Appendix A

Testing of Tank Mix Products for Spray Drift Properties

Products proposed for tank-mixing with Tavium plus VaporGrip Technology may be added to the list of products that will not adversely affect the spray drift properties of Tavium plus VaporGrip Technology contained on the web site if a study is performed under the testing conditions set forth below; the test information is reported as set forth below; and the results are interpreted as set forth below and the interpretation supports adding the tested product to the list of products that will not adversely affect the spray drift properties of Tavium plus VaporGrip Technology:

Testing Conditions

Spray chamber test using conditions described in ASTM E-2798-11; or Wind Tunnel test using conditions described in EPA Final Generic Verification Protocol for Testing Pesticide Application Spray Drift Reduction Technologies for Row and Field Crops (September 2013)

Testing Media:	Tavium plus VaporGrip Technology + Tavium plus VaporGrip Technology Proposed Tank Mix Product
Test Nozzle:	Tee Jet® TTI 11004 at 63 psi
Number of Replicates:	3 for each tested medium

Reporting

Validation information as summarized in Appendix B

Full droplet spectrum to be reported for each replicate of each tested medium

Perform AGDISP (8.26) modeling run for each replicate droplet spectrum for each tested medium (AGDISP input parameters described in Appendix C)

Establish 110 foot spray drift deposition estimates from AGDISP run on each replicate for each tested medium

Establish mean and standard deviation of 110 foot deposition for the 3 replicates of each tested medium

One-tail (upper bound) t-test (p=0.l) to determine if proposed tank-mix product is above Tavium Plus VaporGrip Technology 110 foot spray drift deposition.

Interpretation of Results

If mean 110 foot deposition for proposed tank-mix product is not statistically greater than mean 110 foot deposition for Tavium Plus VaporGrip Technology, proposed tank-mix product can be added to the list of products that will not adversely affect the spray drift properties of Tavium Plus VaporGrip Technology contained on the web site. If mean 110 foot deposition for proposed tank-mix product is statistically greater than mean 110 foot deposition for Tavium Plus VaporGrip Technology, proposed tank-mix product

cannot be added to the list of products that will not adversely affect the spray drift properties of Tavium Plus VaporGrip Technology contained on the web site. Results from other testing protocols will be acceptable for adding products to the list of products that will not adversely affect the spray drift properties of Tavium Plus VaporGrip Technology provided that EPA has determined in writing that such other protocol is appropriate for such purpose.

Appendix B

Validation Criteria

a. Detailed information of instrument setting and measurements
- The distance from the nozzle tips to the laser settings
- Measurements of airspeed and flow rate of liquid

b. Detailed information of test substances
- Volume composition and density of Tavium Plus VaporGrip Technology formulation and tank mixes

c. Summary of the entire spray output distribution for each nozzle/tank mixes with statistical analysis of replicates.

d. Graphical outputs of Sympatec Helos laser diffraction particle size analyzer FOR individual spectrum

e. Report of Dv0.l (SD), Dv0.5 (SD), and DV0.9 (SD) as well as mean % fines of (< 141pmSD)

Appendix C

AGDISP Input Parameters

Parameter	Value	Comments
Application Method Section		
Method	Ground	
Nozzle Type	Flat fan (Default)	The direct use of the DSD overrides the use of "nozzle type"
Boom Pressure	63 psi	If nozzles/tank mixes were tested at 63 psi. It has to be consistent with tank mix as well as Tavium plus VaporGrip Technology for both TeeJet® and AIXR nozzles
Release Height	3 ft	Default
Spray Lines	20	Default
Meteorology Section		
Wind Type	Single height	Default
Wind Speed	15 mph	Under bound from label
Wind Direction	-90 deg	Worst-case and default
Temperature	65 F	Default
Relative Humidity	50%	Default
Surface Section		
Angles	0	Default
Canopy	None	Default
Surface Roughness	0.12 ft	Mean of "crops" cover type
Application Technique Section		
Nozzles	54, even spacing	Standard boom setup
DSD	From wind tunnel results, imported in library	
Atmospheric stability	Strong	Default
Swath Section		
Swath width	90 ft	Standard boom
Swath displacement	0 ft	Worst-case
Spray Material Section		
Spray volume rate	15 gal/A	From label
Volatile/nonvolatile fraction	M 1768 at 1.72% v/v	To calculate volatile/nonvolatile fraction in the tank mix for the model input, provide detailed information of the tested formulations and tank mixes. See sample calculation, below[1]

