

# vDrive<sup>®</sup> Insecticide

**vDrive Insecticide Operator's Guide  
For Gen 2 20/20 Displays**

 Precision Planting<sup>®</sup>

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# vDrive Insecticide - System Setup, Calibration, and Operation

**Note:** The calibration of vDrive Insecticide requires the handling of dangerous materials (insecticide). Always wear appropriate personal protective equipment when handling dangerous materials. Always wear protective gloves, mask, and eyewear.

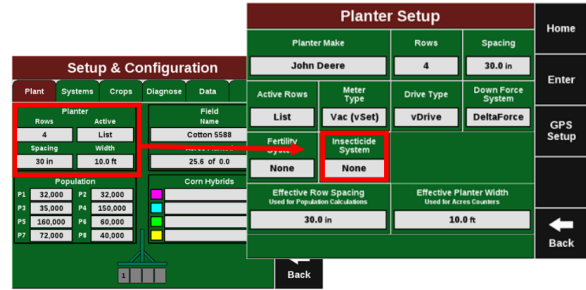
## **There are six requirements for the vDrive Insecticide system to function:**

1. vDrive Insecticide must be configured on the 20/20 monitor.
2. There must be a Speed source.
3. The Master Plant Switch on the Cab Control Module must be in the up position.
4. The planter must be lowered.
5. vDrive Insecticide system must be enabled.
6. The Cal Mass Value must be greater than zero.

# Display Setup

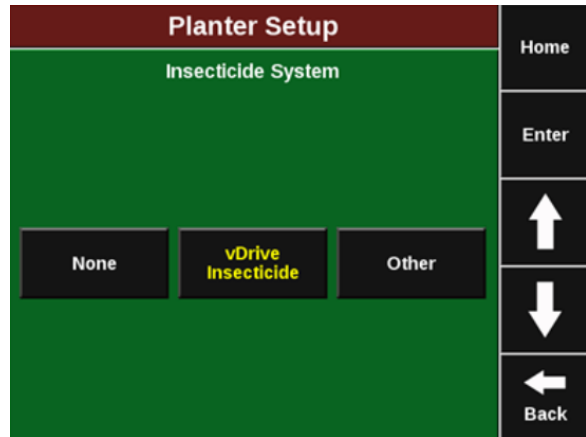
## Step 1:

Begin by assigning vDrive Insecticide as your insecticide system. Under the System tab, press PLANTER and then INSECTICIDE SYSTEM.



## Step 2:

Select VDRIVE INSECTICIDE as your insecticide system.



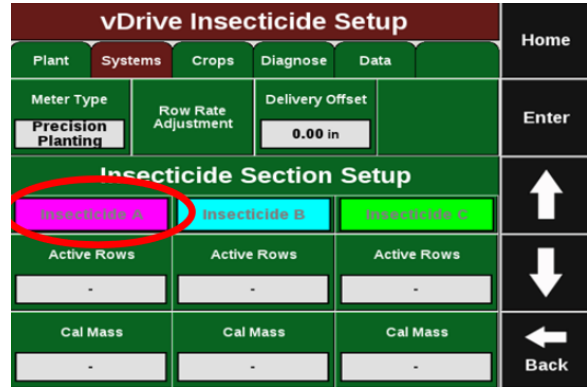
## Step 3:

To setup and calibrate vDrive Insecticide, select the SYSTEMS tab in the Setup menu. Then press INSECTICIDE.



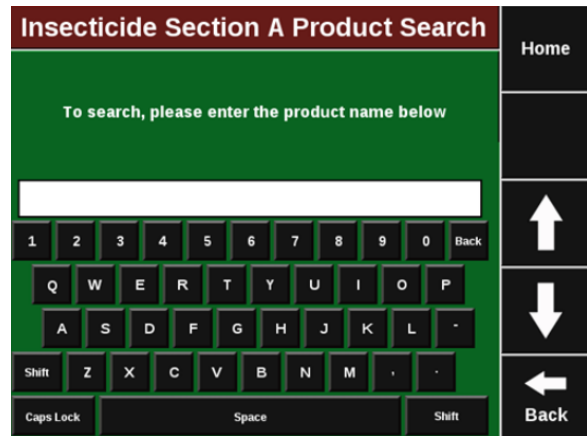
**Step 4:**

Up to three different sections can be configured. Use different sections when more than one product or rate is used. Press INSECTICIDE A to begin setting up a section.



