



## Xonerate® Golf Technical Bulletin

**Chemical family:** Triazolinone

**Mode of Action:** PSII Inhibitor

**Uptake:** Occurs through both roots and shoots

**Overview:** Xonerate® Herbicide, which contains the active ingredient Amicarbazone, is a post emergent herbicide for annual bluegrass control (*Poa annua*) and other selected hard to control grassy weeds in cool and warm season turfgrasses. It is labeled for use on golf courses, seed and sod production fields, residential and commercial lawn sites, parks, and sports fields.

**Golf Course Use Sites:** Fairways, tees, rough and clubhouse grounds

**Target Weeds:** *Poa annua*, Tropical Signalgrass.

### General Use Notes:

Assess how much *Poa annua* you truly have and educate your membership/management on the potential for large, temporary voids in the desirable turf. Develop a plan to fill these voids through seeding and sound agronomics to encourage desirable turf to grow.

### Application Guidelines:

- Timing - Spring applications are most effective. Temperatures should consistently be in the **55F° - 85F°** degree range depending on turf type. **DO NOT** apply on Bentgrass when temperatures exceed 80°F.
- Ensure the root zone of the desirable turf is healthy and actively growing.
- Avoid mowing a day after application to allow for full foliar uptake.
- Soil Moisture – Adequate soil moisture must be present at time of application. If desirable turf is exhibiting signs of drought stress, do not apply until the desirable turf has recovered.
- Soil pH – At or below 7.4. If soil pH is higher, solubility of Amicarbazone increases, which may increase the risk of lateral movement. Risk of injury may also increase since the product is more water soluble resulting in a quicker uptake by the plant.
- Careful attention should be paid to slopes that drain onto green surfaces. A buffer of at least 5 feet is recommended.
- Re-seeding – wait 7 days after last application before re-seeding.
- If you do begin seeing signs of injury to the desirable turf, cease applications until the desirable turf has shown signs of recovery.



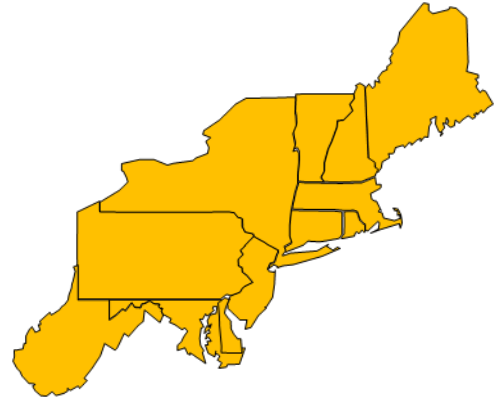
# NORTHEAST GOLF RECOMMENDATIONS



**Use Site:** Fairways and Tees

**Turf Types:** Bentgrass, Ryegrass

**Timing:** Applications should begin 2 - 4 weeks after bentgrass or ryegrass begins to actively grow.



## Application Recommendations

Turf Type	Location	Application Rate	Intervals	# of Applications	Irrigation	Air Temps (F)
Bentgrass	Fairways/Tees	1 oz per acre	14 days	4	3-4 hours after application. Enough to wash excess off of bentgrass	55° - 80°
Ryegrass	Fairways/Tees	3oz per acre	21 days	2	N/A	55° - 85°

**Use Site:** Roughs, Clubhouse Grounds

**Turf Types:** Kentucky Bluegrass, Fescue, Ryegrass

**Timing:** Applications should begin 2 - 4 weeks after bluegrass, fescue or ryegrass begins to actively grow.

**Restrictions:**

- Kentucky Bluegrass must be established for 12 months prior to applying Xonerate.
- Fescue and Ryegrass must be established for 6 months prior to applying Xonerate.