[1]The tested mixture was 1.72% (v/v) Tavium. Tavium has a density of 10.2 lb/gal and contains 42.8% (w/v) dicamba DGA salt (2.9 lb acid equivalent/gal).
For example, a 10-gallon batch would contain the following:
Tavium 1.71% * 10 gal = 0.172 gal ; 0.172 gal * 10.2 lb/gal = 1.753 lb
Water 10 gal (1280 fl oz) – 22 fl oz = 1258 fl oz = 82.0157 lb
Total weight 1.753 lb + 82.016 lb = 83.769 lb
Active ingredient fraction: 1.753 lb * 42.8% a.i. = 0.75 lb; 0.75 lb/83.769 lb = 0.00896 (dimensionless)
Non-volatile fraction: 0.00896/0.428 = 0.021 (dimensionless)

Appendix D

HERBICIDE RESISTANCE MANAGEMENT PLAN

Syngenta must develop a herbicide resistance management plan that includes all of the following elements:

A. Field Detection and Remediation Components:

1. Update and implement an education program for growers, as set forth under the "Educational / Informational Component," below, that identifies appropriate best management practices (BMPs), as set forth under the "Best Management Practices (BMPs) Component," below, to delay, contain, and/or control weed resistance. This plan must convey to growers the importance of complying with BMPs and addressing resistance concerns.
2. If any grower or user informs you of a lack of herbicide efficacy, then you or your representative must (unless denied access by the grower) evaluate the field for "likely resistance" to Tavium Plus VaporGrip Technology for each specific species for which lack of herbicide efficacy is reported by applying the criteria set forth in Norsworthy, *et al*., "Reducing the Risks of Herbicide Resistance: Best Management Practices and Recommendations," Weed Science 2012 Special Issue: 31–62 (*hereinafter "*Norsworthy criteria")[1] in each specific state. If denied access, Syngenta must document this denial of access.
3. If Syngenta receives information of confirmed resistance to dicamba in a specific state for a specific weed species, then Syngenta must immediately report such confirmation to EPA and applicable state pesticide authority and extension services (e.g., state in which resistance is found). After that time, Syngenta need no longer investigate new reports of lack of herbicide efficacy regarding that specific species in that specific state, but Syngenta must continue to comply with A.2. above in regard to any other weed species in any such state and develop, submit to EPA, and implement a strategy to address the ongoing resistance. In addition, for each grower or user in any jurisdiction who reports a lack of efficacy, Syngenta must continue to make available stewardship information about resistance management to the grower or user throughout their use of this product, regardless of whether resistance is confirmed.
4. Syngenta must keep records of all field evaluations and all grower or user reports of lack of efficacy or "likely resistance" for a period of 3 years and make such copies available to EPA upon request.
5. In any case described in A.2. above where one or more of the Norsworthy criteria are met for a weed species not already confirmed to be resistant to dicamba in that specific state, Syngenta must:

   Provide the grower with specific information and recommendations to control and contain likely resistant weeds, including retreatment and/or other

[1] The Norsworthy "likely herbicide resistance" criteria are: (1) failure to control a weed species normally controlled by the herbicide at the dose applied, especially if control is achieved on adjacent weeds; or (2) a spreading patch of uncontrolled plants of a particular weed species; or (3) surviving plants mixed with controlled individuals of the same species. The identification of any of these criteria in the field indicates that "likely herbicide resistance" is present.