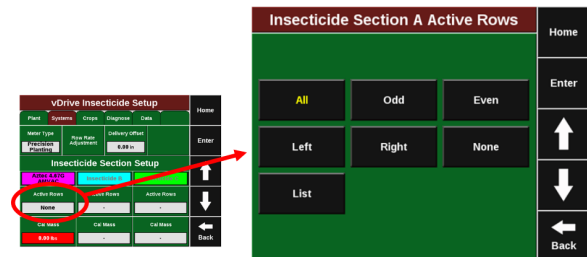
**Step 5:**

Begin typing the name of the product being used. Matching options will be shown. Select the product from the list.



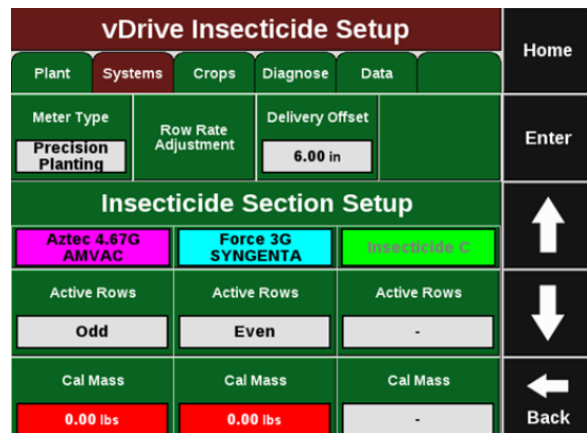
**Step 6:**

Once the product is assigned, press ACTIVE ROWS and select the rows for this product if more than one section will be used. Select the rows for this section.



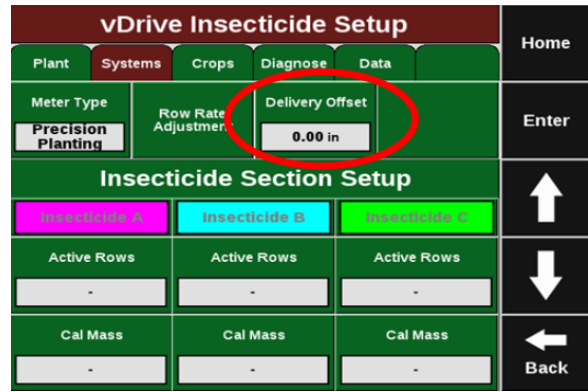
**Step 7:**

Repeat steps 2 — 4 for additional sections. A two section setup is pictured in figure 5. Note that the CAL MASS value will remain red until this value is entered in the calibration process.



**Step 8:**





Delivery Offset identifies the distance between the seed drop point and the insecticide drop point. Entering this value will increase the accuracy of swath control. It may be left at zero on many planters where the seed and insecticide drop points are a couple inches apart. Measure the distance and press DELIVERY OFFSET to enter the offset value.



## Insecticide Calibration

**Warning: The calibration of vDrive Insecticide requires the handling of dangerous materials (insecticide). Always wear appropriate personal protective equipment when handling dangerous materials. Always wear protective gloves, mask, and eyewear.**

