



### 3. APPLICATION START TIME (REQUIRED FIELD)

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1. The application start time is logged so hours making application can be analyzed in reports. It has no effect on the R.E.I..
2. The current time is automatically filled in for you when you open the logbook. If you need a different one select it from the dropdown or manually enter it.

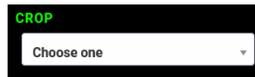


A screenshot of a form field labeled "START TIME" in green text. The field contains the time "06:25:21".

### 4. CROP (REQUIRED FIELD)

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1. Crop is the current Crop you're making an application to. When you select a Crop from the dropdown the Crop Type dropdown will automatically populate with names of Crop Types associated with it.

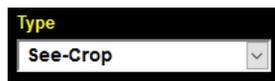


A screenshot of a dropdown menu labeled "CROP" in green text. The menu is currently showing "Choose one" with a downward arrow.

### 5. CROP TYPE

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1. The Crop Type is the current Crop Type being treated. It's determined by selecting a Crop first. Make a selection from the drop down. This is not a required field so that applications can be more generic to cover more sq area.



A screenshot of a dropdown menu labeled "Type" in yellow text. The menu is currently showing "See-Crop" with a downward arrow.

## 6. CROP COLOR

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1. The Crop Color is the current Crop Color being treated. It's determined by selecting a Crop Type. Make a selection from the drop down. This is not a required field so that applications can be more generic to cover more sq area. You can select more than one Crop Color from the list.



A screenshot of a dropdown menu titled "CROP COLOR" in green. The menu is open, showing a search bar with the text "See-Crop-Type" and a list of options below it.

## 7. CROP PHOTO

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1. The Crop photo allows you to capture or upload a photo during the application. This makes a handy reference to see what a crops status was before an application so it can be compared at a later date.



A screenshot of a button titled "CROP PHOTO" in green. Below the title is a "Browse..." button and the text "No file selected." in yellow.

## 8. USE POLES TREATED

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The use poles treated checkbox allows the Logbook to make calculations based on the Sq area of poles you entered for your location in the database. The poles treated is a quick way to estimate the total sq area treated while making applications. The checkbox can be pre checked by going to your account settings and clicking on the **log** tab and check the "Use Poles Treated" checkbox. If you uncheck the box within the Logbook app, the logbook will use the total sq area of the Zone, Section, or area used if it was entered in your database.

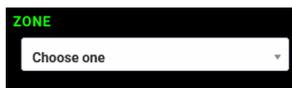


A screenshot of a checkbox labeled "Use Poles Treated" in yellow. The checkbox is checked, indicated by a green checkmark.

## 9. ZONE (REQUIRED FEILD)

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1. The Zone is the top level of the location you are making an application at. Select a Zone name from the dropdown.

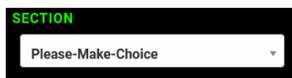


A screenshot of a dropdown menu titled "ZONE" in green. The menu is open, showing a search bar with the text "Choose one" and a list of options below it.

## 10. SECTION

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1. The Section is the second level of the location you are making an application at. The list is automatically populated based on the Zone selected. Select a Section name from the dropdown.



A screenshot of a dropdown menu titled "SECTION" in green. The menu is open, showing a search bar with the text "Please-Make-Choice" and a list of options below it.

## 11. AREA

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1. The Area is the third level of the location you are making an application at. The list is automatically populated based on the Section selected. Select an Area name from the dropdown.



A screenshot of a dropdown menu titled "AREA" in green text. The menu is currently closed, showing the text "Please-Make-Choice" and a downward-pointing arrow.

## 12. APPLICATION METHOD (REQUIRED FEILD)

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1. Application Method. This dropdown list is populated by what was entered in your database. Each of the app methods in the list has a chemical rate tied to it , based on your base volume amount or your base sq area amount. Select a method from the dropdown. If you use booms to apply chemicals, make sure you add an application type named **Boom** to your data base. The app will change what is displayed to you based on this. If you chose Boom from your list you will be asked if it's a multiple pass app and will give you the opportunity to prefill the Number of Passes input. The multiple pass can be skipped by selecting No. Otherwise enter the number of passes and select Yes.



