

# TRIAD SELECT™

**Herbicide Odor Comparison Study** Dr. Shawn Askew, Virginia Tech, July 15, 2017

## Trial Objectives

To compare the post-application odor characteristics of various commercial turf herbicides.

## Materials & Methods

- 1) An experimental unit included a unique treated area (3' x 6') at a unique time. A randomized list of all experimental units was created and treatments were applied and odor evaluated separately over space and time for each experimental unit, henceforth called a "plot".
- 2) A plot was sprayed with the next herbicide on the random list and a plastic chamber immediately placed over it. Three odor evaluators then took turns following the procedures in the Nasal Ranger user manual to determine the dilution to threshold (D/T) value of the recently treated plot.
- 3) After the D/T data were collected, the chamber was removed and placed on its side to allow fresh air exchange and to avoid any latent odor. The time of spray was recorded for each experimental unit and the three evaluators returned to the same plot after 20 minutes, replaced the plastic chamber, and measured D/T again. It took approximately 18 minutes to spray all 5 treatments in each replicate and collect initial data on each and another 15 minutes to collect the "20-min after spray" data. Once the initial and 20 minute data were collected for the first replicate, the spraying commenced for the 2nd replicate and so on.

## Trial Results & Conclusions

When evaluated immediately after spraying, Triad Select™ and Triplet® Low Odor had the lowest D/T values of 13.58 and 15.83, respectively. By comparison, Trimec® 992, Triplet® SF, and SpeedZone® could be detected at 30, 35, and 42.5 D/T, respectively. Thus, it took 2.6 times more odor-containing air before evaluators detected Triad Select compared to Triplet SF. We also noticed that odor from all products tended to dissipate rapidly. Triad Select seemed to dissipate more rapidly than other products. SpeedZone and Triplet SF seemed to have stronger odor that lasted longer.

These data suggest that Triad Select is similar to Triplet Low Odor in that it has less odor than some competitor products. Our data does not speak to how "objectionable" the odor was. The strong chemical odor of SpeedZone was considerably more objectionable to most evaluators compared to the other four products. In preliminary studies on turf, it became apparent that any odor generated by Triad Select or Triplet Low odor would be quickly replaced or overpowered by the odor of turfgrass.

- Triad Select provided the lowest dilution to threshold (D/T) ratio of any of the herbicides tested.
- Triad Select presented 1.2, 2.2, 2.6 and 3.1 times less odor-containing air than Triplet Low Odor, Trimec 992, Triplet SF and SpeedZone, respectively.
- Triad Select odor is quickly replaced or overpowered by the smell of turfgrass.

**Odor Comparison of Triad Select vs Four Competitive Turf Herbicides**