### Tools Required for Calibration

Item	Picture
<p align="center"><b>Insecticide Scoop</b> <b>(Included in Base Kit: 732060)</b></p>	
<p align="center"><b>Measuring Cup</b> <b>-2 Cups Dry-</b> <b>(Included in Base Kit: 732060)</b></p>	
<p align="center"><b>Scale—REQUIRED</b> A recommended scale is <b>Ozeri: Pronto Digital Kitchen</b> Not included in vDrive Insecticide. This scale may be purchased at Amazon, Home Depot, Walmart, Kmart, and other locations.</p>	  <p align="center"><b>(Recommended Ozeri Scale)</b></p>
<b>SMARTBOX SYSTEMS ONLY</b>	
<p align="center"><b>Calibration Collection Bottle</b> <b>SmartBox (AMVAC)</b> Included in Amvac SmartBox Kit- SB022299. Required for SMARTBOX Calibration</p>	

### Open Container Calibration

For sealed container calibration instructions, skip to the sealed container calibration section. The calibration process in this section will consist of calculating a bulk density. Included with the hardware is a measuring cup (2 Cup Dry).

Any 2 cup dry measuring cup will work. If you switch products during the season (for example switching from Force to Aztec), a new density needs to be calculated. Not recalibrating can cause errors of 10-20% due to the differences in density from one product to another. In addition, failure to follow these steps precisely can result in a variation of up to 5%. For the most accurate results, weigh multiple samples and enter the average of the samples. Also, because different lots of the same product vary in density, calibration should be done for each lot to ensure accuracy.

**Step 1:**

Place the provided measuring cup on the purchased scale and press TARE to zero the scale.



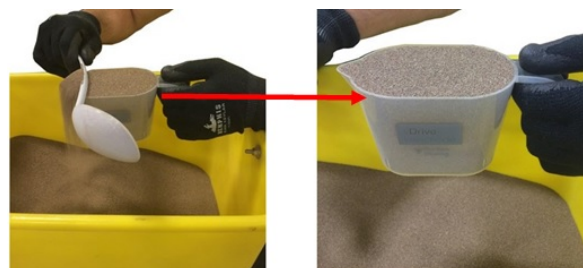
**Step 2:**

Fill the measuring cup to the brim with the provided scoop/spoon. Do not use a larger scoop and do not use the measuring cup as a scoop. This will affect the density and create errors of up to 5%.



**Step 3:**

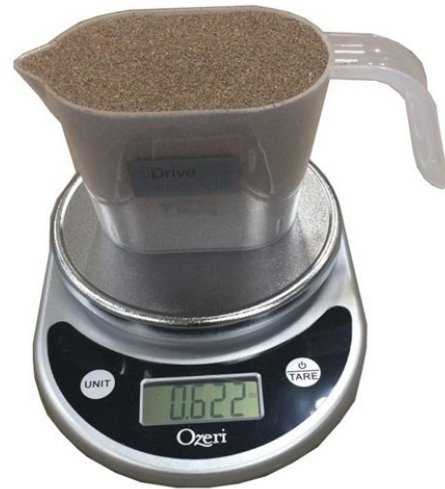
Use a flat edge to remove excess product from the cup. Do not press down or shake to compact. This will affect density and application rates.





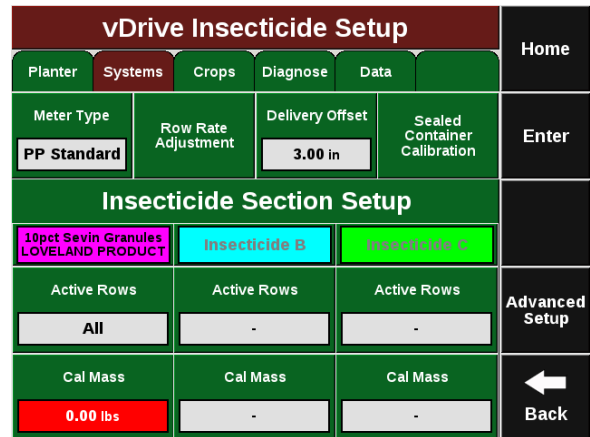
**Step 4:**

Place the full cup on the scale and record the weight in pounds (or ounces in metric mode). For best results, weigh multiple samples and calculate the average for entry into the 20/20 Display.