A screenshot of a dropdown menu titled "APPLICATION METHOD" in green text. The menu is currently closed, showing the text "Choose one" and a downward-pointing arrow.



A screenshot of a dialog box titled "Multipass App?". The dialog asks "Do you want to enter the # of passes?". Below the question is a text input field with a downward arrow on the right. At the bottom of the dialog are two buttons: "YES" and "No".

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### 13. NUMBER OF CHEMICALS (REQUIRED FIELD AT LEAST ONE CHEMICAL)

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1. The number of chemicals in one mixture can be from 1-5. The Logbook always opens with one active chemical showing. If you're doing a combo select the appropriate number of chemicals and select their information. *Note: There's a link to our label index if you didn't upload a label for your chosen chemical.*

NUMBER OF CHEMICALS  
1

Label Index

Chemical # 1

TYPE 1 NAME 1 RATE 1 100GAL INFO 1

Choose one Choose Type First Choose Name First Choose Name First

- A. **Type.** This is the type of chemical you're using. This comes from whatever you set in your database. Types will probably be PGR, Insecticide, or Fungicide as an example. Choose a chemical type from the dropdown.
- B. **Chemical Name.** This dropdown list will be populated dependent on what you choose for your type. Chemical names may be Bonzi, Avid, or Subdue as an example. Choose a chemical name from the dropdown.
- C. **Chemical Amount.** This dropdown list will be populated dependent on what chemical name you choose. If the chemical has a rate and a ppm associated with it they will both appear here.

Chemical # 1

TYPE 1 NAME 1 RATE 1 100GAL INFO 1

Pgr Bonzi 100.000 ml [1. ppm] Chemical Info

- D. **Chemical Info** If you have uploaded a label for this chemical to your database, the link to it will be green and appear here. If no label has been uploaded the menu will be red.

INFO 1

Chemical Info

Label

## 14. POLES CALCULATOR

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1. The poles calculator will help you determine the number of poles treated based on the start of an area, the end of an area, and width of poles. This may be handy when you view the distance of each area in your boom screen. The pole width will be prefilled with the zone selected poles width in your database. The calculator is only available when using poles treated. You can enter the lower or higher measurements for the areas in either input. The calculator will figure out the distance for you. Once you have the poles treated click the Send to Poles Treated button to fill the poles treated input. Click on the blue link to open the poles calculator.



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## 15. CHEMICAL CALCULATOR

The chemical calculator will tell you the amount of each chemical needed based on the app method chosen. If you chose an app method that uses your base volume rate, the calculator will load with your base volume amount divided in half in the first input, the full base volume amount in the center input, and nothing in the custom input as you can enter that once you open the calculator. Fig 1 shows the amount of Bonzi needed using a base volume application for a 1 ppm rate in 50 Gals. The fig 2 shows the amount of Bonzi needed for a 1 ppm rate in the custom amount of 7 gallons.

### Base Volume Application

Fig 1.

The screenshot shows the 'Chemical Calc.' app interface. At the top, there are three radio buttons for 'Total Gal': 50 (selected), 100, and Custom. Below this is a dropdown menu for 'Select a Chem #' with 'Bonzi' selected. A blue button labeled 'Amount Needed' is positioned above the result '50.000 ml'.

Fig 2.

The screenshot shows the 'Chemical Calc.' app interface. The 'Total Gal' radio buttons are 50, 100, and Custom (selected). Below them is an 'Enter gal' input field with the value '7'. The 'Select a Chem #' dropdown menu has 'Bonzi' selected. A blue button labeled 'Amount Needed' is positioned above the result '7.000 ml'.

Fig. 3 shows the amount of NutriFog needed for 10,000 sqft. In a base area application. Fig 4 shows the amount of NutriFog needed for the user's base area of 1000 sqft. Fig. 5 shows the amount of NutriFog needed with a custom sq area of 34,200 sqft, which was prefilled because the "Use Poles Treated" wasn't checked so the calculator grabbed the total Sqft from the user's database for the Zone they were treating. The custom area can be manually changed. The user is using the sqft for a base symbol but has chosen to use Liters for measuring the Nutrifog chemical. NutriFog is a carrier for Thermal Pulse Foggers.