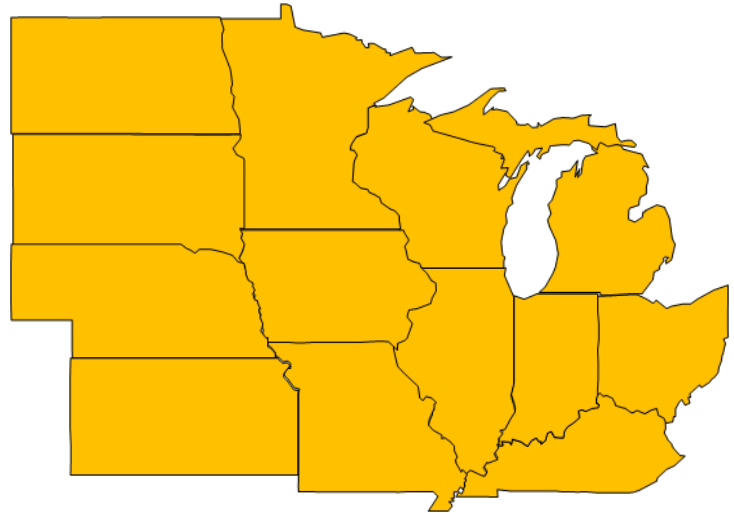
## Application Recommendations

Turf Type	Location	Application Rate	Intervals	# of applications	Irrigation	Air Temps (F)
Fescue/Bluegrass/Ryegrass	Roughs	2 oz per acre	21 days	2	N/A	55° - 85°

**Use Site:** Fairways and Tees

**Turf Types:** Bentgrass, Ryegrass

**Timing:** Applications should begin 2-4 weeks after bentgrass or ryegrass begins to actively grow.



### Application Recommendations

Turf Type	Location	Application Rate	Intervals	# of Applications	Irrigation	Air Temps (F)
Bentgrass	Fairways/Tees	1 oz per acre	14 days	4	3-4 hours after application. Enough to wash excess off of bentgrass	55° - 80°
Ryegrass	Fairways/Tees	3 oz per acre	21 days	2	N/A	55° - 85°

**Use Site:** Roughs, Clubhouse Grounds

**Turf Types:** Kentucky Bluegrass, Fescue, Ryegrass

**Timing:** Applications should begin 2 - 4 weeks after bentgrass or ryegrass begins to actively grow.

**Restrictions:**

- Kentucky Bluegrass should be established for 12 months prior to applying Xonerate.
- Fescue should be established for 6 months prior to applying Xonerate.

### Application Recommendations

Turf Type	Location	Application Rate	Intervals	# of applications	Irrigation	Air Temps (F)
Fescue/Bluegrass/ Ryegrass	Roughs/ Clubhouse Grounds	2 oz per acre	21 days	2	N/A	55° - 85°

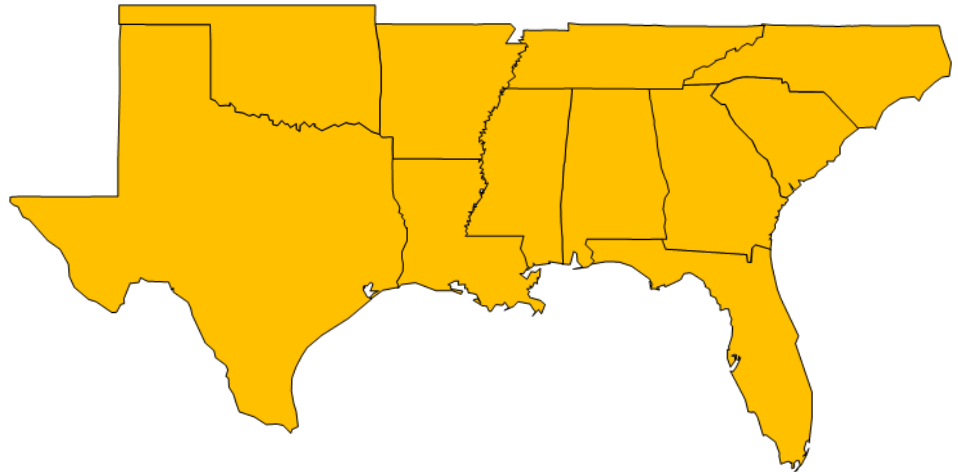


## SOUTHERN U.S. GOLF RECOMMENDATIONS

**Use Sites:** Fairways and Tees

**Turf Types:** Non Overseeded  
Bermuda

**Timing:** Spring/Fall



### Application Recommendations - Fall

Turf Type	Location	Application Rate	Intervals	# of applications	Irrigation	Air Temps (F)
Non Overseeded Bermuda	Fairways/Tees	3 oz per acre	21 days	2	N/A	No temperature restrictions with fall applications

**Use Sites:** Fairways and Tees

**Turf Types:** Overseeded Bermuda

**Timing:** Spring

**Restrictions:**

- Ryegrass should be established for 6 months prior to the 1<sup>st</sup> application
- Do not start applications until Ryegrass is actively growing and has recovered from and winter stress.

