

Safety of Mesotrione 4SC on Kentucky Bluegrass Cultivars
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Background/Objective: Determine safety of mesotrione 4SC on Kentucky bluegrass cultivars.

Site Information

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|---|--|
| Location: | William H. Daniel Research and Diagnostic Center |
| Soil Type: | Starks-Fincastle silt loam |
| Soil pH: | 7.2 |
| Turfgrass Species: | Kentucky bluegrass |
| Turf Condition: | Low maintenance |
| Turf Management: Mowing Height (in): | 2.5 inch |
| Fertilization: | 2 lbs N/M/yr |
| Irrigation: | To prevent death |

Application Information

| | |
|---|--------------------------|
| Spray Volume (gal 1000 ft⁻²): | 2 |
| Spray Pressure: | 30psi |
| Spray Nozzle: | 8001.5 |
| Spray Equipment: | CO ₂ backpack |
| Irrigation After Application: | None |
| Replications: | 3 |
| Plot Size (ft): | 4 X 4 |

Mesotrione 4SC was applied at 0.25 lbs ai /A/app on 22 May and 12 June 2006. Applications were stripped across one-half of each plot on the 2001 NTEP Kentucky bluegrass study. Since treatments could not be randomized, this study could not be statistically analyzed.

Results:

- Out of 178 cultivars, only 7 cultivars showed phytotoxicity that was considered unacceptable (<7.0) and this was primarily after the initial application.
- Out of 178 cultivars, another 46 cultivars showed noticeable phytotoxicity (ratings between 7.0 and 8.0) and again this was primarily after the initial application
- No phytotoxicity was seen on any of the cultivars by 12 June after the first application and by 29 June after the second application.

Table 1. Injury^a to NTEP Kentucky bluegrass cultivars from two applications of mesotrione at 0.25 lbs ai/A/app applied on 22 May and 12 June 2006.

| Cultivar | 31-May | 7-Jun | 12-Jun | 22-Jun | 29-Jun |
|--------------------------|---------------|--------------|---------------|---------------|---------------|
| A97-1432 | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 |
| A97-857 | 9.0 | 9.0 | 9.0 | 8.7 | 9.0 |
| A98-139 | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 |
| A98-183 | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 |
| A98-365 | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 |
| Allure | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 |
| B5-45 | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 |
| Ba 82-288 | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 |
| Ba 84-140 | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 |
| BAR Pp 0566 | 9.0 | 9.0 | 9.0 | 8.7 | 9.0 |
| Baronette (Ba 81-058) | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 |
| Barrister (J-1665) | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 |
| Blacksburg II (PST-1BMY) | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 |
| Blackstone | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 |
| Bodacious | 9.0 | 9.0 | 9.0 | 8.7 | 9.0 |
| Boomerang | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 |
| Cabernet | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 |
| Chateau | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 |
| Coventry | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 |
| DLF 76-9032 | 9.0 | 9.0 | 9.0 | 8.7 | 9.0 |
| Everglade | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 |
| Excursion (J-1648) | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 |
| GO-9LM9 | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 |
| H92-558 | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 |
| HV 238 | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 |
| IB7-308 | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 |
| Impact | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 |
| J-1513 | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 |
| J-2561 | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 |
| J-2695 | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 |
| J-2890 | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 |
| Kenblue | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 |
| Lily | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 |
| Limerick | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 |
| Midnight | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 |
| Moonlight | 9.0 | 9.0 | 9.0 | 8.7 | 9.0 |
| NA-K991 | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 |
| Odyssey | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 |
| Pp H 6370 | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 |
| PST-161 | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 |
| PST-B5-125 | 9.0 | 9.0 | 9.0 | 8.3 | 9.0 |
| PST-B5-89 | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 |

Table 1. Injury^a to NTEP Kentucky bluegrass cultivars from two applications of mesotrione at 0.25 lbs ai/A/app applied on 22 May and 12 June 2006 (*continued*).