### Base Area Application

Fig 3.

The screenshot shows the 'Chemical Calc.' app interface. At the top, there are three radio buttons for 'Total Sqft': 10000 (selected), 1000, and Custom. Below this is a dropdown menu for 'Select a Chem #' with 'NutriFog' selected. A blue button labeled 'Amount Needed' is positioned above the result '0.250 L'.

Fig 4.

The screenshot shows the 'Chemical Calc.' app interface. The 'Total Sqft' radio buttons are 10000, 1000 (selected), and Custom. The 'Select a Chem #' dropdown menu has 'NutriFog' selected. A blue button labeled 'Amount Needed' is positioned above the result '0.025 L'.

Fig 5.

The screenshot shows the 'Chemical Calc.' app interface. The 'Total Sqft' radio buttons are 10000, 1000, and Custom (selected). Below them is an 'Enter sqft' input field with the value '34200.0'. The 'Select a Chem #' dropdown menu has 'NutriFog' selected. A blue button labeled 'Amount Needed' is positioned above the result '0.855 L'.

Click on the Orange link to open the calculator.

[Chem Calculator](#)

## 16. ENTER SQ AREA

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1. The Logbook offers various options to calculate the sq area treated. For this example the user is on the English system so they have chosen sqft for their base area symbol. Checking this box reveals the width, Start of Area, and End of Area input boxes. If you want the sq area treated for this application to be based on these inputs, enter a value in each one. If the width is left blank the sq area treated will be calculated from either the poles treated method or manual input. Leaving the width blank allows the Start area and End Area to be used as a comment for the application and no calculations will be done.
  - A. **Width.** The width of the area being treated. In this example it's 12. The ft is assumed as the base area symbol. This input accepts any number.
  - B. **Start of Area.** The starting point of the area can be any number as long as it's less than the End of Area.

WIDTH AREA	START AREA	END AREA
12.00	26	67

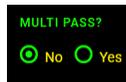
**End of Area.** The ending point of an area can be any number as long as it's greater than the Starting Area.

This area left blank intentionally

## 17. MULTI PASS APP

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1. Some types of applications require more than one pass to place the correct amount of chemical. A watering boom would be one of those types. If you select yes you can enter the number of passes for the application. If you enter the number of passes it will be used as part of your volume applied calculations when using poles treated.



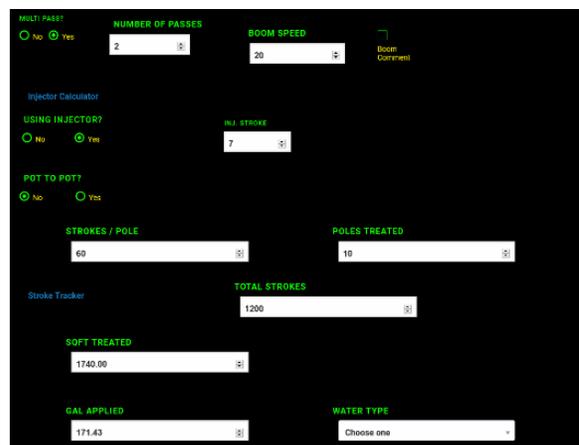
MULTI PASS?  
 No  Yes



NUMBER OF PASSES  
2

- A. Example. You enter 10 poles treated and you make 2 passes with 60 strokes per pole and 7 strokes per gal for an injector setting.

$2 \times 60 \times 10 / 7 =$  volume applied = 171.43 Gals for this user on the English system



MULTI PASS?  
 No  Yes

NUMBER OF PASSES: 2

ROOM SPEED: 20

Boom Comment

Injector Calculator

USING INJECTOR?  
 No  Yes

INJ. STROKE: 7

POT TO POT?  
 No  Yes

STROKES / POLE: 60

POLES TREATED: 10

Stroke Tracker

TOTAL STROKES: 1200

SOFT TREATED: 1740.00

GAL APPLIED: 171.43

WATER TYPE: Choose one

- B. The total strokes the injector should have made will also be calculated for you. 2 passes x 60 strokes per pole x 10 poles = 1200 strokes. The Sq Area treated will also be calculated based on the Zone, Section, or Area chosen x the number of poles treated. A key Feature of the logbook is the poles treated. This makes automatic sq area and total volume applied calculations based on user input. This helps applicators calculate the amount of chemical needed for an application to keep crops from being under or over treated. *Note: Remember that an injector is only accurate when you calibrate it.*
- C. In the example above the Zone being treated has a pole sq area of 174 sqft. 10 poles were treated so you have 10 x 174 = 1740 Sqft for a user on the English system.
- D. In the example above all fields are optional except the Sqft treated and the Gals applied. This allows a user to bypass all calculations and manually enter these values.

