Can Plant Growth Regulators Improve Your Field?
What is a Plant Growth Regulator?

- Compound that regulates plants growth
- Affects hormone levels
- Changes in growth and development
Plant Growth Regulators

• **Plant growth regulators**
  – Can increase or decrease growth rate

• **Trinexapac-ethyl (TE)** - Inhibits gibberellic acid
  – Side effects – increased tiller density and rooting
Trinexapac-ethyl – Affects Cell Size

Normal Gibb.

After Gibb.-inhibiting PGR application
PGRs on Sports Fields?

- What we know about Trinexapac-ethyl:
  - Reduced shoot growth
  - Increased tiller density
  - Increased rooting
Surface Stability

*Divoting* = complete shearing (removal) of turf root system from rootzone
PGRs and Surface Stability

• Can Primo Improve Divot Resistance (Kentucky bluegrass) ?
  – Primo Applied May – July – “Pre-condition”
  – Sand: 10 – 20% Reduction in Divot Size
  – Soil: 10% Reduction in Divot Size

• Primo Applied From May – October was not better/worse than Untreated Plots
PGRs and Surface Stability

• Tiller Density
  – Primo Treatments Increased Tiller Density up to 15%

• Root Mass
  – Primo Applied May – July Increased Root Mass by 10%
Conclusion From Research

- Primo Applied in Spring and Summer Improves Divot Resistance for Fields Used in the Fall
  - Increase in Tiller Number
  - Increase in Root Mass
Applying Trinexapac-ethyl

• Foliar Absorbed
  – Must Dry on Leaf (Label Says 1 Hour)

• Expect 50% Growth Reduction (Effects 3-5 Days After Application)

• May Have Some Discoloration After First Application
  – Then Darker Green Color
Do Not Apply to Stressed Turf
Applying PGRs

• Do Not Apply Immediately Before or After Cultural Practices

(Aerification, Verticutting, etc.)
Applying Trinexapac-ethyl

- Be Ready for Growth Surge (Rebound Effect)
  - Use it to Your Advantage
Trinexapac-ethyl in Paint

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Do Not Use In High Wear Areas
Non-Sports Events
Non-Sports Events

- **Recommendations:**
  - Primo Application at Least 2 Months Before Event
  - Primo Application 21 Days Before Field is to be Uncovered
  - Growth Surge – grow out of damage

Recommendations by Steve LeGros (Sports Field Mgmt, Nov. 2007)
Poa annua Control?
**Poa annua Suppression**

- **Paclobutrazol**
  - Root-Absorbed – Water in
  - Include Some N to Mask Discoloration
  - Slows Growth 6 - 8 Weeks
**Poa annua** Suppression

- **Be Careful!**
  - Know How Much *Poa* You Have
  - Can Discoloration Be Tolerated?
  - Can You Establish Turf in its Place?

- **During Play** – Actively Growing *Poa* is Better than Injured *Poa*

- **Seed Desirable Species** (Perennial Ryegrass)
Poa annua Suppression

- Football Fields: Apply in **Spring**
- Baseball Fields: Apply in **Fall**
- Do Not Apply During Hot Weather
- Label: Do Not Seed Within 6 Weeks Prior or 2 Weeks After Application
PGRs on Sports Fields

• “Pre-condition” turf prior to season – increased divot resistance

• Other uses – paint, non-sports events

• *Poa annua* suppression
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