non-chemical controls, as appropriate. If requested by grower, Syngenta or its agent must continue to provide information and recommendations in the implementation of weed control measures. At the time of the initial determination that one or more of the Norsworthy criteria are met, and prior to any application of alternative control practices, Syngenta must request that the grower provide Syngenta access to the relevant field(s) to collect sufficient specimens of the likely resistant weeds (potted specimens or seeds) to be able to effectively evaluate the suspected resistant weeds for resistance for further evaluation in the greenhouse or laboratory. Alternately, Syngenta may request that the grower or user provide such specimens, at Syngenta's expense. If access is granted, Syngenta must promptly collect samples of the suspected resistant weeds if available. If viable specimens have been collected, Syngenta must commence greenhouse or laboratory studies to confirm whether resistance is present as soon as practicable following sample collection.

B. Educational / Informational Component:

1. Syngenta must develop, annually update, provide to EPA and make available to state pesticide authority and extension service, and implement an education program for growers and users that includes the following elements:
   a. The education program shall identify appropriate best management practices (BMPs), set forth under the "Best Management Practices (BMPs) Component," below, to delay, contain, and/or control weed resistance, and shall convey to growers the importance of complying with BMPs;
   b. The education program shall include at least one written communication regarding herbicide resistance management each year, directed to users of Tavium Plus VaporGrip Technology for use over-the-top on dicamba tolerant soybean or cotton; and
   c. Syngenta must transmit the BMPs to all users of Tavium Plus VaporGrip Technology. In addition to the other requirements of these Terms and Conditions, this transmittal must describe to growers and users the commitments as described in section A.5 about investigations of suspected dicamba-resistant weeds.
   d. All Syngenta herbicide sales representatives must have immediate access to the education program for distribution to growers, users, extension agents, neighboring landowners, and any other interested stakeholder.
2. Syngenta must develop, annually update, provide to EPA, and implement an education program on label requirements for growers and users that includes the following elements:
   a. The education program must include information about how to determine the appropriate buffers so that users have a better understanding what constitutes a buffer on his/her field(s), and recommendations for weed control practices in buffer zones. The education program must also include information on determination of sensitive areas and cutoff date restrictions.
   b. Provide training on the use of broadcast hooded sprayers (e.g., what qualifies as hooded sprayer, appropriate uses, manufactures).

c. Training for sprayer cleanouts (before and after spraying as indicated on labels).
d. Training for Bulletins Live 2!.
e. Training on updated record keeping requirements.
f. Training should be modified to clearly prohibit the use of the dicamba products not intended for use on DT crops formulation for all application timings.
g. Training on the use of newly required pH buffering adjuvants (volatility-reduction adjuvants) and/or drift reduction adjuvants.
h. Training on how users/growers can report incidents and control failures to EPA and states.
i. Provide to EPA the original education program for dicamba users within three months of the issuance of this registration. Provide the educational materials to states that provide their own training. Provide any other stakeholder with educational materials upon request.

C. Evaluation Component:

1. Syngenta will annually conduct a survey directed to users of Tavium Plus VaporGrip Technology for use over-the-top of dicamba tolerant soybean or cotton. This survey must be based on a statistically representative sample. The sample size and geographical resolution should be adequate to allow analysis of responses within regions, between regions, and across the United States. Syngenta must submit the draft survey to EPA as well as the survey results. This survey shall evaluate, at a minimum, the following:
   a. Growers' and users' adherence to the terms of the Tavium Plus VaporGrip Technology Use Directions and Label Restrictions, if Tavium Plus VaporGrip Technology is used, and
   b. Whether growers have encountered any perceived issue with non-performance or lack of efficacy of Tavium Plus VaporGrip Technology and, if so, how growers have responded.
   c. Whether growers have reported any issues with non-performance of lack of efficacy of Tavium Plus VaporGrip Technology and how the company representatives have responded.
   d. A question asking about awareness of public records of resistance (e.g., any awareness of popular press or industry publications on dicamba resistance or suspected resistant biotypes).
   e. A question directed to asking about awareness of personal/neighbor reports of resistance.
   f. Application practices for dicamba product applied (rate, time, amount, etc.) to the fields planted with dicamba-resistant seed.
2. Utilize the results from the survey described in paragraph 1 of this section to annually review, and modify as appropriate for the upcoming growing season, the following elements of Syngenta's resistance management plan:
   a. Efforts aimed at achieving adoption of BMP's;
   b. Responses to incidents of likely resistance and confirmed resistance; and
   c. The education program and effectiveness of information dissemination. At the initiative of either EPA or Syngenta, EPA and Syngenta shall consult about

possible modifications of the education program.

