

Evaluation of Mesotrione for Turf Safety in NTEP Trials-2006

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Objectives:

The objective of the 2006 mesotrione evaluation of turf safety in NTEP trials study was to evaluate Kentucky bluegrass cultivar differences in response to mesotrione applied at 0.25 lb ai/A.

Materials and Methods:

The expired 2000 NTEP Kentucky bluegrass trial was chosen as the study location. The bluegrass area consisted of 173 different cultivars (Table 1). A special sprayer was fabricated in order to treat one half of a 25 ft² plot area. Phytotoxicity ratings were made weekly on a scale of 9 to 1, where 9=no damage, 6 is acceptable, and 1=dead turf. This was done in order to see if there was any phytotoxicity in each of the individual plots. An initial treatment of mesotrione 4 SC was applied at 0.25 lb ai/A on 22 June, 2006. A second application, using the same rate of 0.25 lb ai/A, was applied three weeks later on 13 July. Phytotoxicity ratings were taken for three weeks following each treatment. The soil on the site is a disturbed Nicollet clay loam with a pH of 7.25, 2 ppm P, and 75 ppm K.

Results:

No phytotoxicity was observed on any of the cultivars following the first application (Table 1). Following the second application on 13 July, some significant phytotoxicity was observed on certain cultivars on the 20 July rating date. This damage disappeared before the 27 July rating and did not reappear at any time during the remainder of the study.

The cultivars that showed the most response to mesotrione on 20 July were in order from the cultivar showing the most response: HV 140, Bedazzled, Boomerang, A97-1336, A97-1567, Chelsea, Julius, Julia, Boutique, SRX 2284, PST-B3-170, B4-128A, North Star, Baron.

Table 1. Phytotoxicity ratings for the 173 Kentucky bluegrass cultivars following applications of mesotrione.

Cultivar	Phyotoxicity rating on scale of 9 to 1; 9=no damage					
	29-Jun	6-Jul	13-Jul	20-Jul	27-Jul	3-Aug
Midnight	9.0	9.0	9.0	8.7	9.0	9.0
Baron	9.0	9.0	9.0	8.0	9.0	9.0
Lily	9.0	9.0	9.0	8.0	9.0	9.0
Limerick	9.0	9.0	9.0	8.0	9.0	9.0
Bodacious	9.0	9.0	9.0	8.3	9.0	9.0
Bedazzled	9.0	9.0	9.0	7.7	9.0	9.0
Boomerang	9.0	9.0	9.0	7.7	9.0	9.0
Eagleton	9.0	9.0	9.0	8.3	9.0	9.0
HV 140	9.0	9.0	9.0	7.3	9.0	9.0
Pp H 6370	9.0	9.0	9.0	8.0	9.0	9.0
Pp H 6366	9.0	9.0	9.0	8.0	9.0	9.0
Pp H 7929	9.0	9.0	9.0	8.0	9.0	9.0
Pp H 7832	9.0	9.0	9.0	8.0	9.0	9.0
Pp H 7097	9.0	9.0	9.0	8.3	9.0	9.0
A96-402	9.0	9.0	9.0	8.0	9.0	9.0
A97-1336	9.0	9.0	9.0	7.7	9.0	9.0
Shamrock	9.0	9.0	9.0	8.0	9.0	9.0
Wellington	9.0	9.0	9.0	8.3	9.0	9.0
Wildwood	9.0	9.0	9.0	8.7	9.0	9.0
Hallmark	9.0	9.0	9.0	8.0	9.0	9.0
A93-200	9.0	9.0	9.0	8.3	9.0	9.0
H94-293	9.0	9.0	9.0	8.0	9.0	9.0

