2014 Update Mtg: 2014 Weed Management Update

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Topics

• Poverty grass biology and control
• Herbicide modes of action
• Weed Management Choices & $$

Thanks to CCCGA & OSC UPI, Bayer, and Chemtura for providing financial support for IPM / Weed research.
Poverty Grass

Biology and Control
History of Poverty Grass

- 1950’s: occasional weed
- 1980’s: regularly encountered
- 2010’s: problematic on many farms
Who are the players?

- **Broomsedge**  
  *Andropogon virginicus*

- **Little Bluestem**  
  *Schizachyrium scoparium*
Biology

- Vigorous perennial
  - Densely tufted; stems coming from central crown.

- Bronze-colored stalks persist through winter flood
  - Small indication of things to come

Photos taken Jan 13
Biology

- Very slow starter
  - new growth does not protrude above vines until June or later

- Many growers caught “by surprise” as populations seem to explode in August.

Broomsedge
Broomsedge

- Native grass, 2-4’ tall
- Big seed producer
  - Good germination after cold
  - Wind dispersed (fuzzy seeds)
- Grows esp. on sandy, low-fertility soils
- Shallow-rooted
Broomsedge Control

- Roundup works
  - But it is non-selective!!
- Mow seedheads and remove, if possible.
  - When are seeds viable? Test in 2014.
- Would Flaming work to control flowers or seeds?
  - Try in 2014.
Little Bluestem

- Forms loose or dense clumps
  - 1.5 – 3 ft tall

- Deep rooted

- Seed germination and dispersal not as good as BS

Vegetative spread important
LBS Control

- Fair to poor flood tolerance; exploit?
- Mowing should still help, but seed viability patterns unknown.
- Not really a problem for many, so little research on control.

Preferred for turf!
Tell the difference: Flowering heads

Seed clusters

Broomsedge
2+ stalked seed clusters / branch
Clusters ~ 1.5 in.

Little Bluestem
Single cluster of seeds / branch
Clusters ~ 3 in.
Look at the awn of the seed

Broomsgedge

Little Bluestem

Broomsgedge awn is straight.
Little Bluestem awn is twisted & bent.

Awn = bristle
Controls

- High rates **Devrinol**: late April-early May
  - Applications after harvest can work, but spring seemed better.

- **Select** (grass herbicide) should give control as well.
  - Apply before flowering!

- **Roundup** wipes.
Controls

- Repeated, close mowing to prevent re-seeding.

- Reported:
  - 60 - 75#/A *Evital* in fall followed by winter sanding worked well.
  - 60#/A *Evital* in spring worked well.

- Control off-farm populations!
How Herbicides Work
PREEMERGENCE PRODUCTS
Preemergence – Casoronon 4G

• Nitrile family, 4 lb a.i. – Group 20
• Volatilizes rapidly
• Apply in fall or spring (usual)
• Incorporate immediately and thoroughly!!
• Compound is lost readily air T >60 F.
• 100 lb in 12 months
Preemergence - Casoron

• Discovered in 1950s in Netherlands and introduced to cranberry in early 1960s.

• Inhibits germination, meristem growth
  – Root tips

• Mode of action not clearly understood but thought to inhibit cell wall formation.
Preemergence - Casoron

• Apply AFTER sanding.

• 4 yr of repeated app of 40 & 100 lb/A showed no adverse impact on yield or vines.

• Weak vines may be impacted adversely, esp by high rates.
Casoron - Target plants

- Crabgrass, Rattlesnake
- Panicum, Summer
- Aster family (thistles, ragweed)
- Dodder
- Horsetail
- Tearthumb, Smartweed
- Beggarsticks, YLS

- Rice cutgrass
- Woolgrass, Cottongrass, Nut sedge, Needlegrass (all sedges)
- Hawkweed
- Wild strawberry
- Hypericum species
Preemergence: Devrinol DF-XT

• Amide family, 50 lb a.i.; Group 15
  – 10G no longer made
• Apply in fall or spring (usual)
• Water in soon after application
  – If soil is moist, not as critical
• 18 lb/A annually (3-6’s or 2-9’s)
Preemergence - Devrinol

- Introduced by Stauffer Chemical; labeled for cranberry ca. 1977.
- Seedlings fail to emerge, inhibit root and shoot growth.
- Mode of action not clearly understood but thought to interfere with cell division and DNA production.
Preemergence - Devrinol

- Excellent choice for new plantings.
- Can sand on top of Devrinol or apply on top of sand.
- Water to moisten soil 2-4” deep.
- Agitate throughout injection.
- Works best on weed-free surface.
Devrinol - Target plants

- Nut sedge
- Beggarsticks / Pitchfork (*Bidens*)
- Cutgrass
- Annual grasses
- Annual BL like chickweed, ragweed, carpetweed
Devrinol 2-XT

- Truly a liquid
- 22% a.i. (2 lb per gallon)
- New plantings: 6 qt/A
- Established: 12-18 qt/A peat
  8-12 qt/A sandy
- Federally registered; awaiting MA approval.
  - Quantities likely limited for 2014
Preemergence – Evital

- Pyridazinone family, 5 lb a.i.; Group 12
- Apply in fall (usual) or spring.
- Water in after application if no rain.
- Up to 160 lb/A in fall, up to 120 lb/A in spring.
Preemergence - Evital

- Introduced by Sandoz Ag in 1968; labeled ca. 1977.

- Whitening in stems & leaves as seedlings emerge. May grow for few days, but w/o chlorophyll, plants die.

- MOA: blocks carotenoid synthesis, destroys chlorophyll, turns plant white.
Preemergence - Evital

• Can sand on top of Evital, but be careful on bogs with drainage issues.

• Sanding after appl of 50 lb/A are fine (on well-drained sites).

• Stevens, McFarlins are sensitive; CQ?

• Some have been happy with Evital on new plantings – watch drainage, variety!
Evital - Target plants

- Barnyardgrass, needlegrass, cutgrass, smokegrass: 80-120 lb/A
- Broomsedge, bog rush, LBS, nutsedge, spike rush, summergrass: 120-160 lb/A
- Switchgrass, woolgrass: 160 lb/A
Evital - Optimize

**LOWER RATES**
- Open, well-maintained canopy
- Sprinklers
- Sandy soils
- Sensitive varieties
- Young perennial weeds

**HIGHER RATES**
- Leggy vines
- Cannot irrigate
- Peaty, hi OM
- Established weeds
- Vigorous cranberry vines
Thoughts for 2014

• Keep up with weed management, esp if you opt not to raise a crop.

• Consider being aggressive with your weed management if not growing a crop.
  – Apply multiple applications of Casoron for dodder control
  – Use QuinStar
Thoughts for 2014

• Use LW, spring floods, even summer floods for weed control.

• **CAUTION:** Allow time between herbicide applications and floods, if you do both.

• Call us and let us know if you are doing these activities for weed control.
2013 - Cost Profiles / A

- Poast (2 oz/gal; 30 GPA) = $42
- Callisto, chemigation (8 oz) = $31
- QuinStar (8 oz) = $17
- Select (2/3 oz/gal; 30 GPA) = $15
- Roundup (10% solution)/Weedar <$5

- Just for materials, no labor costs.
2013 - Cost Profiles / A

- Devrinol DF (12 lb) = $132
  Callisto, ground (8 oz) = $187
  Casoron (80 lb) = $192
  Evital (75 lb) = $281

- At $8/bbl, Evital would need to save you 35 bbl to be cost-neutral.
- At $25/bbl, need to save 11 bbl.
Thoughts for 2014

• Will be meeting in March to talk dodder management strategies.

• Don’t neglect your weed management!!