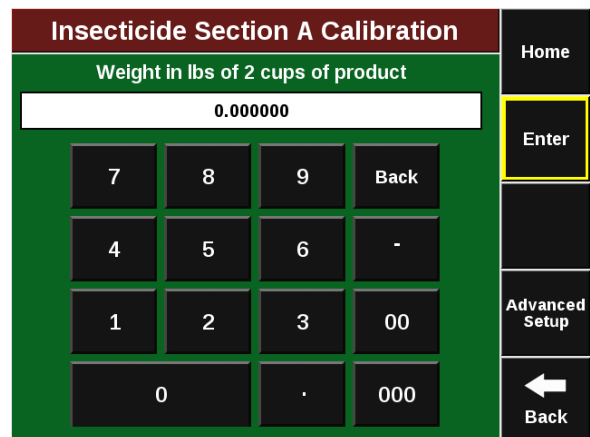


**Step 5:**

Navigate to Setup > Systems > Insecticide to open the vDrive Insecticide Setup screen. Then press Cal Mass.



Enter the value measured in step 4 and press Enter.



Repeat Steps 1-5 for each product, or when switching to a new product.

## Sealed Container Calibration

**Warning:** The calibration of vDrive Insecticide requires the handling of dangerous materials (insecticide). Always wear appropriate personal protective equipment when handling dangerous materials. Always wear protective gloves, mask, and eyewear.

**Note:** Sealed container calibration is only used for SmartBox systems.

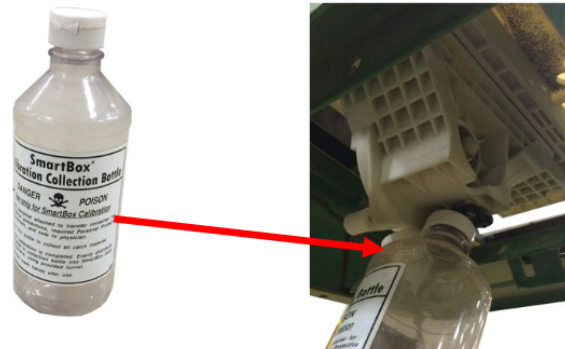
### Step 1:

Place the provided measuring cup on the purchased scale and press TARE to zero the scale.



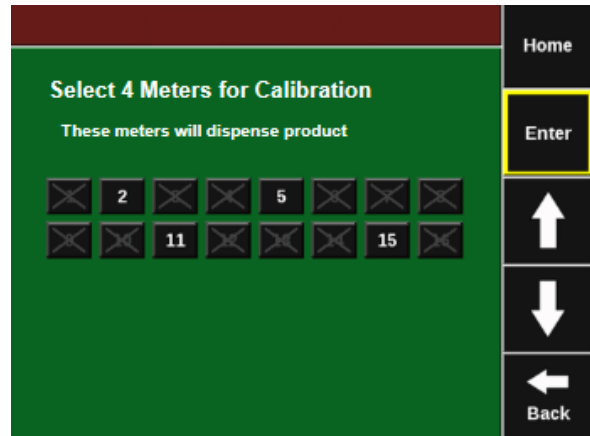
### Step 2:

Secure the sealed container calibration bottles to the drop funnels on four rows.



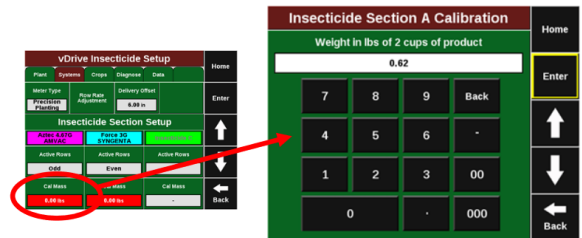
**Step 3:**

On the vDrive Insecticide setup page, press Sealed Container Setup and follow the onscreen instructions. Select the four rows with calibration bottles, and press ENTER.



