

FIELD ID NO: \_\_\_\_\_

## IR-4 FIELD DATA BOOK

### PART 6. APPLICATION RECORDS-AIRBLAST SPRAYER

#### A. EQUIPMENT

**INSTRUCTIONS:** Complete a separate form for **each piece** of test substance application equipment used in the trial.

EQUIPMENT USED FOR **APPLICATION NUMBER(S)** \_\_\_\_\_

EQUIPMENT IDENTIFIER<sup>1</sup> \_\_\_\_\_

<sup>1</sup>All test substance application equipment must have unique identifying names or codes

PROPELLANT (Check one)

PTO PUMP \_\_\_\_\_

HYDRAULIC PUMP \_\_\_\_\_

OTHER \_\_\_\_\_ (Describe) \_\_\_\_\_

TANK CAPACITY (Indicate gallons or liters) \_\_\_\_\_

FAN/BLOWER UNIT POWER SOURCE (Check one)

PTO \_\_\_\_\_

HYDRAULIC \_\_\_\_\_

OTHER \_\_\_\_\_ (Describe) \_\_\_\_\_

NUMBER OF NOZZLES UTILIZED PER SIDE			
MESH SIZE USED IN THE STRAINERS		No. OF PASSES NEEDED TO TREAT EACH ROW	
NOZZLE DISC AND CORE BRAND/TYPE/SIZE (e.g. TeeJet Hollow Cone DiscD7 CoreDC25)			
If different size nozzles were used along the spray manifold list each Disc/Core combination and their location separately.			

TREATED AREA<sup>2</sup> \_\_\_\_\_

<sup>2</sup>Treated area=row width X # of rows X length of plot sprayed. Treated row width may differ from actual row width when the actual row width is wider than local commercial practices. In this circumstance, the application rate should be calculated using a local commercial row width and an explanation should be included on this page. Contact the Study Director if guidance is needed.

DOES TREATED AREA (for application rate calculations) = PLOT AREA (from Parts 5C and 5F)? YES \_\_\_\_\_ NO \_\_\_\_\_

(For all airblast applications, check "YES" above unless local commercial row widths are used instead of the actual row width on the research plot. This prompt is intended to help data reviewers calculate the application rates correctly.)

IF NOT, PLEASE EXPLAIN: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

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## IR-4 FIELD DATA BOOK

### PART 6. APPLICATION RECORDS -AIRBLAST SPRAYER

#### B. DIAGRAM OF APPLICATION EQUIPMENT

EQUIPMENT USED FOR **APPLICATION NUMBER(S)** \_\_\_\_\_

*INSTRUCTIONS: Complete a separate form for **each piece** of test substance application equipment used in the trial. Sketch a diagram and/or provide clear photograph of application equipment. Include the relative location and size of the target crop and the nozzle outlet placement and application pattern in relation to crop, in the sketch or photograph. In addition, on the sketch or photograph assign each nozzle a unique number. Note the side that is open or if both sides are being used.*

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## IR-4 FIELD DATA BOOK

### PART 6. APPLICATION RECORDS-AIRBLAST SPRAYER

#### C. DISCHARGE CALIBRATION FOR **APPLICATION NUMBER** \_\_\_\_\_

*INSTRUCTIONS: Complete a separate form for additional times when a complete calibration or calibration-recheck of application equipment is required.*

EQUIPMENT IDENTIFIER \_\_\_\_\_

DISCHARGE CALIBRATION DATE \_\_\_\_\_ PERFORMED BY \_\_\_\_\_ (Initials)