### Application Recommendations - Spring

Turf Type	Location	Application Rate	Intervals	# of applications	Irrigation	Air Temps (F)
Overseeded Bermuda with Ryegrass	Fairways/Tees	3 oz per acre	21 days	2 -3*	N/A	Temps not to exceed 85°

*\* 3rd application can be made if air temperatures remain below 85°F*



**Use Sites:** Fairways and Tees

**Turf Types:** Zoysia

**Timing:** Spring

**Restrictions:**

- Apply before Zoysia breaks dormancy



### Application Recommendations - Spring

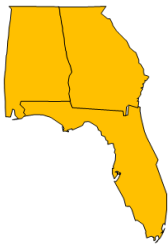
Turf Type	Location	Application Rate	Intervals	# of applications	Irrigation	Air Temps (F)
Zoysia	Fairways/ Tees	3 oz per acre	21 days	2	N/A	N/A

## Tropical Signalgrass Control

**Use Sites:** Fairways, Roughs, Tees

**Timing:** Fall/Spring

**Turf Types:** Bermuda, Seashore Paspalum, St. Augustinegrass



### Tropical Signalgrass – Fall

Turf Type	Xonerate Application Rate	Tank Mix Partner	Application rate	Intervals	# of applications
Bermuda	5 oz per acre	Tribute Total™	3.2 oz per acre	14 days	2
Bermuda	5 oz per acre	Dismiss South™	7.2 oz per acre	14 days	2
St. Augustinegrass	5 oz per acre	No Tank Mix Partners		14 days	2

### Tropical Signalgrass Control – Spring



Turf Type	Xonerate Application Rate	Tank Mix Partner	Application rate	Intervals	# of applications	Air Temps (F)
Bermuda	5 oz per acre	Celsius™	3.7 oz per acre	14 days	2	N/A
Bermuda	5 oz per acre	Dismiss South™	7.2 fl oz per acre	14 days	2	N/A
St Augustinegrass	5 oz per acre	Celsius™	3.7 oz per acre	14 days	2	Do not apply when temps exceed 90°



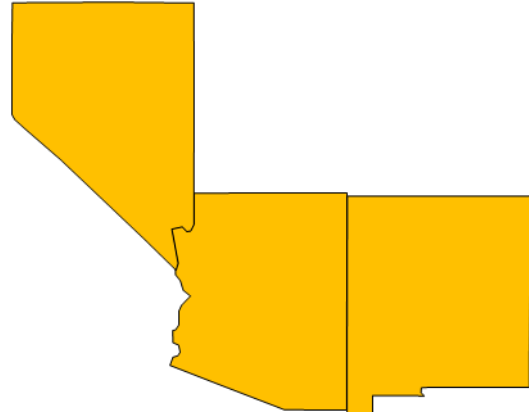
## DESERT SOUTHWEST GOLF RECOMMENDATIONS



**Use Sites:** Fairways and Tees

**Turf Types:** Overseeded Bermuda

**Timing:** Spring



### Restrictions:

- Ryegrass should be established for 6 months prior to 1<sup>st</sup> application
- Do not start applications until ryegrass is actively growing and has recovered from any Winter stress.

### Application Recommendations - Spring

Turf Type	Location	Application Rate	Intervals	# of applications	Irrigation	Air Temps (F)
Overseeded Bermuda with Ryegrass	Fairways/Tees	3 oz per acre	21 days	2 - 3*	N/A	55°- 85°

*\* 3rd application can be made if air temperatures remain below 85°F*

