Years Velpar/Oust – 4 ½ Growing Seasons

Avg. Hgt = 9.8’
Survival =68%
Grass Stage = 2.6%

Treatments – herbaceous vegetation poor control weeds

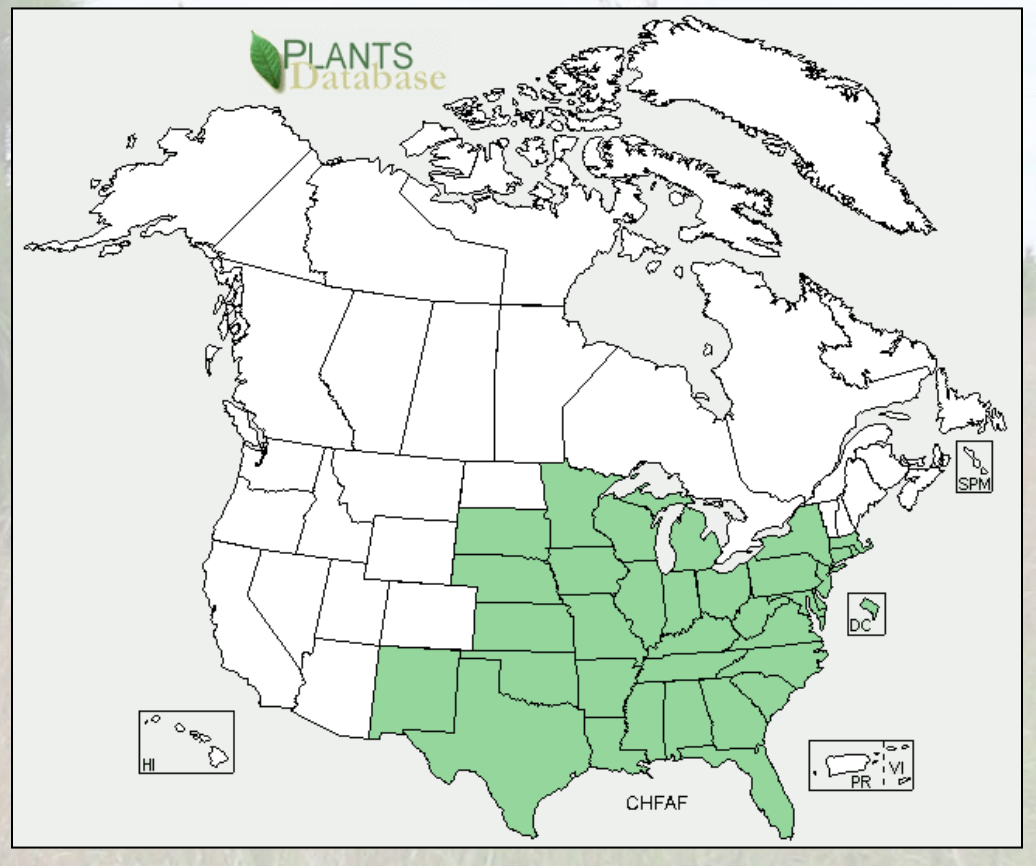
Treatment: / timing	Oust + Arsenal	Oustar	Arsenal
March		croton, minor camphorweed, minor TX panicum	croton, TX panicum, dogfennel, minor camphorweed
April		croton, minor camphorweed, minor TX panicum	croton, TX panicum, dogfennel, minor camphorweed
May		croton, minor FL pursley, coffeeweed	croton, TX panicum, dogfennel
Mar or April & June/July	Bermudagrass, minor TX panicum, coffeeweed		

Dr. David Dickens, UGA

Large-Flower Partridge Pea

Chamaecrista fasciculata

- A native legume / herbaceous species
- Annual
- Native to Southeastern US
- Attractive flower / aesthetics
- Quail and & birds consume the seed
- Seed is readily available
- Easy to establish
- Nitrogen fixer



Small-Flower
partridge pea

Large-Flower
partridge pea

Large Flower Partridge Pea in a Food Plot

Large Flower Partridge Pea 1st Growing Season!

Covington County, AL

Mowed in late August over scalped row.
Lifted thick thatch in some areas.

Two years post-planting an upland CRP site in Covington County, Alabama w/ large-flower partridge pea.

2011 Herbicide Screening Trial over Partridge Pea in Geneva County, AL

- Originally planted in 2007 under CRP
- Included approx. 1 lb of large-flower PP/acre
- 1st year survival reported above 90%
- End of 2nd growing season, near total loss in wetter fields

Rhizoctonia

Geneva County Screening Trial

- Check / no herbaceous release applied
- Tankmix of Oust 2 oz & Arsenal 5 oz acre
- Milestone VM @ 7 oz/acre
- Transline @ 15 oz/ acre

Row #2: Untreated / Check
Plot 2 months post trt.

Sept.
Newly planted
53% survival

Older seedlings
83% survival

Row #4: Untreated / Check
Plot 2 months post trt.

Row #2: Untreated / Check
Plot 2 months post trt.

Nov 1st

Newly planted 14% survival,
(compared to 53% in Sept.)

Older seedlings 29% survival 83%
(compared to 83% in Sept.)

Row #5: Oust 2 oz & Arsenal 5 oz, 2 mo.s post

Mid-summer

Arsenal /Oust Tankmix had 34% survival of newly planted seedlings, 19% lower than check plots.

Row #4: Untreated Check

Row #5: Oust 2 oz & Arsenal 5 oz, 2 mo.s post

Nov 1st

Arsenal /Oust at 15% survival for newly planted seedlings (same as check treatment & down from 34% in Sept.)

79% survival for 2nd year seedlings (compared to 29% survival for Check treatment seedlings)

Row #6: Milestone VM 7 oz acre 2 mo.s post trt

September

Milestone VM had 49% survival of newly planted

Better weed control than Ars./ Oust

97% Surv. older seedlings

Row #4: Untreated Check

Row #6: Milestone 7 oz acre
2 mo.s post trt

November 1st

Milestone had 33% survival of newly planted seedlings
(down from 49% in September)

Better weed control than Arsenal/Oust

84 % survival of older seedlings
(down from 97% in September)

Row #3: Transline @15 oz

September
Transline survival (69%) of newly planted seedlings.

Best weed control.

Least damage to longleaf seedlings.

88% survival in older seedling.

Row #4: Untreated Check

Row #3: Transline @15 oz

November 1st

Transline= 52% Survival of newly planted seedlings
(down from 69% in Sept.)

Best weed control.

Least damage to longleaf seedlings.

88% survival of older seedlings
(no decrease from September).

Coffeeweed & Sicklepod are closely related to partridge pea.

Milestone VM on glyphosate resistant pigweed

Woody Release

Hexazinone

Bermudagrass

- Sethoxydim (Poast)
- Fluazifop (Fusilade)
- Clethodim (Select/Envoy)
- Glyphosate*
- Key is timing!

Pasture Grass Control

- Based on our current research and objectives at this time we recommend:
  - Bahia grass control - Sethoxydim SPC® @ 24-30 oz/acre or Metsulfuron @ 2-3.5oz/acre
  - Bermuda grass control - Sethoxydim SPC® @ 30-34 oz/acre
  - To minimize germination - Plateau® @ 4-6oz/acre can be added to either chemical

Research done at TTRS.

Gallberry & yaupon treated with 3 quarts Garlon 4 per acre.

Garlon 4 may volatilize at higher temperatures

MSO as well. Drift control will help with this.

Released legumes & warm season bunch grasses.

Aminopyralid and triclopyr

Please direct questions to:

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