PRESSURE OR OTHER STANDARD SETTING UTILIZED IN CALIBRATION \_\_\_\_\_

APPROXIMATE TIME OF DAY THAT THE CALIBRATION WAS PERFORMED \_\_\_\_\_

LOCATION WHERE THE CALIBRATION WAS PERFORMED \_\_\_\_\_

STANDARD DISTANCE USED IN DISCHARGE CALIBRATION \_\_\_\_\_

DISCHARGE UNITS MEASURED (e.g. ml, oz., gallons) \_\_\_\_\_

METHOD USED TO DETERMINE AMOUNT DISCHARGED (Check one)    REFILLED WITH FLOWMETER \_\_\_\_\_

MEASURED AMOUNT NEEDED TO BACKFILL TANK \_\_\_\_\_    OTHER (Describe below) \_\_\_\_\_

BRIEFLY DESCRIBE PROCEDURE USED TO CHECK DISCHARGE CALIBRATION \_\_\_\_\_

**The table for entering output results is now on 6.C.2 (next page).**

CALIBRATION CALCULATIONS:

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## IR-4 FIELD DATA BOOK

### PART 6. APPLICATION RECORDS

#### C.2. DISCHARGE CALIBRATION FOR APPLICATION NUMBER \_\_\_\_\_

*INSTRUCTIONS: Complete a copy of this form (PHOTOCOPY IF NECESSARY) for additional times when a complete calibration or calibration-recheck of application equipment is required.*

*DISCHARGE CALIBRATION Record time applicator is allowed to discharge. Record this value in "RUN" Row 1 next to the appropriate side. Calculate the total and average discharge AND whether the recheck is within 5% (if applicable). Entry prompts have been provided for 3 discharge calibration runs. Enter all calculations on 6.C.1.*

Output Run Number		1	2	3	Total (Required)	Average (Optional)		
Pressure (psi)								
Units (e.g. ml, liters, gallons)								
Time (seconds)								
Left side* only	Initial volume							
	Final volume							
	Volume discharged							
Right side* only	Initial volume							
	Final volume							
	Volume discharged							
Both sides at the same time	Initial volume							
	Final volume							
	Volume discharged							
Sum of outputs per run (ml or gallons)								
Total discharge rate (ml or gal/sec)								

\*As seen from the rear of the sprayer

Was this a recheck of discharge calibration or a 3-run target check? (Check one) YES\_\_\_\_ NO\_\_\_\_

If yes, were results within 5% of original calibration or target output? YES\_\_\_\_ NO\_\_\_\_

If this is a 3-discharge calibration run or a 3-run target check, is each boom discharge rate (bottom row in columns 1, 2, and 3) within 5% of the mean? YES\_\_\_\_ NO\_\_\_\_ NA\_\_\_\_

*An output consisting of an average of three runs or a target output may be used when calculating the sprayer output and amount of test substance to use. If this is a 1-discharge recheck, then the results of the original calibration must be used. If the output result of the recheck is more than 5% different than the original calibration result, then two more runs are needed to produce a new, full calibration. The original calibration data, or a true copy, must be in this field data book.*

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## IR-4 FIELD DATA BOOK

PART 6. APPLICATION RECORDS-AIRBLAST SPRAYERD. SPEED CALIBRATION FOR **APPLICATION NUMBER (S)** \_\_\_\_\_

*INSTRUCTIONS: Complete a separate form for additional times when a complete calibration or calibration recheck of application equipment is required.*

EQUIPMENT IDENTIFIER \_\_\_\_\_

SPEED CALIBRATION DATE \_\_\_\_\_ PERFORMED BY \_\_\_\_\_ (INITIALS)

TERRAIN OF CALIBRATION TRACK (e.g., tilled field) \_\_\_\_\_

LOCATION WHERE THE CALIBRATION WAS PERFORMED \_\_\_\_\_

BRIEFLY DESCRIBE PROCEDURE USED FOR SPEED CALIBRATION \_\_\_\_\_

**SPEED CALIBRATION:** Calculate the speed of the application equipment. If appropriate, note the gear setting and /or RPM setting used in the speed calibration. Indicate the distance (in feet) of the track on which the application equipment was tested to determine speed (e.g. speed of application equipment tested for 100 ft.). The speed is calculated by dividing the length of test track (in feet) by the time needed to cover that length (in seconds). Entry prompts have been provided for 2 additional runs. If this is a recheck, calculate the result is within 5% of the original calibration. Show all calculations. **A speed recheck (one run) is required whenever an output recheck is performed, except for multiple applications within a study that are made on the same day on the same farm.**