**Step 4:**

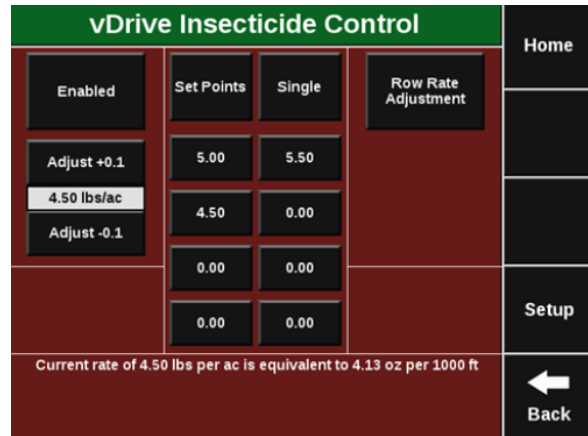
Combine the samples from the four rows together in the Calibration Cup. Use a straight edge to strike off the top of the cup. Weigh the cup and enter the weight in the Cal Mass box on the vDrive Insecticide setup screen.



# Assigning Application Rate — Lbs./Acre

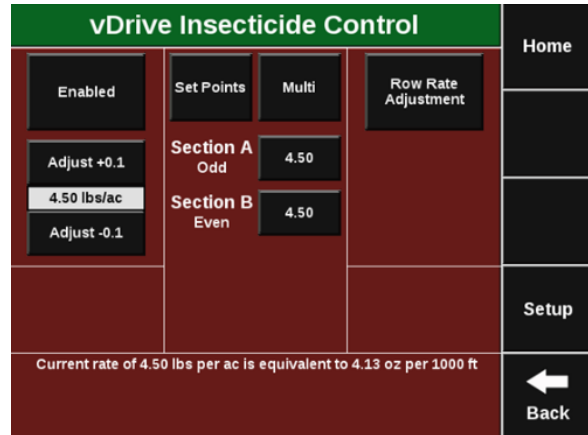
## Step 1:

Press the vDrive Insecticide button on the home screen to access the vDrive Insecticide Control Screen. Make sure the button in the top left says “Enabled” and press any set point to enter a value.



## Step 2:

If multiple rates will be applied, press SINGLE to toggle that button to MULTI. Then assign a rate to each section.



## Step 3:

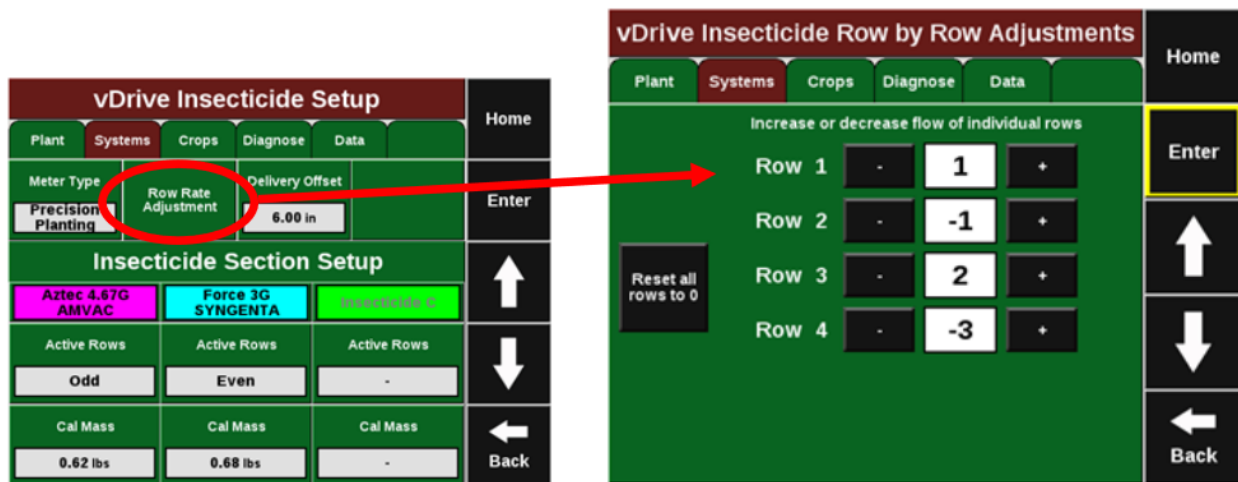
To adjust the applied rate on the fly, use the adjustment button on the right. Press ADJUST +0.1 to increase your rate by that amount or ADJUST – 0.1 to decrease your rate by that amount. The number between the two adjustment buttons is the current rate. Because some manufacturers provide rates in Oz/ 1000ft, the equivalent to your current pounds per acre is shown at the bottom of the screen.

