Generic Plant Growth Regulators and Herbicides in Turf, How Do They Compare?

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Several herbicides and plant growth regulator (PGR) active ingredients have recently been introduced by generic manufacturers as proprietary patents have expired.
Introduction

R&D manufacturers invest returns into new product discovery and development as generic manufacturers do not.

Directly affects new product development
Introduction

- Herbicides comprise ~ 60% of generic pesticides (Ryan, 2002)
- In select facets of agriculture, there is growing need for products where price is determining factor (Ryan, 2002)
- Predictions indicate generic herbicides will likely gain additional attention in coming years
Introduction

Turfgrass managers often pose the following questions:

- What are the potential cost savings?
- Do generic herbicides vary in efficacy compared to proprietary products?
- Are there noted problems with formulations?
  - Product staying in solution
  - Clogging sprayer tips
Objectives

Do generic plant growth regulators and herbicides vary in efficacy compared to proprietary products?
Research trials were initiated to determine if differences existed among proprietary and generic formulations of select active ingredients.

- Preemergent smooth crabgrass control
- Postemergent smooth crabgrass control
- Foliar suppression of bermudagrass
Materials and Methods

- Preemergence smooth crabgrass control
  - Initial applications March 07 2006
  - Sequential applications May 02 2006
  - 5’ x 10’ plots

- Evaluated active ingredients included:
  - prodiamine
  - oxadiazon
  - oryzalin
Preemergent Smooth Crabgrass Control
with Prodiamine

Data collected 9-2-06, 180 DAIT. Rates are lb ai per acre. Sequential applied 8 WAIT. All products were 65 WDG

LSD=19.4
Preemergent Smooth Crabgrass Control with Oxadiazon

Data collected 9-2-06, 180 DAIT. Rates are lb ai per acre. All products were 50 WP.
Preemergent Smooth Crabgrass Control with Oryzalin

% Control

Surflan

Quali Pro

LSD=19.4

Data collected 9-2-06, 180 DAIT. Rates are lb ai per acre. Sequential applied 8 WAIT. All products were 4 FL.
Barricade

prodiamine 0.75 lb ai/a (8-15-06)

Quali Pro
Ronstar

oxadiazon 3 lb ai/a (8-15-06)

Quali Pro
Results

- Preemergence smooth crabgrass control
  - No significant differences existed in smooth crabgrass control through 180 DAIT
  - Excluding Barricade and Riverdale prodiamine 0.5 fb 0.25 lb ai, all preemergent herbicide treatments provided good to excellent smooth crabgrass control through 180 DAIT
Materials and Methods

- Postemergence smooth crabgrass control with quinclorac
  - Applications July 07 2006
  - 4’ x 6’ plots
  - Smooth crabgrass averaged 1 tiller in maturity
Postemergent Smooth Crabgrass Control with Quinclorac

Data collected 7-27-06, 20 DAT. Rates are product per acre. Quinclorac contained MSO 1.5 pt/a, MSMA contained NIS.
Postemergent Smooth Crabgrass Control with Quinclorac

Data collected 9-15-06, 70 DAT. Rates are product per acre. Quinclorac contained MSO 1.5 pt/a, MSMA contained NIS.

LSD=7.7
Results

Postemergence smooth crabgrass control with quinclorac

- At each evaluation time, no differences existed among quinclorac formulations. Additionally, no significant differences were present among quinclorac application rates.
- Each quinclorac application, regardless of formulation or rate, provided greater smooth crabgrass control than single application of MSMA.
Materials and Methods

- Trinexapac-ethyl for bermudagrass foliar suppression
  - ‘Tifsport’ bermudagrass maintained at 0.75 inch
  - Applications June 13, July 10, and August 07 2006
  - 4’ x 12’ plots
- Evaluated trinexapac-ethyl formulations (16 oz/a)
  - Primo Maxx
  - Quali Pro formulation A
  - Quali Pro formulation B
- Visually evaluated turf quality, caught clippings, oven dried, and compared to nontreated
Clippings were collected weekly beginning 7 DAIT and oven dried weights were recorded. % suppression was compared to nontreated. Trinexapac-ethyl was applied at 16 oz product per acre. * denotes significance compared to nontreated. No significant differences were discerned among formulations.
Effects of Trinexapac-ethyl on ‘Tifsport’ Bermudagrass Quality

Trinexapac-ethyl was applied at 16 oz product per acre. * denotes significance compared to nontreated. No significant differences were discerned among formulations.
Quali Pro

trinexapac-ethyl 16 oz/a every 4 wks (9-06-06)

Primo Maxx
Nontreated photo taken 9-06-06
Results

- Trinexapac-ethyl for bermudagrass foliar suppression
  - No significant differences were discerned among trinexapac-ethyl formulations for foliar growth suppression or turf quality; however, each reduced foliar growth and enhanced turf quality when compared to nontreated
Conclusions

- No significant differences were noted in herbicide or plant growth regulator efficacy when compared to proprietary products.
- Within our trials, no problems were noted with herbicide or plant growth regulator formulations.