RUN	GEAR	RPM	Length of test track (include units)	TIME (sec)	CALCULATED SPEED (include units)
1					
2					
3					
Total of test run times (sec)		Average time (sec)		Average speed	

CALCULATIONS:

WAS THIS A RECHECK OF SPEED CALIBRATION? (Check one) YES \_\_\_\_\_ NO \_\_\_\_\_

IF YES, WERE RESULTS WITHIN 5% OF ORIGINAL CALIBRATION? YES \_\_\_\_\_ NO \_\_\_\_\_

*The original calibration data, or a true copy, must be in this field data book.*

**NOTE:** A target speed may be used for application calculations, rather than the mean of three runs, but for each application a full speed calibration must be conducted, and the mean of the three runs must be within 5% of the target speed.

WAS THIS A CHECK OF A TARGET SPEED? (Check one) YES \_\_\_\_\_ NO \_\_\_\_\_

IF YES, WERE RESULTS WITHIN 5% OF TARGET SPEED? YES \_\_\_\_\_ NO \_\_\_\_\_

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### PART 6. APPLICATION RECORDS-AIRBLAST SPRAYER

#### E. DELIVERY RATE CALIBRATION FOR **APPLICATION NUMBER(S)** \_\_\_\_\_

*INSTRUCTIONS: Complete a separate form for each application, unless the same parameters are used-- you are using the same equipment, and have performed a recheck to confirm the result of the full calibration. Determine the rate of delivery from the application equipment. Briefly describe the procedure, including formulas used to determine delivery rate calibration. Show all calculations and units. Equations used in electronic (computer software) calculations in this trial must be transcribed or printed out and attached here. Computer-generated values (as opposed to those entered by the field cooperators) must be reviewed and clearly delineated by circling, initialing, and dating.*

PROCEDURE/FORMULA:

CALCULATIONS:

PROTOCOL SPECIFIED SPRAY VOLUME (from Part 15, in gallons per acre or liters per hectare): \_\_\_\_\_  
Enter "NA" if a spray volume is not applicable.

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## IR-4 FIELD DATA BOOK

### PART 6. APPLICATION RECORDS-AIRBLAST SPRAYER

F. VOLUME, MIXING AND DILUTION CALCULATIONS FOR **APPLICATION NUMBER(S)** \_\_\_\_\_

*INSTRUCTIONS: Complete a separate form for each application, unless there are no changes in multiple applications. Show all calculations, formulas, and results below, define units of measure, and cite the initials of the person performing the calculations. Equations used in electronic (computer software) calculations in this trial must be transcribed or printed out and attached here. Computer-generated values (as opposed to those entered by the field cooperators) must be reviewed and clearly delineated by circling, initialing, and dating.*

DESCRIBE HOLDING AND TRANSPORT OF TEST SUBSTANCE FROM STORAGE AREA TO LOCATION OF TANK MIXING (E.g.: "Test substance held securely in an insulated cooler during transport to field site in the bed of a pickup truck" or "Tank mix prepared within walking distance of the chemical storage building")

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## IR-4 FIELD DATA BOOK

PART 6. APPLICATION RECORDS-AIRBLAST SPRAYER

G. APPLICATION INFORMATION FOR APPLICATION NUMBER \_\_\_\_ APPLICATION DATE \_\_\_\_\_

HAS THE APPLICATION EQUIPMENT BEEN USED SINCE THE LAST (Check one) YES \_\_\_\_\_ NO \_\_\_\_\_  
CALIBRATION/RECHECK WAS PERFORMED? (If you are about to check YES, then a recheck is usually required.)