# Row Rate Adjust

## Row Rate Adjust

This function allows for the adjustment of individual rows whose application rate varies from the target rate. Adjustments are made in increments of 1% of motor speed. For example:

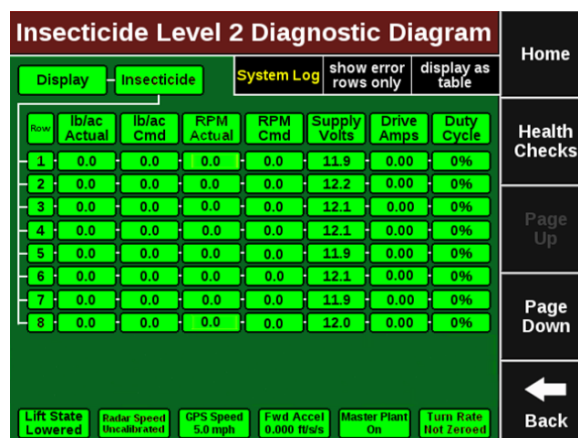
- Though a full bag of insecticide is poured into every row, row 3 consistently has 2 lbs. remaining in the hopper when all other rows are empty. Under applying by 2 lbs. from a 50 lb. bag means that row three is applying 4% less than the other rows.
- To correct this, increase the flow on row 3 by 4% in the Row Rate Adjust screen.
- Whenever variations exceed 10%, visually inspect the meter, motor, harness, funnel and tube for damage, or, if under applying, for blockage.
- Use the “Reset all rows to 0” button to remove any individual row adjustments.



# Diagnose Page

## Level 2 Diagnostic Screen for vDrive Insecticide

Access the Level 2 Diagnostic Screen for vDrive Insecticide by pressing SETUP, DIAGNOSE, and INSECTICIDE. Information displayed on this screen will be similar to that displayed for vDrive seeding.



### Column Headings

**LBS per Acre (lb/ac) Actual**– Estimated application of product based upon Actual RPM and application targets.

**Lbs per Acre (lb/ac) Command (CMD)**– Commanded RPM based up RPM and Application rates.

**RPM Actual**- Actual RPM of meter.

**RPM Command (CMD)**- Commanded RPM of Meter to meet application rates.

**Supply Volts**- Voltage at vDrive Insecticide Module.

**Drive Amps**- vDrive Insecticide motor current draw in amps.

**Duty Cycle**- Displays vDrive Insecticide motor output over the operating range, 0–100%.

### Definitions of information Displayed at the bottom of the diagnostic screen.

Lift State	Radar Speed	GPS Speed
Lift Switch will show lifted of lowered. Meters will not spin while planter is lifted except during calibration process for sealed containers.	Shows the speed signal from the tractor radar. If this is not calibrated the screen will show uncalibrated.	Displays the speed taken from GPS. Both Radar and GPS is required for all vDrive systems.

<b>FWD Accel</b>	<b>Master Plant</b>	<b>Turn Rate</b>
<p>Acceleration detected by Gyro. This will show as a negative or positive value depending on direction of movement.</p>	<p>Master plant switch is located on the CCM (Toggle switches under the 20/20 Display). Master plant switch must be on any vDrive system to operate.</p>	<p>Turn Rate relates to turn compensation. If this button is yellow the Gyro must be "Zeroed."</p>