Coventry	9.0	9.0	9.0	8.3	9.0	9.0
PST-1701	9.0	9.0	9.0	8.0	9.0	9.0
PST-B5-125	9.0	9.0	9.0	8.0	9.0	9.0
PST-604	9.0	9.0	9.0	8.0	9.0	9.0
PST-108-79	9.0	9.0	9.0	8.0	9.0	9.0
PST-1QG-27	9.0	9.0	9.0	8.0	9.0	9.0
PST-161	9.0	9.0	9.0	8.7	9.0	9.0
PST-B5-89	9.0	9.0	9.0	8.3	9.0	9.0
Brilliant	9.0	9.0	9.0	8.0	9.0	9.0
PST-222	9.0	9.0	9.0	8.3	9.0	9.0
A98-739	9.0	9.0	9.0	9.0	9.0	9.0
PST-York Harbor 4	9.0	9.0	9.0	8.0	9.0	9.0
PST-1BMY	9.0	9.0	9.0	8.0	9.0	9.0
A97-1439	9.0	9.0	9.0	8.3	9.0	9.0
A97-1449	9.0	9.0	9.0	8.3	9.0	9.0
Apollo	9.0	9.0	9.0	8.0	9.0	9.0
A97-1432	9.0	9.0	9.0	8.0	9.0	9.0
HV 238	9.0	9.0	9.0	8.3	9.0	9.0
Pick-232	9.0	9.0	9.0	8.0	9.0	9.0
A97-1567	9.0	9.0	9.0	7.7	9.0	9.0
PST-1804	9.0	9.0	9.0	8.0	9.0	9.0
B3-185	9.0	9.0	9.0	8.0	9.0	9.0
B5-43	9.0	9.0	9.0	8.0	9.0	9.0
B5-45	9.0	9.0	9.0	8.7	9.0	9.0
IB7-308	9.0	9.0	9.0	8.3	9.0	9.0
H92-203	9.0	9.0	9.0	8.0	9.0	9.0
B3-171	9.0	9.0	9.0	8.0	9.0	9.0
B5-144	9.0	9.0	9.0	8.7	9.0	9.0
Alpine	9.0	9.0	9.0	8.3	9.0	9.0
PST-B4-246	9.0	9.0	9.0	8.0	9.0	9.0
PST-H6-150	9.0	9.0	9.0	8.0	9.0	9.0
Pick 453	9.0	9.0	9.0	8.3	9.0	9.0
Pick 417	9.0	9.0	9.0	8.0	9.0	9.0
Limousine	9.0	9.0	9.0	8.0	9.0	9.0
Quantum Leap	9.0	9.0	9.0	8.7	9.0	9.0
Envicta	9.0	9.0	9.0	8.3	9.0	9.0
Goldrush	9.0	9.0	9.0	9.0	9.0	9.0
Misty	9.0	9.0	9.0	8.3	9.0	9.0
Ascot	9.0	9.0	9.0	8.3	9.0	9.0
BH 00-6002	9.0	9.0	9.0	8.3	9.0	9.0
Fairfax	9.0	9.0	9.0	8.3	9.0	9.0
Abbey	9.0	9.0	9.0	8.0	9.0	9.0
BH 00-6003	9.0	9.0	9.0	8.0	9.0	9.0
Ba 81-058	9.0	9.0	9.0	8.0	9.0	9.0
Raven	9.0	9.0	9.0	8.3	9.0	9.0
Ba 83-113	9.0	9.0	9.0	8.0	9.0	9.0
Marquis	9.0	9.0	9.0	8.3	9.0	9.0
Ba 84-140	9.0	9.0	9.0	8.3	9.0	9.0
Ba 82-288	9.0	9.0	9.0	8.3	9.0	9.0
Chateau	9.0	9.0	9.0	8.0	9.0	9.0

Ba 00-6001	9.0	9.0	9.0	8.0	9.0	9.0
CVB-20631	9.0	9.0	9.0	8.3	9.0	9.0
Chelsea	9.0	9.0	9.0	7.7	9.0	9.0
A97-1409	9.0	9.0	9.0	8.3	9.0	9.0
A96-451	9.0	9.0	9.0	8.0	9.0	9.0
Julius	9.0	9.0	9.0	7.7	9.0	9.0
Allure	9.0	9.0	9.0	8.0	9.0	9.0
A97-1330	9.0	9.0	9.0	8.0	9.0	9.0
H92-558	9.0	9.0	9.0	8.0	9.0	9.0
Julia	9.0	9.0	9.0	7.7	9.0	9.0
Brooklawn	9.0	9.0	9.0	8.3	9.0	9.0
Boutique	9.0	9.0	9.0	7.7	9.0	9.0
NA-K991	9.0	9.0	9.0	8.7	9.0	9.0
NA-K992	9.0	9.0	9.0	8.3	9.0	9.0
Showcase	9.0	9.0	9.0	8.3	9.0	9.0
Arcadia	9.0	9.0	9.0	9.0	9.0	9.0
SRX 2394	9.0	9.0	9.0	8.3	9.0	9.0
SRX 26351	9.0	9.0	9.0	8.3	9.0	9.0
SRX 27921	9.0	9.0	9.0	8.3	9.0	9.0
Sonoma	9.0	9.0	9.0	8.0	9.0	9.0
Bordeaux	9.0	9.0	9.0	8.3	9.0	9.0
Cabernet	9.0	9.0	9.0	9.0	9.0	9.0
Champagne	9.0	9.0	9.0	8.0	9.0	9.0
A96-427	9.0	9.0	9.0	8.3	9.0	9.0
A97-1715	9.0	9.0	9.0	8.0	9.0	9.0
Jewel	9.0	9.0	9.0	8.0	9.0	9.0
Unknown	9.0	9.0	9.0	8.7	9.0	9.0
Blue Knight	9.0	9.0	9.0	8.7	9.0	9.0
DLF 76-9032	9.0	9.0	9.0	8.3	9.0	9.0
DLF 76-9034	9.0	9.0	9.0	8.7	9.0	9.0
DLF 76-9036	9.0	9.0	9.0	8.0	9.0	9.0
DLF 76-9037	9.0	9.0	9.0	8.0	9.0	9.0
SI A96-386	9.0	9.0	9.0	8.3	9.0	9.0
SRX 2114	9.0	9.0	9.0	8.3	9.0	9.0
SRX 2284	9.0	9.0	9.0	7.7	9.0	9.0
Pro Seeds-453	9.0	9.0	9.0	8.3	9.0	9.0
SRX OG245	9.0	9.0	9.0	8.0	9.0	9.0
99AN-53	9.0	9.0	9.0	8.0	9.0	9.0
A98-881	9.0	9.0	9.0	8.3	9.0	9.0
Jefferson	9.0	9.0	9.0	8.3	9.0	9.0
A98-407	9.0	9.0	9.0	8.3	9.0	9.0
A98-1028	9.0	9.0	9.0	8.3	9.0	9.0
A98-183	9.0	9.0	9.0	8.3	9.0	9.0
A98-1275	9.0	9.0	9.0	8.0	9.0	9.0
A98-296	9.0	9.0	9.0	8.7	9.0	9.0
A98-304	9.0	9.0	9.0	8.0	9.0	9.0
A98-139	9.0	9.0	9.0	8.7	9.0	9.0
A98-365	9.0	9.0	9.0	8.3	9.0	9.0
Kenblue	9.0	9.0	9.0	8.7	9.0	9.0
Princeton 105	9.0	9.0	9.0	8.3	9.0	9.0