**INSTRUCTIONS:** Complete a separate form for each application date and for each treatment on one application date (use the Treatment Number as indicated in the protocol). Provide the name of the test substance (common chemical name or chemical code number); the batch or lot number of the test substance; the approximate time the test substance was mixed with the carrier and the approximate time the mixture was applied to the plots, along with **the initials of the person(s) mixing and spraying the tank mix**; the time of additional agitation (if this section is being used for spray-gun applications; additional agitation is not applicable for large volume airblast applications); the unique name or code for the application equipment used to apply this treatment; the placement of the test substance (e.g. broadcast, in-furrow, directed, knifed-in, banded); the amount of carrier, formulated product and adjuvant in the mix; the measuring equipment with increments; the distance (include units) of the nozzles above the canopy or ground (indicate which); the pressure in pounds per square inch at the boom; and the carrier (normally water), its source (e.g. farm pond, city water), pH of the carrier and its temperature, and the equipment used to measure the carrier pH.

TRT Number ____	
NUMBER OF DAYS SINCE PREVIOUS APPLICATION	TIME OF ADDITIONAL AGITATION (if applicable) e.g. "10:00" or "continuous" or "just prior to application"
TEST SUBSTANCE	
BATCH/LOT NUMBER/Container# <sup>1</sup>	
TIME MIXED/INITIALS	
TIME APPLIED/INITIALS	
EQUIPMENT IDENTIFIER	
PLACEMENT OF TEST SUBSTANCE	
TANK MIX AMOUNTS	
CARRIER (starting volume of water)	MEASURING EQUIPMENT with INCREMENTS*
VOLUME of WATER REMOVED from starting volume (if applicable)	
TEST SUBSTANCE (formulated product)	
ADJUVANT	
TOTAL VOLUME OF TANK MIX	*e.g. 1000 mL grad. cylinder/10 ml incr.
APPROXIMATE SPRAY HEIGHT (compared to trees or target height <sup>2</sup> )	ORDER IN WHICH ITEMS WERE ADDED TO SPRAY MIXTURE* W=Water, TS=Test Substance, A=Adjuvant *e.g. 1-W, 2-TS, 3-A, 4-W
PSI AT NOZZLES	
CARRIER SOURCE/TYPE	
CARRIER pH/TEMPERATURE	
EQUIPMENT used to MEASURE pH	

<sup>1</sup> If more than one test substance container was received for this trial. If not, only batch or lot number is needed.<sup>2</sup> Example: Peak spray height was 15 feet into the canopy of a 15-foot tall tree.

ABOVE DATA ENTERED BY: \_\_\_\_\_ DATE: \_\_\_\_\_



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## IR-4 FIELD DATA BOOK

### PART 6. APPLICATION RECORDS-AIRBLAST SPRAYER

#### H. ADDITIONAL INFORMATION FROM **APPLICATION NUMBER** \_\_\_\_\_

APPLICATION DATE \_\_\_\_\_ (Complete a separate form for each application date)

PLANT GROWTH & ENVIRONMENTAL DATA AT THE TIME OF APPLICATION		Enter data in this column
CROP HEIGHT ( <i>Measure or estimate crop height, include units of measurements</i> )		
CROP GROWTH STAGE ( <i>e.g. seed, vegetative, bud, bloom, fruiting, #true leaves</i> )		
CROP VIGOR ( <i>e.g. poor, fair, good, variable</i> )*		
PLANT SURFACE MOISTURE ( <i>Check one</i> )	<b>SATURATED</b> ____ <b>DAMP</b> ____ <b>DRY</b> ____ <b>NA</b> ____	
ESTIMATED % OF SOIL AREA COVERED BY CROP CANOPY		
MEASURED AIR TEMPERATURE ( <i>Check F or C</i> ) (E.g. 75 °F <u>✓</u> °C____)		°F____ °C____
MEASURED WIND SPEED ( <i>Check MPH or Km/Hr</i> ) (E.g. 0.5 MPH <u>✓</u> Km/Hr____)		MPH____ Km/Hr____
WIND DIRECTION FROM ( <i>Check one</i> )	<b>N</b> ____ <b>NE</b> ____ <b>E</b> ____ <b>SE</b> ____ <b>S</b> ____ <b>SW</b> ____ <b>W</b> ____ <b>NW</b> ____ or <b>NO WIND</b> ____	
ESTIMATED % OF CLOUDS IN THE SKY		
MEASURED RELATIVE HUMIDITY%		
DEW ( <i>heavy, light, none, etc.</i> )		
DESCRIPTION OF SOIL TILTH ( <i>smooth, firm, packed, cloddy, etc.</i> )		
ESTIMATE OF SOIL SURFACE MOISTURE ( <i>wet, moist, dry, etc.</i> )		
SOIL TEMPERATURE ( <i>Check F or C</i> )		°F____ °C____
DEPTH OF MEASUREMENT OF SOIL TEMPERATURE ( <i>Check INCHES or cm</i> )		INCHES____ cm____