3. Syngenta must annually report to EPA any changes to its resistance management plan made in response to survey results as provided in section D.1.below.

D. Reporting Component:

1. Submit annual reports to EPA by January 15 (beginning January 15, 2022) and final report with all then available information due September 30, 2025. Such reports shall include:
   a. Annual sales of Tavium Plus VaporGrip Technology by state which shall be treated by EPA as confidential business information;
   b. The first annual report shall include the current education program and associated materials, and subsequent annual reports shall include updates of any aspect of the education program and associated materials that have materially changed since submission of the previous annual report, along with results of the survey as described in section C of this document;
   c. Summary of your efforts aimed at achieving implementation of BMP's by all growers and users;
   d. Summary of your determinations as to whether each reported lack of herbicide efficacy was "likely resistance," your follow-up actions taken, and, if available, the ultimate outcome (e.g., evaluation of success of additional weed control measures) regarding each case of "likely resistance." In the annual report, Syngenta must list the cases of likely resistance by county and state.
   e. The results of the annual survey described in paragraph 1 under "Evaluation Component," above, including the extent to which growers are implementing herbicide resistance BMPs, and a summary of your annual review and possible modification – based on that survey – of the education program, , and response to reports of likely resistance, described in paragraph 2 under "Evaluation Component," above; and
   f. Summary of the status of any laboratory and greenhouse testing conducted pursuant to section A.5 following up on incidents of likely resistance, performed in the previous year. Data pertaining to such testing must be included in the annual reports. Any confirmed resistance must be reported through appropriate, publicly available HRM channels, such as www.weedscience.org or www.hracglobal.com.
   g. Report how many training sessions Syngenta conducted, identifying the dates, locations, and numbers of individuals trained per session. If Syngenta supported or partnered with other entities to provide training, report the names of the entities and the number of training sessions conducted by each, identifying the dates, locations, and numbers of individuals trained per session.

Following your submission of the annual report, you shall meet with the EPA at EPA's request in order to evaluate and consider the information contained in the report.

E. Best Management Practices (BMPs) Component:

1. Best management practices (BMPs) must be identified in your education program. Growers and users must be advised of BMP's in product literature, educational materials and training. Syngenta's transmittal of the BMPs must also describe to growers the commitments in this section of this document. Such BMPs must direct growers and users to scout fields before application to ensure proper weed identification and after application to confirm herbicide effectiveness, and that growers and users should report any incidence of lack of efficacy of this product against a particular weed species to Syngenta or a Syngenta representative.
2. The following are the additional elements and information that must be included in these BMPs:
   a. Regarding crop selection and cultural practices:
      i. Understand the biology of the weeds present.
      ii. Use a diversified approach toward weed management focused on preventing weed seed production and reducing the number of weed seeds in the soil seed-bank.
      iii. Emphasize cultural practices that suppress weeds by using crop competitiveness.
      iv. Plant into weed free fields, keep fields as weed free as possible, and note areas where weeds were a problem in prior seasons.
      v. Incorporate additional weed control practices whenever possible, such as mechanical cultivation, biological management practices, crop rotation, and weed-free crop seeds, aspart of an integrated weed control program.
      vi. Do not allow weed escapes to produce seeds, roots or tubers.
      vii. Manage weed seed at harvest and post-harvest to prevent a buildup of the weed seed-bank.
      viii. Prevent field-to-field and within-field movement of weed seed or vegetative propagules.
      ix. Thoroughly clean plant residues from equipment before leaving fields.
      x. Prevent an influx of weeds into the field by managing field borders.
      xi. Fields must be scouted before application to ensure that herbicides and application rateswill be appropriate for the weed species and weed sizes present.
      xii. Fields must be scouted after application to confirm herbicide effectiveness and to detect weed escapes.
      xiii. If resistance is suspected, treat weed escapes with an alternate mode of action or use non-chemical methods to remove escapes.