## 18. BOOM SPEED

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1. The boom speed allows the user to enter the speed of the boom used for the application. This can help with future applications as the speed can greatly influence the amount of chemical applied during an app. The boom speed can be a real number.

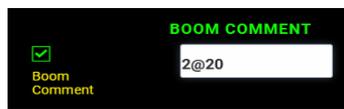


A screenshot of a mobile application interface showing a text input field labeled "BOOM SPEED" in green. The input field is empty and has a small downward arrow icon on the right side.

## 19. BOOM COMMENT

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1. A lot of operations use some kind of watering boom. This input allows you to add a comment for the application. This may be handy to reference back to for applications made in the future. In this example the user entered 2@20 to represent 2 passes at a speed of 20.



A screenshot of a mobile application interface showing a text input field labeled "BOOM COMMENT" in green. To the left of the input field is a green checkmark icon and the text "Boom Comment" in yellow. The input field contains the text "2@20".

## 20. INJECTOR CALCULATOR

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The injector calculator can help you find the amount of fertilizer or other elements that use PPM to add to your injector stock tank. Choose your Injector ratio or enter a custom one. Now enter the PPM desired and the % of the ingredient. The calculator will give you the amount to add to either a Gal of stock or a Liter of stock. This calculator isn't precise for some elements for some elements so if dealing with a smaller ppm where 1-2 ppm could make a difference you may want to find a calculator for that specific element or consult the elements label for an accurate measurement.



A screenshot of a mobile application interface for an "Injector Cal." calculator. The interface is green and white. It features a title "Injector Cal." with a close button (X). Below the title are three radio buttons for "Injector Ratio": "100:1" (selected), "200:1", and "Custom". Below these are two input fields: "PPM Desired" with the value "150" and "% of Material" with the value "20". A blue button labeled "Amount Needed" is positioned below the input fields. At the bottom, the results are displayed: "10.00 OZ/Gal of Stock" and "74.80 Grams/L of Stock".

## 21. USING AN INJECTOR

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1. A lot of applications are done using some kind of injector.



A screenshot of a mobile application interface showing a text input field labeled "USING INJECTOR?" in green. Below the label are two radio buttons: "No" and "Yes". The "Yes" radio button is selected.



A screenshot of a mobile application interface showing a text input field labeled "INJ. STROKE" in green. The input field contains the number "7".

- A. Checking yes for this input shows the Injector Stroke default count as entered in your account settings. In this example the user has 7 as their default injector stroke in their account settings so the number 7 shows up already entered in the input. If you're using an injector with a different stroke count per volume, on the current application you can override the count by entering a new stroke count in the input. This will not change your default as that will load again at the next application. If you retained your data, the log will load with the altered stroke count. See Total Strokes on how to calculate the stroke count of your injector

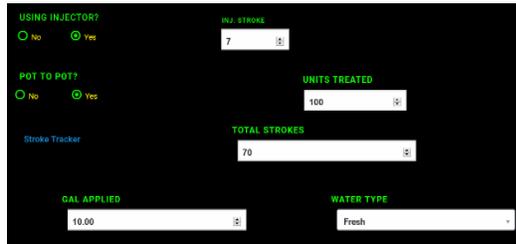
## 22. POT TO POT

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1. A pot to pot application is one done directly to each container with typically no waste on the ground. These applications are typically done as a drench application through both a watering pole, and water breaker or drip emitter. If you select this type of application your log will reflect units treated instead of sq area treated. You will also be able to enter the total injector strokes to calculate the total volume applied or you can enter the total volume applied directly