\*IF CROP VIGOR IS POOR OR VARIABLE, EXPLAIN: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

ABOVE DATA ENTERED BY: \_\_\_\_\_ DATE: \_\_\_\_\_

BRIEFLY DESCRIBE PROCEDURE USED TO CLEAN APPLICATION EQUIPMENT AND IDENTIFY WHO CLEANED IT:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

CLEANED BY: \_\_\_\_\_

CLEANING DESCRIPTION ENTERED BY: \_\_\_\_\_ DATE: \_\_\_\_\_

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**PART 6. APPLICATION RECORDS-AIRBLAST SPRAYER**

**I. PASS TIMES FOR APPLICATION NUMBER \_\_\_\_\_**

APPLICATION DATE \_\_\_\_\_ (COMPLETE A SEPARATE FORM FOR EACH APPLICATION DATE)

RECORD PASS TIME AND PASS DIRECTION - Complete the table by providing the time required to make each pass of the application equipment through the plot and direction of that pass (e.g. NE).

TREATMENT __			TREATMENT __		
PASS NUMBER	TIME	DIRECTION	PASS NUMBER	TIME	DIRECTION
1			1		
2			2		
3			3		
4			4		
5			5		
6			6		
7			7		
8			8		
9			9		
10			10		
11			11		
12			12		
TOTAL PASS TIME					

ABOVE DATA ENTERED BY: \_\_\_\_\_ DATE: \_\_\_\_\_

PROVIDE A BRIEF NARRATIVE SUMMARY OF THE APPLICATION AND IDENTIFY WHO PERFORMED IT:

(E.g. "Test substance was applied to the treated test plot in two passes; one pass down each side of the row. Each pass was applied to the canopy of the trees.")

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APPLICATION WAS MADE BY: \_\_\_\_\_

NARRATIVE ENTERED BY \_\_\_\_\_ DATE: \_\_\_\_\_

FIELD ID NO: \_\_\_\_\_

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### PART 6. APPLICATION RECORDS-AIRBLAST SPRAYER

J. POST APPLICATION RATE CONFIRMATION FOR **APPLICATION NUMBER** \_\_\_\_\_

APPLICATION DATE \_\_\_\_\_ (COMPLETE A SEPARATE FORM FOR EACH APPLICATION DATE)

**CALCULATION OF ACTUAL APPLICATION RATE AND SPRAY VOLUME** - Using information such as total pass time, plot size, tank mix amounts, and discharge rate (average of 3 outputs) determine the actual amount of formulated test substance applied to treated plots. If a target rate was used for the pre-application calculations, the data from the 3-discharge recheck (average of 3 outputs) must be used for calculating the application rate. (If the protocol does not include a rate of formulated product, then the amount of active ingredient should be determined.) Convert this amount to the amount applied per acre (or hectare), and determine deviation from target application in the protocol, rounded to the nearest whole percent. Show all calculations and label all units. **It is not sufficient to merely compare the actual pass times to the "practice" pass times.** The example formulas listed at the bottom of 6J may be used to calculate the application rate. Calculations may be entered on a separate page placed after this one, if there is not enough space below.