   b. Regarding herbicide selection:
      i. Use a broad spectrum soil applied herbicide with a mechanism of action that differs from this product as a foundation in a weed control program.
      ii. A broad spectrum weed control program should consider all of the weeds present in the field. Weeds should be identified through scouting and field history.

iii. Difficult to control weeds may require sequential applications of herbicides with alternative mechanisms of action.

iv. Fields with difficult to control weeds should be rotated to crops that allow the use of herbicides with alternative mechanisms of action.

v. Apply full rates of this herbicide for the most difficult to control weed in the field. Applications should be made when weeds are at the correct size to minimize weed escapes.

vi. Use of herbicides with differing modes of action is recommended to manage resistance.

vii. Report any incidence of lack of efficacy of this product against a particular weed species to Syngenta or a Syngenta representative.

Appendix E

Testing of Tank Mix Volatility-Reduction Adjuvant (or Agent)/Buffering Adjuvant (or Agent)/pH Modifier Properties

Products proposed as volatility-reduction agent/buffering agent (pH modifier) may be added to the list of approved products on the www.TaviumTankMix.com website if found, based upon such testing, that the Test Mixture results in a humidome airborne dicamba concentration are comparable to or less than the established Testing Standard as defined below.

Testing Conditions

Humidome test using conditions based on ASTM STP1587*, such as those outlined below. Testing is not required to be performed to GLP standards, but are expected to be well documented and validated, with associated record retention for potential future reference.

Testing Standard: [Tavium Plus VaporGrip Technology] + Roundup PowerMAX + VaporGrip Xtra or Sentris (0.5 lb a.e./A + 1.125 lb a.e. glyphosate/A + XXX use rate)

Test Mixture: Tavium Plus VaporGrip Technology + Roundup PowerMAX + Buffering Agent (0.5 lb a.e. dicamba/A + 1.125 lb a.e. glyphosate/A + XXX use rate)

Water carrier rate: 15 GPA

Normal plastic humidome as specified in ASTM STP1587

Treated substrate: soil/soil blend as specified in ASTM STP1587 with 12-22% moisture

Temperature: 35 ± 5° C
Relative humidity: 40 ± 5% RH Sample collection duration: 24 hours Air sampling rate: 1.5-3.0 L/m

Air sampling filter: any substrate validated to capture >95% of dicamba (*e.g.*, fiberglass mesh + cotton pad, cellulose + PUF, MCE)

Replications: 3 minimum

Analysis: A one-tail (upper-bound) t-test ($\alpha = 0.10$) performed for all test mixtures relative to testing standard.

Passing result: If the Test Mixture mean was not statistically greater than that of the Testing Standard, then the [volatility reduction adjuvant/buffering adjuvant] in the Test Mixture demonstrated the ability to reduce volatility equivalent to or better than that of [VaporGrip Xtra/Sentris].

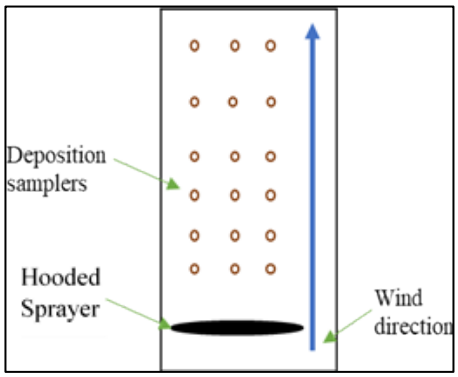
* Gavlick, W.K., D.R. Wright, A. MacInnes, J.W. Hemminghaus, J.K. Webb, V.I. Yermolenka, W. Su. 2016. A Method to Determine the Relative Volatility of Auxin Herbicide Formulations, Pesticide Formulation and Delivery Systems: 35th Volume, ASTM STP1587. pp. 24-32G. R. Goss, Ed. ASTM International, West Conshohocken, PA