POT TO POT?  
 No  Yes



USING INJECTOR?  
 No  Yes

NUM STROKES  
7

POT TO POT?  
 No  Yes

UNITS TREATED  
100

Stroke Tracker  
TOTAL STROKES  
70

GAL APPLIED  
10.00

WATER TYPE  
Fresh

2. In this example the user has chosen Pot to Pot as yes and have entered 100 units treated with a total of 70 strokes. Since the total strokes was entered the logbook automatically calculates the volume applied by doing the multiplication.  $70 \text{ strokes} / 7 \text{ Strokes per gal} = 10 \text{ Gal}$ . The 7 strokes per Gal comes from your injector stroke setting. If you leave the total strokes empty you will have to enter the volume applied manually.

## 23. POLES TREATED

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The poles treated is an easy way to calculate the total amount of area treated. The applicator can quickly visualize the amount of full poles and partials to add them up quickly. Once you enter the total poles treated the app will retrieve the Sq Area per pole for the Zone, Section, or Area being treated depending on which one they chose and multiply it by the Poles treated to fill in the Total Area Treated. Poles treated can have up to two decimal places.

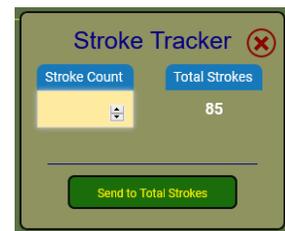


POLES TREATED  
3.14

## 24. STROKE TRACKER

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- The stroke count of an injector is an accurate tool in keeping track of the total volume applied. The Stroke Tracker helps you keep track of the total strokes applied to a crop where applications that you make are applied in several different volumes of chemical to different areas. This will allow you to enter the total stokes applied to each area as they are applied so you don't need to write them down or remember them. Enter the stroke count and click or touch outside the Stroke Count box and the amount that was entered will be added to the amount in the Total Strokes and appear in white. You can close the Stroke Tracker with the red x and then come back to it as long as the app wasn't logged. This saves time by allowing you to enter other info about the application while counting the strokes. Once you're done with all of the applications for that app click the "Send To Total Strokes" button to fill in the Total Strokes input field in the app. Your total volume should now be calculated based on the total strokes applied. Click the Blue Stoke Tracker link to open the Stroke Tracker.



## 25. TOTAL STROKES

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The total strokes is the total amount of strokes your injector makes for the current application. A Dosatron D14 has a stoke count of 7 strokes per gallon ran through it. An older D11 has a 9 strokes per gallon rate for every gallon ran through it. To calculate the stroke count fill a known volume such has a 5 gallon bucket with water that was ran through the injector. Count the total amount of strokes and then divide by 5 to get your stroke per gallon count to enter in the app. *Note: The stroke count on a Dosatron makes two clicks to complete one cycle for a stroke.* You could use the clicks but the count would be twice as much. This would be fine as long as everyone using that injector is doing the same thing. Otherwise the amount of chemical used from the bucket won't match the calculated volume used in the app. If your injector doesn't make any clicking sounds you may be able to detect the hose pulsing and use that as a count.



## 26. TOTAL SQ AREA TREATED

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This is the total sq area treated during the app. This can be filled in manually or it can be filled automatically by the app when using poles Treated or letting the app use the total Sq area of the Zone, Section, or Area if desired.



## 27. VOLUME APPLIED

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The total volume applied can be entered manually or filled in automatically if using the injector stroke count. Enter any number with up to two decimal places.



A screenshot of a software interface showing a text input field labeled "GAL APPLIED" in green text. The input field is empty and has a small downward arrow icon on the right side.

If you retain your data, a running total will appear just above and to the right on the Total Volume input. This is handy so you can keep track that your injector is pulling the correct amount from your bucket as you make applications. For spray applications it's handy when your moving around making several small applications so you know how much you used if you forgot.



A screenshot of a software interface showing a text input field labeled "GAL APPLIED" in green text. To the right of the input field, there is a blue button labeled "Pre Total 27 Gal". The input field is empty and has a small downward arrow icon on the right side.