Impact	9.0	9.0	9.0	9.0	9.0	9.0
Total Eclipse	9.0	9.0	9.0	9.0	9.0	9.0
Odyssey	9.0	9.0	9.0	8.3	9.0	9.0
Chicago II	9.0	9.0	9.0	8.7	9.0	9.0
NuGlade	9.0	9.0	9.0	8.0	9.0	9.0
J-1515	9.0	9.0	9.0	9.0	9.0	9.0
J-2487	9.0	9.0	9.0	8.3	9.0	9.0
J-1368	9.0	9.0	9.0	8.7	9.0	9.0
J-1838	9.0	9.0	9.0	9.0	9.0	9.0
J-2561	9.0	9.0	9.0	8.3	9.0	9.0
J-2885	9.0	9.0	9.0	8.7	9.0	9.0
J-1513	9.0	9.0	9.0	9.0	9.0	9.0
Everest	9.0	9.0	9.0	8.7	9.0	9.0
J-1420	9.0	9.0	9.0	8.3	9.0	9.0
J-1648	9.0	9.0	9.0	9.0	9.0	9.0
J-2890	9.0	9.0	9.0	8.7	9.0	9.0
Everglade	9.0	9.0	9.0	8.7	9.0	9.0
J-2695	9.0	9.0	9.0	8.7	9.0	9.0
J-1665	9.0	9.0	9.0	9.0	9.0	9.0
J-1880	9.0	9.0	9.0	8.3	9.0	9.0
Rugby II	9.0	9.0	9.0	8.7	9.0	9.0
Award	9.0	9.0	9.0	9.0	9.0	9.0
Rambo	9.0	9.0	9.0	8.3	9.0	9.0
Freedom II	9.0	9.0	9.0	8.7	9.0	9.0
Liberator	9.0	9.0	9.0	8.3	9.0	9.0
GO-9LM9	9.0	9.0	9.0	8.3	9.0	9.0
Pick 113-3	9.0	9.0	9.0	8.0	9.0	9.0
Langara	9.0	9.0	9.0	8.0	9.0	9.0
A96-739	9.0	9.0	9.0	8.7	9.0	9.0
PST-H5-35	9.0	9.0	9.0	9.0	9.0	9.0
PST-B3-170	9.0	9.0	9.0	7.7	9.0	9.0
B4-128A	9.0	9.0	9.0	7.7	9.0	9.0
PST-731	9.0	9.0	9.0	8.7	9.0	9.0
Washington	9.0	9.0	9.0	8.7	9.0	9.0
A96-742	9.0	9.0	9.0	8.3	9.0	9.0
A97-857	9.0	9.0	9.0	8.3	9.0	9.0
BAR Pp 0468	9.0	9.0	9.0	8.3	9.0	9.0
BAR Pp 0471	9.0	9.0	9.0	8.0	9.0	9.0
BAR Pp 0566	9.0	9.0	9.0	8.0	9.0	9.0
BAR Pp 0573	9.0	9.0	9.0	8.7	9.0	9.0
Bartitia	9.0	9.0	9.0	8.3	9.0	9.0
Baritone	9.0	9.0	9.0	8.7	9.0	9.0
Bariris	9.0	9.0	9.0	8.0	9.0	9.0
Barzan	9.0	9.0	9.0	8.3	9.0	9.0
Baronie	9.0	9.0	9.0	8.0	9.0	9.0
Unique	9.0	9.0	9.0	8.0	9.0	9.0
Serene	9.0	9.0	9.0	8.3	9.0	9.0
Moonlight	9.0	9.0	9.0	8.7	9.0	9.0
Blackstone	9.0	9.0	9.0	8.7	9.0	9.0
Rita	9.0	9.0	9.0	8.3	9.0	9.0

North Star	9.0	9.0	9.0	7.7	9.0	9.0
LSD 0.05	NS	NS	NS	0.8	NS	NS