

HERBICIDE AND SEEDLING PRODUCTIVITY TRIAL UPDATES

SFNMC FY 2019 ADVISORY MEETING
OCTOBER 31 – NOVEMBER 1, 2018

STUDIES INSTALLED IN 2018

- HERBICIDE TRIALS

- BAREROOT Post-Emergent Herbicide Screening Study
- CONTAINER Ronstar®Flo Study

- SEEDLING PRODUCTIVITY TRIALS

- BAREROOT Soil Stabilizer Product Study
- BAREROOT Plant Vigor Product Study
- BAREROOT Liquid Copper Rate Study

HERBICIDE TRIALS – BAREROOT POST-EMERGENT HERBICIDE SCREENING STUDY

- To determine seedling tolerance to post-emergent herbicides not currently labelled for conifer nursery use*
- 11 herbicides applied at lowest labelled rate
- Applications made at approx. 8 weeks post-sowing
- 2 replicated studies in loblolly pine, 1 replicated study in slash pine
- Manufacturers or dealers provided samples for all products
- Herbicides selected for weeds listed as controlled on label (study not designed to test for weed control)

Trade Name	Common Name	Labelled Crops	Target Weeds	MOA Group # and action
Defendor [®]	florasulam	turf	catchweed, dandelion, groundsel, other broadleaf weeds	2 ALS inhibitor
Envoke [®]	trifloxysulfuron	cotton, sugarcane	beggarweed, Johnsongrass, maretail, morning glory, purple & yellow nutsedge, pigweed, sicklepod	2 ALS inhibitor
Frequency [®]	topramezone	VM, conifer plantations (site prep and one year post planting)	Palmer amaranth, carpetweed, maretail, morning glory, pigweed, crabgrass, goosegrass	27 Pigment Synthesis inhibitor
Mission [®]	flazasulfuron	grapes, citrus, conifer trees 'container and field-grown conifers'	pigweed, dandelion, mustard, ragweed, p. spurge, yellow and purple nutsedge, kyllinga, crabgrass, horseweed	2 ALS inhibitor
Plateau [®]	imazapic	pastures, rangeland, conifer plantation site prep	beggarweed, morningglory, pigweed, mustard, sicklepod, crabgrass, goosegrass, yellow and purple nutsedge, spurge, torpedograss, dallisgrass, crowfootgrass	2 ALS inhibitor
Ronstar [®] Flo	oxadiazon	turf and ornamentals	annual sedge, crabgrass, goosegrass, carpetweed, p. spurge, pigweed	14 PPO inhibitor
ShieldEx [®]	tolpyralate	corn	Palmer amaranth, carpetweed, horseweed, morningglory, pigweed, crabgrass, goosegrass, dandelion	27 Pigment Synthesis inhibitor
Strada [®]	orthosulfamuron	rice	eclipta, rice flatsedge, gooseweed, morningglory, redstem, prickly sida, yellow nutsedge	2 ALS inhibitor
TapOut [®]	clethodim	conifer trees, flax, cotton, food crops	grasses only	1 ACCase inhibitor
Velocity [®]	bispyribac	turf	yellow nutsedge, clover, dandelion, henbit, other broadleaf weeds	2 ALS inhibitor
Venue [®]	pyraflufen	corn, cotton, soybeans, grapes, vegetables, sugarcane	Palmer amaranth, bedstraw, beggarweed, carpetweed, eclipta, morningglory, pigweed, prickly sida	14 PPO inhibitor

- SLASH PINE
Beds 2-4
- LOBLOLLY PINE
Beds 5-7
- PHOTO TAKEN 5 WEEKS
AFTER APPLICATION





SEEDLING COLLECTION AND MEASUREMENTS

- Seedling characteristics to be measured include:
 - Seedling density
 - Root collar diameter
 - Shoot height
 - Dry weight of shoot
 - Dry weight of roots
 - Notes of stem, needle or root deformity or discoloration

QUESTIONS?

HERBICIDE TRIALS – CONTAINER RONSTAR®FLO STUDY

- To identify safe (seedling tolerant) herbicide providing control of black willow and other weeds in containers
- Follow-up to 2017 study reporting positive results at 40 and 80 oz./ac rates
- Applications made on newly-sown and capped trays
- Applications made once per week for 4 weeks to capture willow seed dissemination period
- 2 replicated studies in loblolly pine, 2 replicated studies in longleaf pine

Tables from Research Report 18-01 on 2017 study results

Table 2. Container pine seedling characteristics treated with Ronstar®Flo in four species, IFCO Nursery, Moultrie, GA.