## 28. TARGET PEST REASON

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1. **Target Pest Reason.** This dropdown list is populated by what was entered in your database. Select a name from the list. Typical examples of things found in this list maybe Aphids, Botrytis, or Maintenance.



A screenshot of a software interface showing a dropdown menu labeled "TARGET PEST/REASON" in green text. The dropdown menu is open, showing the text "Aphids" and a small downward arrow icon on the right side.

## 29. APPLICATION END DATE

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1. The Application End Date is used to calculate the expiration date of the chemicals REI. The current date will load when you open the logbook but if you need a different one select it from the calendar.



A screenshot of a software interface showing a text input field labeled "END DATE" in green text. The input field contains the date "02/04/2021".

## 30. APPLICATION END TIME

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1. The Application End Time is used to calculate the expiration date of the chemicals REI. The current Time will load as the first option in the list. If you keep this option it will update every time you touch your logbook screen. If you want to manually enter a time select the closest one from the dropdown list.



A screenshot of a dropdown menu labeled "END TIME" in green text. The menu is open, showing a white input field with the time "18:57:13" and a small downward arrow on the right side.

## 31. COMMENTS

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1. The Comment input allows users to enter any information that may be helpful about the application that isn't covered in any of the other methods. Typical comments seen so far are either weather or crop condition related. Anything can be entered up to 240 characters but keeping it brief and to the point is best.



A screenshot of a text input field labeled "COMMENTS" in green text. The field is empty and has a black border.

## 32. RETURN TO LOGBOOK

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1. The Return to Logbook check box allows users to have control over where they are sent after logging an application. If you checked the Return to Logbook in your account settings, this box will always be checked when you open the logbook. If checked you will return to the logbook directly after logging an application. If unchecked you will be taken to the applications made today page where the application you just logged will be displayed for you.



A screenshot of a checkbox labeled "Return To Logbook" in yellow text. The checkbox is checked, indicated by a green checkmark icon.

### 33. RETAIN LOGBOOK DATA

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1. The Retain Logbook Data is a convenient way to hold data about the current application to be used on the next application. This makes it easier to log very precise applications as the common data is kept allowing you to focus on the uncommon data.



- A. Data that is held.
  1. Use Poles Treated.
  2. Zone.
  3. Application Method.
  4. Number of chemicals.
  5. All chemical information based on the choices previously made.
  6. Are you using an injector?
  7. Injector Stroke.
  8. If Pot to Pot then it will be selected.
  9. A running total of the total volume applied will appear above your volume applied input.
  10. Water Type.
  11. Target Pest Reason.
  12. Retain Logbook Data is checked.

### 34. EMAIL RESULTS

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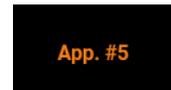
1. The Email results check box allows you to email yourself a copy of the application being logged.



### 35. MULTI APPS

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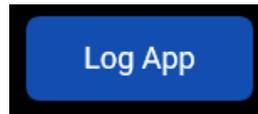
The Multiple Apps button will open another instance of the app in a new tab or window depending on the user's device. This is handy if the user is making multiple apps at the same time. This is possible when using injectors on booms and the user has more than one running. The user starts one app and fills in all of the known data then clicks the Multi Apps button when they start the next app so the app is open in a separate tab. To keep track of which app is which without scrolling down the page to view data to give a hint, the user can look in the upper right corner or the lower right corner for the Orange App#. When retaining data it will keep it separate for each app window so the user could be applying different chemicals and or rates in each application.



## 36. LOG APP

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1. The Log App button does just that. If any required fields were left blank the page will scroll to the point that needs attention. Otherwise the app will be logged and depending on the users choices they will be directed to the Log Data page or back to the Logbook to log another app.



## 37. FUTURE FEATURES

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1. Logging Biological Applications. We are working on adding a more robust way of logging biological applications. It can be done now with the current setup but we feel that biologicals need special consideration to allow easier tracking of applications as they are often applied with different methods.
2. Manually adding rates to your database. Since certain users don't have access to adding chemicals and their rates to the database, we are working on adding the ability to add rates during the logging of an application. This ability will allow assistant growers to add a rate for a chemical or biological that wasn't in the database yet. Head growers will have the ability to turn this feature on or off for every user of their system.