| Cultivar | 31-May | 7-Jun | 12-Jun | 22-Jun | 29-Jun |
|--------------------------|---------------|--------------|---------------|---------------|---------------|
| PST-York Harbor 4 | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 |
| Quantum Leap | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 |
| Rita | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 |
| Rugby II | 9.0 | 9.0 | 9.0 | 8.7 | 9.0 |
| SI A96-386 | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 |
| SRX 2114 | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 |
| Unique | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 |
| Washington | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 |
| Wellington | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 |
| 99AN-53 | 8.7 | 9.0 | 9.0 | 9.0 | 9.0 |
| A97-1409 | 8.7 | 9.0 | 9.0 | 9.0 | 9.0 |
| A98-1028 | 8.7 | 9.0 | 9.0 | 9.0 | 9.0 |
| A98-881 | 8.7 | 9.0 | 9.0 | 9.0 | 9.0 |
| Arcadia | 8.7 | 9.0 | 9.0 | 9.0 | 9.0 |
| Award | 8.7 | 9.0 | 9.0 | 9.0 | 9.0 |
| B5-144 | 8.7 | 9.0 | 9.0 | 9.0 | 9.0 |
| Bariris | 8.7 | 9.0 | 9.0 | 9.0 | 9.0 |
| Barzan | 8.7 | 9.0 | 9.0 | 8.3 | 9.0 |
| BH 00-6002 | 8.7 | 9.0 | 9.0 | 9.0 | 9.0 |
| Bluestone (PST-731) | 8.7 | 9.0 | 9.0 | 8.0 | 9.0 |
| Brilliant | 8.7 | 9.0 | 9.0 | 9.0 | 9.0 |
| Champagne | 8.7 | 9.0 | 9.0 | 9.0 | 9.0 |
| Champlain (A98-1275) | 8.7 | 9.0 | 9.0 | 9.0 | 9.0 |
| DLF 76-9034 | 8.7 | 9.0 | 9.0 | 9.0 | 9.0 |
| DLF 76-9036 | 8.7 | 9.0 | 9.0 | 9.0 | 9.0 |
| Everest | 8.7 | 9.0 | 9.0 | 8.3 | 9.0 |
| Fairfax | 8.7 | 9.0 | 9.0 | 9.0 | 9.0 |
| Goldstar (A98-296) | 8.7 | 9.0 | 9.0 | 9.0 | 9.0 |
| Hallmark | 8.7 | 9.0 | 9.0 | 9.0 | 9.0 |
| J-1420 | 8.7 | 9.0 | 9.0 | 9.0 | 9.0 |
| J-1515 | 8.7 | 9.0 | 9.0 | 9.0 | 9.0 |
| J-1838 | 8.7 | 9.0 | 9.0 | 9.0 | 9.0 |
| Jewel | 8.7 | 9.0 | 9.0 | 9.0 | 9.0 |
| Julia | 8.7 | 9.0 | 9.0 | 9.0 | 9.0 |
| Liberator | 8.7 | 9.0 | 9.0 | 9.0 | 9.0 |
| Moon Shadow (Pick 113-3) | 8.7 | 9.0 | 9.0 | 9.0 | 9.0 |
| NA-K992 | 8.7 | 9.0 | 9.0 | 9.0 | 9.0 |
| Pick 417 | 8.7 | 9.0 | 9.0 | 9.0 | 9.0 |
| Pick 453 | 8.7 | 9.0 | 9.0 | 9.0 | 9.0 |
| Pp H 7929 | 8.7 | 9.0 | 9.0 | 9.0 | 9.0 |
| Pro Seeds-453 | 8.7 | 9.0 | 9.0 | 9.0 | 9.0 |
| PST-1804 | 8.7 | 9.0 | 9.0 | 9.0 | 9.0 |

Table 1. Injury^a to NTEP Kentucky bluegrass cultivars from two applications of mesotrione at 0.25 lbs ai/A/app applied on 22 May and 12 June 2006 (*continued*).