**EXAMPLE FORMULAS:** The formulas below may be used to calculate the amount of test substance (TS) applied per acre as required in Part 6I. Other formulas may be used instead; however, it is not sufficient to merely compare the actual pass times to the "practice" pass times.

1) Total Pass Time x Discharge Rate/Nozzle x #Nozzles = Volume of Tank Mix applied to Plot

2) Volume of Tank Mix applied to Plot x Amount of TS in Tank Mix = Amount of TS applied to Plot  
Total Volume of Tank Mix

3) Amount of TS applied to Plot x 43,560 sq ft per acre = Amount of TS applied per acre  
Plot area treated in sq ft

4) Volume of Tank Mix applied to Plot x 1 gallon x 43,560 sq ft per acre = Spray Volume in gallons per acre (GPA)  
3785 ml Plot area treated in sq ft

%DEVIATION FROM THE PROTOCOL RATE SHOULD BE ROUNDED LIKE THIS: -5% OR THIS: +8%,

NOT LIKE THIS: -5.4% OR THIS: +8.29% OR THIS: +3.141592653589793238462643383279502884197169399%

\*\*\*\*\*

DISCHARGE RATE (ml/sec or g/sec): \_\_\_\_\_

ACTUAL AREA TREATED (swath width or treated row or bed width x # of passes x length of plot): \_\_\_\_\_

Note: Use bed width for plots with multi-row beds.

WAS ACTUAL APPLICATION RATE WITHIN -5% TO +10% OF PROTOCOL RATE?

(Check one) YES\_\_\_\_ NO\_\_\_\_ IF NO, **Contact the Study Director immediately.**

WAS ACTUAL SPRAY VOLUME WITHIN THE PROTOCOL RANGE?

(Check one) YES\_\_\_\_ NO\_\_\_\_ NA\_\_\_\_ IF NO, **Contact the Study Director immediately.**

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### PART 6. APPLICATION RECORDS-AIRBLAST SPRAYER

K. POST TREATMENT RECORDS FOR **APPLICATION NUMBER** \_\_\_\_\_

APPLICATION DATE \_\_\_\_\_ (Complete a separate form for each application date)

**Was There Any Visible Phytotoxicity Damage?** (Check one) YES\_\_\_ NO\_\_\_

**Date Crop Was Observed:** \_\_\_\_\_ *Initials/date:* \_\_\_\_\_

**If YES, then contact the Study Director, fill in the box below\*, and if a digital camera is available, email digital photo-graph(s) to the Study Director along with a detailed explanation of the damage. If NO, then line out the entire box with initials and date, unless the protocol requires a phytotoxicity rating. If so, fill in the box below\*.**

\*Alternatively, a separate sheet with a description of the phytotoxicity may be inserted at the back of Part 6.

DESCRIPTION OF PHYTOXICITY SYMPTOMS:	
PHYTOTOXICITY DESCRIBED BY: _____ (Initials/date)	
DATE STUDY DIRECTOR WAS CONTACTED: _____	CONTACTED BY: _____ (Initials/date)

Enter the requested information below for both the first rainfall and first irrigation after each application, regardless of whether subsequent applications were made prior to the first rainfall or irrigation. The rainfall/irrigation data entered below should be transcribed from the data included in Part 9 unless otherwise indicated on this page. **If irrigation is required by the protocol to incorporate the test substance, or if the test substance is applied by irrigation, then that event should be recorded below. "NONE BEFORE HARVEST" or "NONE BEFORE SAMPLING" may be entered, if applicable.**