Species	Rate	Survival ¹ (% Fill)	Shoot Height (cm)	RCD (mm)	Shoot Weight (g)	Plug Weight ² (g)
Loblolly	0 oz./ac	92.7 a	26.2	3.72	2.05	11.38
	40 oz./ac	93.2 a	26.6	3.75	2.09	11.52
	80 oz./ac	90.2 a	26.7	3.78	2.12	11.69
	122 oz./ac	86.5 b	26.1	3.78	2.07	11.81
Longleaf	0 oz./ac	83.4	26.6	8.10	3.12	13.73
	40 oz./ac	82.9	26.4	8.18	3.08	13.77
	80 oz./ac	83.7	26.1	8.18	3.10	13.69
	122 oz./ac	79.8	26.3	8.30	3.18	13.89
Shortleaf	0 oz./ac	88.0	21.5	3.99	1.86	11.22
	40 oz./ac	89.1	21.8	3.92	1.90	11.37
	80 oz./ac	86.7	21.9	3.98	1.92	11.38
	122 oz./ac	88.0	22.0	3.98	1.90	11.36
Slash	0 oz./ac	93.5	28.7	4.22	2.77	12.61
	40 oz./ac	92.5	28.4	4.21	2.66	12.77
	80 oz./ac	89.9	27.8	4.14	2.61	12.78
	122 oz./ac	90.2	27.6	4.18	2.64	12.62

Table 3. Percent likelihood of no willow or other weed populations in containers treated with Ronstar®Flo in four species, IFCO Nursery, Moultrie, GA.

Species	Rate	% likelihood of 0 willows present in 1 container tray	% likelihood of 0 other weeds present in 1 container tray
Loblolly	0.0 oz./ac	20.0	80.0
	40 oz./ac	86.7	100.0
	80 oz./ac	100.0	86.7
	122 oz./ac	93.3	100.0
Longleaf	0.0 oz./ac	53.3	86.7
	40 oz./ac	100.0	100.0
	80 oz./ac	100.0	100.0
	122 oz./ac	100.0	100.0
Shortleaf	0.0 oz./ac	*	*
	40 oz./ac	*	*
	80 oz./ac	*	*
	122 oz./ac	*	*
Slash	0.0 oz./ac	*	66.7
	40 oz./ac	*	100.0
	80 oz./ac	*	100.0
	122 oz./ac	*	93.3



SEEDLING COLLECTION AND MEASUREMENTS

- Seedling characteristics to be measured include:
 - Seedling density
 - Root collar diameter
 - Shoot height
 - Dry weight of shoot
 - Dry weight of root plug
- Willow and other weed counts/identification will be made

QUESTIONS?

SEEDLING PRODUCTIVITY TRIALS – BAREROOT SOIL STABILIZER PRODUCT STUDY

- To compare soil stabilizer products in order to provide effective alternatives to current product used
- 3 soil stabilizer products installed in 1 replicated study
- Products applied operationally at sowing in blocks 3 beds wide by 160-200 feet long
- Manufacturers or dealers provided required quantities of products

Product	Mfg.	Website	Description	Amount applied
P-1490	DuraPro Adhesives	http://www.ifscos.com/	Polyvinyl acetate homopolymer emulsion	55 gal/ 500 gal water/ acre
Permaflect 325	Tailored Chemical Products	http://www.tailoredchemical.com/	Vinyl acetate acrylic copolymer	55 gal/ 500 gal water/ acre
SoilTac	Soilworks	https://www.soilworks.com/products-and-services/soiltac	Vinyl copolymer emulsion	55 gal/ 500 gal water/ acre



SEEDLING COLLECTION AND MEASUREMENTS

- Seedling characteristics to be measured BY DRILL and include:
 - Seedling density
 - Root collar diameter
 - Shoot height
 - Dry weight of shoot
 - Dry weight of root plug

QUESTIONS?

SEEDLING PRODUCTIVITY TRIALS – BAREROOT PLANT VIGOR PRODUCT STUDY

- To determine effectiveness of foliar nutrient products
- 2 micronutrients products and 1 macronutrient products used
- 3 loblolly pine replicated studies, 1 slash pine replicated study
- Products applied in late June, then 2 weeks later, followed by 2 additional applications at three week intervals
- Manufacturers or dealers provided required quantities of products

SEEDLING COLLECTION AND MEASUREMENTS

- Seedling characteristics to be measured include:
 - Foliar nutrient analysis
 - Seedling density
 - Root collar diameter
 - Shoot height
 - Dry weight of shoot
 - Dry weight of roots

QUESTIONS?

SEEDLING PRODUCTIVITY TRIALS – BAREROOT LIQUID COPPER RATE STUDY

- To measure seedling tolerance to three rates of liquid copper applied during the growing season rather than at sowing
- 1 product used at 3 rates (1 quart/ac, 4 quarts/ac, 8 quarts/ac)
- 2 loblolly pine replicated studies
- Product applied in late June
- Manufacturer provided a sample of product

SEEDLING COLLECTION AND MEASUREMENTS

- Seedling characteristics to be measured include:
 - Seedling density
 - Root collar diameter
 - Shoot height
 - Dry weight of shoot
 - Dry weight of root plug
 - Notes of stem, needle or root deformity or discoloration

QUESTIONS?

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