Appendix F

Protocol for Testing of Hooded Sprayers to Qualify for Reduced Downwind Spray Buffer Distances when Applying Tavium Plus VaporGrip Technology

Hooded sprayers, proposed for in-crop (over-the-top) dicamba applications may be added to the list of qualified hooded sprayers on www.TaviumTankMix.com website if found, based upon such testing, that it reduces the spray drift of dicamba to a level that is equivalent to or less than that from the established baseline hooded sprayer as defined below.

Testing Conditions



Testing is to be conducted in an Ambient Breeze Tunnel (ABT) controlled environment wind tunnel using the conditions outlined below, with guidance from US EPA (2016)[1]. A section of a hooded sprayer must be placed in the tunnel with the boom length perpendicular to the wind direction. Absorbent pads must line the floor of the ABT to prevent droplet bounce. Dicamba deposition samples must be collected at pre-determined distances downwind from the sprayer. After a 2-minute clear-out period, samples must be retrieved from the farthest to the closest distances relative to the sprayer for subsequent residue analysis to quantify dicamba deposition. Testing conditions are established herein with the express purpose of producing and comparing drift deposition curves between a baseline and a proposed hooded sprayer and are therefore not intended to be representative of field conditions.

Testing is not required to be performed to GLP standards but is expected to be well-documented and validated, with associated record retention for potential future reference. Results of testing must include a certification indicating whether the study was performed pursuant to this protocol and any deviations from it, and a conclusion stating whether the product tested meets the Passing Result criterion specified below.

Spray components:	Clarity® + Induce (0.5 lb a.e./A + 0.25% v/v)
Baseline hooded sprayer:	RedBall® 642E
Hooded sprayer tested:	TBD
Boom Configuration:	Contain a minimum of 4 nozzles with spacing according to manufacturer's use directions; fixed position; length perpendicular to wind direction; rear curtain of hood 3 inches above a simulated crop and, at the same boom height, above bare ground

[1] United States Environmental Protection Agency. 2016. Generic Verification Protocol for Testing Pesticide Application Spray Drift Reduction Technologies for Row and Field Crops

Nozzle/pressure:	TT 11003 at 50 psi
Spray rate:	15 GPA
Spray duration:	30 seconds
Wind speed:	Minimum 10 mph
Temperature:	10-35°C
Humidity:	20-80%
Deposition samplers:	Filter paper on blocks 3-in above
ground Number of samplers:	Minimum 3 at each downwind
distance	
Sampler distances:	Minimum 6 downwind distances for analysis purposes; distances should follow a geometric distribution (*e.g.*, 2, 4, 8, 20, 30, 60, and 120 feet) and cover out to 120 feet but may vary based on study considerations.
Drift simulations:	Minimum 3 per hooded sprayer
Analytical analysis:	Conducted per latest version of analytical method ME-1871 or another validated method[1]
Analysis:	Appropriate non-linear and/or generalized linear models will be fit to the drift deposition measurements of each hooded sprayer evaluated. After an appropriate model is selected, deposition estimates will be made at 2, 4, 8, 20, 30, 60, and 120 feet for both the baseline and proposed hooded sprayer. The boom orientation (crop canopy or bare ground) that gives the highest overall deposition for the baseline sprayer will be used for analysis. Deposition for the baseline hooded sprayer must be determined for each day's test in the ABT.
Passing result:	If a comparison of the deposition values for the proposed hooded sprayer to the baseline hooded sprayer at 20 feet, using a one-tailed t-test (assuming equal variances, upper bound, alpha=0.10), is not statistically different, then the proposed hooded sprayer functions equivalent to the baseline hooded sprayer.

[1] A study conducted with a validated analytical method other than ME-1871 must be accompanied with a report containing the environmental chemistry method, describing in full the analytical method that was used and validated, as well as an independent laboratory validation of the method.