

Tank Mix Restricted Full Field Applications at Higher Temperatures (85-95°F)

Bayer appreciates EPA's ongoing efforts in conducting a robust volatility risk assessment for the KHNP0090 Herbicide label. During the Touchpoint 1 meeting on May 12, 2025, EPA presented, as an option, a volatility mitigation menu that was categorized into three temperature groupings: <75°F, 75-85°F, and 85-95°F. This temperature is based on a 48-hour maximum temperature post-application. Applications are not allowed when maximum temperature over 48 hours is predicted to be above 95°F.

For the higher temperature grouping (ie. 85-95°F), EPA proposed addition of 40 fl oz/A of volatility reducing adjuvant (VRA) to the tank mix along with partial field applications (ie. 60% of the field). The remaining 40% can be treated 2 days after the initial application. The data supporting this analysis comes from the area wide modeling with 30%, 40% and 50% crop treated which showed that a 40% decrease is needed to decrease air concentration below the population level endpoint.

To increase the options to growers for applications made at this higher temperature grouping (i.e. 85-95°F), Bayer would appreciate if EPA could consider two sets of data that EPA either already has or has reviewed before that might allow for full field application with certain tank mix restrictions.

The first dataset is from May 2024, wherein Bayer submitted to EPA a humidome study (**MRID 52413803**). This study provides dicamba air concentration for several dicamba products with and without glyphosate as a tank mix partner and with two levels of VRA (20 and 30 fl oz/A). This humidome study was conducted over 24 hours where the temperature was held at 95°F. One of the treatments in this study included Xtendimax with VaporGrip Technology (XtendiMax), with and without Roundup Powermax III (a glyphosate formulation at 30 fl oz/A), and with and without VaporGrip Xtra (MON 51817 at 20 fl oz/A). These treatments were conducted in triplicate. The results showed that when glyphosate was removed from the tank mix with XtendiMax and 20 fl oz/VRA at this higher temperature, dicamba **air concentration decreased by 50%** (from 0.004 ng/L to 0.002 ng/L).

The second dataset is from a published humidome study from the University of Tennessee by **Mueller and Steckel (2019)**¹. This study has already been reviewed by EPA in the 2020 risk assessment (page 126 in EPA-HQ-OPP-2020-0492-002). In this study, three diglycolamine (DGA) dicamba herbicide treatments were evaluated: DGA formulation of dicamba plus glyphosate, DGA formulation including VaporGrip Xtra with and without glyphosate. Temperatures for these treatments were from less than 68°F to 104°F. Results from this publication (i.e Table 2) show for the temperature grouping greater than 86°F, when glyphosate was removed from the tank mix, the dicamba **air concentration decreased by approximately 65%** (from 13,016 ng to 4,527 ng).

While the KHNP0090 Herbicide can be safely used with glyphosate at any temperatures, these two datasets demonstrate that at higher temperatures when glyphosate is removed from the tank mix, dicamba air concentrations can be further lowered between 50% to 65%. Hence, Bayer believes that such a tank mix restriction could provide a viable option for grower to conduct a full field application at higher temperatures (85-95°F).

¹Mueller, T. C. and L. E, Steckel. 2019. Weed Technol. doi: <https://doi.org/10.1017/wet.2019.36>