| Cultivar | 31-May | 7-Jun | 12-Jun | 22-Jun | 29-Jun |
|---------------------|---------------|--------------|---------------|---------------|---------------|
| PST-604 | 8.7 | 9.0 | 9.0 | 9.0 | 9.0 |
| Raven | 8.7 | 9.0 | 9.0 | 9.0 | 9.0 |
| Serene | 8.7 | 9.0 | 9.0 | 8.3 | 9.0 |
| Shamrock | 8.7 | 9.0 | 9.0 | 9.0 | 9.0 |
| SRX OG245 | 8.7 | 9.0 | 9.0 | 9.0 | 9.0 |
| Total Eclipse | 8.7 | 9.0 | 9.0 | 9.0 | 9.0 |
| Unknown | 8.7 | 9.0 | 9.0 | 9.0 | 9.0 |
| Wildwood | 8.7 | 9.0 | 9.0 | 9.0 | 9.0 |
| A97-1330 | 8.3 | 9.0 | 9.0 | 8.7 | 9.0 |
| Alpine | 8.3 | 9.0 | 9.0 | 9.0 | 9.0 |
| Ascot | 8.3 | 9.0 | 9.0 | 9.0 | 9.0 |
| B5-43 | 8.3 | 9.0 | 9.0 | 9.0 | 9.0 |
| BAR Pp 0573 | 8.3 | 9.0 | 9.0 | 8.7 | 9.0 |
| Baritone | 8.3 | 9.0 | 9.0 | 9.0 | 9.0 |
| Boutique | 8.3 | 9.0 | 9.0 | 9.0 | 9.0 |
| Bratitia | 8.3 | 9.0 | 9.0 | 8.3 | 9.0 |
| Brooklawn | 8.3 | 9.0 | 9.0 | 9.0 | 9.0 |
| Freedom II | 8.3 | 9.0 | 9.0 | 8.3 | 9.0 |
| Goldrush | 8.3 | 9.0 | 9.0 | 9.0 | 9.0 |
| H92-203 | 8.3 | 9.0 | 9.0 | 8.7 | 9.0 |
| J-1368 | 8.3 | 9.0 | 9.0 | 9.0 | 9.0 |
| J-2885 | 8.3 | 9.0 | 9.0 | 9.0 | 9.0 |
| Lakeshore (A93-200) | 8.3 | 9.0 | 9.0 | 9.0 | 9.0 |
| Mallard (A97-1439) | 8.3 | 9.0 | 9.0 | 9.0 | 9.0 |
| Pp H 7097 | 8.3 | 9.0 | 9.0 | 8.7 | 9.0 |
| Pp H 7832 | 8.3 | 9.0 | 9.0 | 8.3 | 9.0 |
| Princeton 105 | 8.3 | 9.0 | 9.0 | 9.0 | 9.0 |
| PST-108-79 | 8.3 | 9.0 | 9.0 | 9.0 | 9.0 |
| PST-1QG-27 | 8.3 | 9.0 | 9.0 | 9.0 | 9.0 |
| PST-222 | 8.3 | 9.0 | 9.0 | 8.7 | 9.0 |
| PST-B3-170 | 8.3 | 9.0 | 9.0 | 9.0 | 9.0 |
| PST-B4-246 | 8.3 | 9.0 | 9.0 | 9.0 | 9.0 |
| PST-H5-35 | 8.3 | 9.0 | 9.0 | 9.0 | 9.0 |
| Sonoma | 8.3 | 9.0 | 9.0 | 9.0 | 9.0 |
| SRX 27921 | 8.3 | 9.0 | 9.0 | 9.0 | 9.0 |
| Tsunami (J-2487) | 8.3 | 9.0 | 9.0 | 8.3 | 9.0 |
| A96-427 | 8.0 | 9.0 | 9.0 | 8.7 | 9.0 |
| A96-451 | 8.0 | 9.0 | 9.0 | 9.0 | 9.0 |
| A96-739 | 8.0 | 9.0 | 9.0 | 9.0 | 9.0 |
| Abbey | 8.0 | 9.0 | 9.0 | 9.0 | 9.0 |
| Ba 00-6001 | 8.0 | 9.0 | 9.0 | 9.0 | 9.0 |
| BAR Pp 0468 | 8.0 | 9.0 | 9.0 | 8.7 | 9.0 |

Table 1. Injury^a to NTEP Kentucky bluegrass cultivars from two applications of mesotrione at 0.25 lbs ai/A/app applied on 22 May and 12 June 2006 (*continued*).