DATE OF FIRST RAIN (Note the date of first rainfall after this application.)		
TIME AFTER APPLICATION THAT PLOTS WERE EXPOSED TO FIRST RAINFALL (Check DAYS or HOURS) (Enter #hours if first rainfall was <u>on the date of application</u> .)		DAYS___ HOURS___
AMOUNT OF WATER (Check INCHES or mm)		INCHES___ mm___
RAIN INFORMATION RECORDED BY (Initials/date)		
TYPE OF IRRIGATION (e.g. overhead, trickle, flood)		
DATE OF FIRST IRRIGATION (Note the date of first irrigation after this application.)		
TIME AFTER APPLICATION THAT PLOTS WERE EXPOSED TO FIRST IRRIGATION (Check DAYS or HOURS) (Enter #hours if first irrigation was <u>on the date of application</u> .)		DAYS___ HOURS___
AMOUNT OF WATER (Check INCHES, mm, or mL)		INCHES___ mm___ mL___
IRRIGATION INFORMATION RECORDED BY (Initials/date)		

If the data entered above differ from the rainfall/irrigation data included in Part 9, explain: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ *Initials/date:* \_\_\_\_\_

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## IR-4 FIELD DATA BOOK

### PART 6. APPLICATION RECORDS-AIRBLAST SPRAYER

#### L.1. DIFFERENTIATION OF MULTIPLE TRIALS CONDUCTED IN CLOSE PROXIMITY\*

ARE YOU CONDUCTING MORE THAN ONE TRIAL IN THIS STUDY? YES\_\_\_ NO\_\_\_

IS ANOTHER FIELD RESEARCH DIRECTOR IN THIS STUDY  
CONDUCTING A TRIAL WITHIN 20 MILES OF YOUR TRIAL(S)? YES\_\_\_ NO\_\_\_

If "NO" is checked twice, then no other input is needed except for signing and dating at the bottom of each page.

If "YES" is checked at least once, then an independently prepared tank-mix must be used in each trial, except in studies in which this is not applicable such as studies with granular formulations.

**In order to differentiate these trials, select one option from Set 1 OR two options from Set 2.**

If 3 or more trials in this study cannot be differentiated by the same options, then you should check all options that have been used, and explain below which options are differentiating between which trials.

If different crop varieties are being used as a differentiation option, then enter below information that explains why these varieties were chosen. Examples: Variety A produces large fruit, whereas Variety B produces small fruit. Variety A produces fruit with a smooth skin, whereas Variety B produces fruit with a rough skin. Varieties A and B are the two most commonly grown cultivars in this state.

If options are used that are listed in the protocol but are not listed in the table in Part 6.L.2, then enter descriptions of those options below.

Enter below any additional information that will improve the understanding of the options that have been chosen.

\*Trials conducted in different calendar years are exempt from these requirements. (If separate trials by the same person or within 20 miles are conducted in late fall/early winter, then the differentiation options should be used to reduce the possibility of data rejection by a regulatory agency.)

**Trial IDs of other trials in this study to which these options are being applied:**

\_\_\_\_\_  
Additional information:

\_\_\_\_\_  
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Trial Year 2020

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COMPLETE IF APPROPRIATE: "THIS IS A TRUE COPY OF THE ORIGINAL"  
THE ORIGINAL IS IN IR-4 FIELD DATA BOOK NO. \_\_\_\_\_ INITIALS \_\_\_\_\_ DATE \_\_\_\_\_

FIELD ID NO: \_\_\_\_\_

## IR-4 FIELD DATA BOOK

## PART 6. APPLICATION RECORDS-AIRBLAST SPRAYER

## L.2. DIFFERENTIATION OF MULTIPLE TRIALS (IF YOU CHECKED "YES" ON THE PREVIOUS PAGE)

**Some options included in this table may not be acceptable for use in this study. Refer to Protocol Section 11.4 for the study-specific list of options.**

Check the options (in the third column) used to differentiate the trials that you are conducting in this study:

Set	Option	✓	Description
1	A		Trial sites must be separated by at least 20 miles (32 km) [measured as straight line distance]
	B		First application or planting date (for annual crops) in each trial is separated by at least 30 days
	C		Different crop variety (different size or shape at maturity, rough vs. smooth surface, different amount of foliage shielding the commodity, different rate of growth, or representative of the major varieties grown within the region)—confirm with Study Director if this option will be chosen
2	A		Spray volume must vary by at least 25% of the lower volume (minimum 10 GPA difference) Example 1, Trial A has a volume of 20 GPA and Trial B has a volume $\geq$ 30 GPA Example 2, Trial A has a volume of 60 GPA and Trial B has a volume $\geq$ 75 GPA The trial with the lowest spray volume for the first application must remain the lowest for each application; the trial with the highest must remain the highest for each, and so on
	B		Use of an adjuvant (of any suitable type) in the tank mix for one trial vs. <u>no adjuvant</u> in the tank mix for another trial
	C		Different foliar application type: foliar directed or foliar broadcast (Do not use this option if the label instructions for this commodity will specify one type or the other)
	D		Different granular application type: broadcast or banded (only if label supports both types)
	E		Different types of application equipment be used in each trial (for example, tractor-pulled boom sprayer, tractor-pulled spreader, airblast sprayer, axial fan orchard sprayer, proptec sprayer, cannon mist sprayer, tower sprayer, over-row sprayer, tunnel sprayer, backpack sprayer, waist pack sprayer, hand gun, hand-held spreader, or shaker can)
	F		Different spray droplet size (fine, medium, coarse, very coarse, or extra coarse) This may be accomplished by changing nozzles and/or by changing spray pressure Document in the Field Data Book the droplet size that results from the pressure and nozzles used in the trial (nozzle catalog may be used as a reference) Coarse, very coarse, and extra coarse are appropriate for herbicides only
	G		Different incorporation method for soil-applied test substance: mechanical or irrigation
	H		Different band width for soil applications: band width must vary by at least 50% of the lower width
	I		Different irrigation type (drip or furrow or sprinkler/over-the-top) (Irrigation must be applied at least once after each application, but over-the-top irrigation must not be applied within one hour of an application, and irrigation is not needed following the last application if samples are to be collected on the same day)
	J		For test substances that must be applied through drip irrigation: surface drip line or buried drip line
	K		Different planting arrangement for annual crops: single row beds or multi-row beds (two or more rows on each bed)
	L		One trial shall have trellised plants and the other shall not
	M		Different training system for fruit trees (for example, central leader or open center)
	N		Different maturity of trees or bushes in fruit and nut studies—young trees or bushes in one trial and mature trees or bushes in the other (minimum 5 year age difference); all trees/bushes must be commercially productive
	O		Different soil series, type, or texture (only in trials in which applications are made to the soil)
	P		Different formulations of the test substance (within the types generally considered equivalent)

ABOVE DATA ENTERED BY: \_\_\_\_\_ DATE: \_\_\_\_\_

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## IR-4 FIELD DATA BOOK

### PART 6. APPLICATION RECORDS-AIRBLAST SPRAYER

#### M. APPLICATION EQUIPMENT MAINTENANCE AND REPAIR LOG

*INSTRUCTIONS: Complete this form or provide equivalent information. Provide dates and a brief description of maintenance and repair work completed on the application equipment relevant to this trial. Be sure to date and initial all entries.*

APPLICATION EQUIPMENT IDENTIFIER \_\_\_\_\_

EQUIPMENT USED FOR **APPLICATION NUMBERS** \_\_\_\_\_

INITIALS/DATE \_\_\_\_\_

RECORD DATES AND BRIEF DESCRIPTION OF ANY MAINTENANCE AND REPAIR WORK DONE ON THE APPLICATION EQUIPMENT, OR ATTACH TRUE COPIES OF THE LOGS.  
ALSO RECORD SOP# FOLLOWED, IF APPLICABLE.

Initials and Date	Was Maintenance or Repair routine? (Check one)		SOP#	Description
	Yes	No		

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