| Cultivar | 31-May | 7-Jun | 12-Jun | 22-Jun | 29-Jun |
|-----------------------|---------------|--------------|---------------|---------------|---------------|
| Baron | 8.0 | 9.0 | 9.0 | 9.0 | 9.0 |
| Beyond (J-1880) | 8.0 | 9.0 | 9.0 | 9.0 | 9.0 |
| Blue Knight | 8.0 | 9.0 | 9.0 | 9.0 | 9.0 |
| Blue Ridge (A97-1449) | 8.0 | 9.0 | 9.0 | 9.0 | 9.0 |
| Bordeaux | 8.0 | 9.0 | 9.0 | 9.0 | 9.0 |
| Chelsea | 8.0 | 9.0 | 9.0 | 9.0 | 9.0 |
| Chicago II | 8.0 | 9.0 | 9.0 | 9.0 | 9.0 |
| CVB-20631 | 8.0 | 9.0 | 9.0 | 9.0 | 9.0 |
| DLF 76-9037 | 8.0 | 9.0 | 9.0 | 9.0 | 9.0 |
| Eagleton | 8.0 | 9.0 | 9.0 | 8.3 | 9.0 |
| Limousine | 8.0 | 9.0 | 9.0 | 8.7 | 9.0 |
| Marquis | 8.0 | 9.0 | 9.0 | 9.0 | 9.0 |
| Midnight II (A98-739) | 8.0 | 9.0 | 9.0 | 9.0 | 9.0 |
| Royale (A97-1336) | 8.0 | 9.0 | 9.0 | 9.0 | 9.0 |
| Royce (A98-304) | 8.0 | 9.0 | 9.0 | 8.0 | 9.0 |
| SRX 26351 | 8.0 | 9.0 | 9.0 | 8.7 | 9.0 |
| A96-742 | 7.7 | 9.0 | 9.0 | 8.3 | 9.0 |
| A98-407 | 7.7 | 9.0 | 9.0 | 9.0 | 9.0 |
| Apollo | 7.7 | 9.0 | 9.0 | 9.0 | 9.0 |
| B3-171 | 7.7 | 9.0 | 9.0 | 8.7 | 9.0 |
| B3-185 | 7.7 | 9.0 | 9.0 | 8.7 | 9.0 |
| Baronie | 7.7 | 9.0 | 9.0 | 8.7 | 9.0 |
| Langara | 7.7 | 9.0 | 9.0 | 9.0 | 9.0 |
| NuGlade | 7.7 | 9.0 | 9.0 | 8.0 | 9.0 |
| Pick-232 | 7.7 | 9.0 | 9.0 | 9.0 | 9.0 |
| PST-1701 | 7.7 | 9.0 | 9.0 | 9.0 | 9.0 |
| PST-H6-150 | 7.7 | 9.0 | 9.0 | 9.0 | 9.0 |
| Showcase | 7.7 | 9.0 | 9.0 | 8.7 | 9.0 |
| A97-1715 | 7.3 | 9.0 | 9.0 | 8.3 | 9.0 |
| Arrow (A97-1567) | 7.3 | 9.0 | 9.0 | 8.7 | 9.0 |
| BAR Pp 0471 | 7.3 | 9.0 | 9.0 | 8.7 | 9.0 |
| Bedazzled | 7.3 | 9.0 | 9.0 | 8.7 | 9.0 |
| Envicta | 7.3 | 9.0 | 9.0 | 9.0 | 9.0 |
| H94-293 | 7.3 | 9.0 | 9.0 | 8.3 | 9.0 |
| Jefferson | 7.3 | 9.0 | 9.0 | 8.7 | 9.0 |
| Rambo | 7.3 | 9.0 | 9.0 | 8.0 | 9.0 |
| SRX 2394 | 7.3 | 9.0 | 9.0 | 9.0 | 9.0 |
| BH 00-6003 | 7.0 | 9.0 | 9.0 | 8.0 | 9.0 |
| Misty | 7.0 | 9.0 | 9.0 | 8.3 | 9.0 |

Table 1. Injury^a to NTEP Kentucky bluegrass cultivars from two applications of mesotrione at 0.25 lbs ai/A/app applied on 22 May and 12 June 2006 (*continued*).

| Cultivar | 31-May | 7-Jun | 12-Jun | 22-Jun | 29-Jun |
|-----------------------|---------------|--------------|---------------|---------------|---------------|
| Monte Carlo (A96-402) | 7.0 | 9.0 | 9.0 | 8.7 | 9.0 |
| Ba 83-113 | 6.7 | 9.0 | 9.0 | 9.0 | 9.0 |
| Julius | 6.7 | 8.3 | 9.0 | 7.3 | 9.0 |
| SR 2284 (SRX 2284) | 6.7 | 9.0 | 9.0 | 8.0 | 9.0 |
| HV 140 | 6.0 | 9.0 | 9.0 | 7.3 | 9.0 |
| North Star | 6.0 | 9.0 | 9.0 | 6.3 | 9.0 |
| B4-128A | 5.7 | 8.3 | 9.0 | 5.7 | 9.0 |
| Pp H 6366 | 5.7 | 8.3 | 9.0 | 7.3 | 9.0 |