



HarvestEye™

Powered by B-hive

HarvestEye HandHeld Operator Manual

Revision 1

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Safety Guide

Please keep these instructions and use only as specified in this guide.

DO:

- Only use the supplied cables.
- In case of technical issues, contact HarvestEye support (see the rear cover of the manual)
- Ensure the camera cable is securely fastened into the tablet and tablet

DO NOT:

- Operate in extreme wet weather
- Jet wash the system
- Touch the camera lens
- Tamper with the tablet or camera
- Use the system with incorrect voltage
- Damage the power cable

In the event that any part or module on your HarvestEye system becomes damaged or non-functional, HarvestEye Support should be contacted using the details provided at the end of this manual.

You must not add any other modules to the HarvestEye system.

You must not replace any module of the HarvestEye system without consulting HarvestEye Support.



HarvestEye Conformity

- In relation to the HarvestEye UKCA certification the manufacturer address is:

HarvestEye Ltd.
0.07 The Boole Technology Centre,
Beevor Street,
Lincoln
LN6 7DJ



- In relation to the HarvestEye CE certification the Authorised Representative address is:

EU Authorised Representative:
Authorised Representative Service
77 Camden Street Lower
Dublin
D02XE80
Ireland



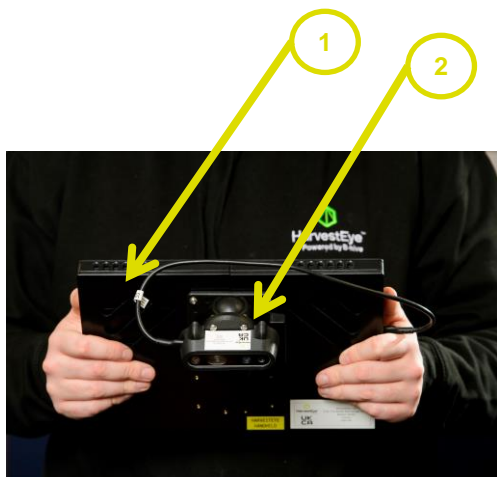
- A Copy of the Declarations of Conformity for the HarvestEye HandHeld system can be found at:
- <https://www.harvesteye.com/media/uploads/2024/03/HandHeld-UKCA-DoC.pdf>
- <https://www.harvesteye.com/media/uploads/2024/03/HandHeld-CE-DoC.pdf>



Get to know your system

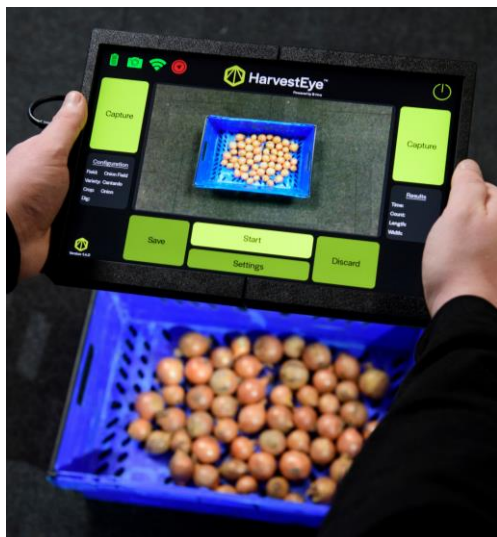
The HarvestEye system comprises of two key hardware components:

1. **Tablet** – Connects to the Camera and runs the software that detects and sizes crop and then uploads this for analysis
2. **Camera shroud** – Housing the camera that scans the crop to provide insights



Additionally, there are a number of other components that make up the HarvestEye HandHeld system, these are listed below:

- 1x HarvestEye 2.0 (HE2.0) Tablet with:
 - 1x RAM Mount
 - 1x Handheld Camera
 - 1x Camera Cable



Connections to the system

The only connection to the system is the camera, unless it is being charged:

Power

When being charged

Camera



Attaching HandHeld Camera

In order to attach the HandHeld Camera to the Tablet, the following steps should be followed:

1 Assemble the component parts



2

2 Attach the RAM Mount arm to the rear of the tablet and turn clockwise to tighten



3

3 Attach the camera to the other connection of the RAM Mount arm and tighten as necessary to secure the camera



Attaching HandHeld Camera cont.

The optimal camera placement is parallel to the rear of the tablet as shown



4 To connect the camera to the tablet, the short USB-C to USB-C cable is used. This is connected into a USB-C port on the left-hand side of the tablet



5 To connect the camera to the tablet, the short USB-C to USB-C cable is used. This is connected into a USB-C port on the right-hand side of the camera



Power Button

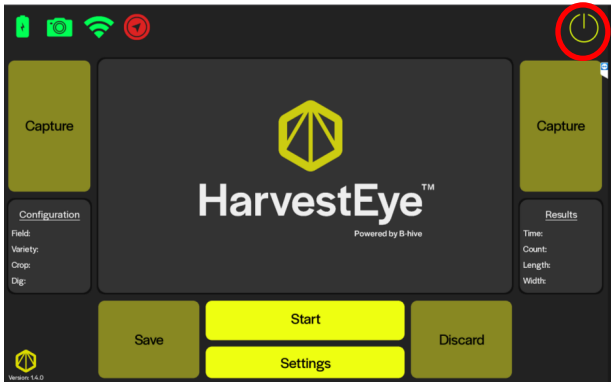
To turn the system on:

Using the physical power button – The power button can only be used to power on the tablet – located on the right-hand side of the tablet



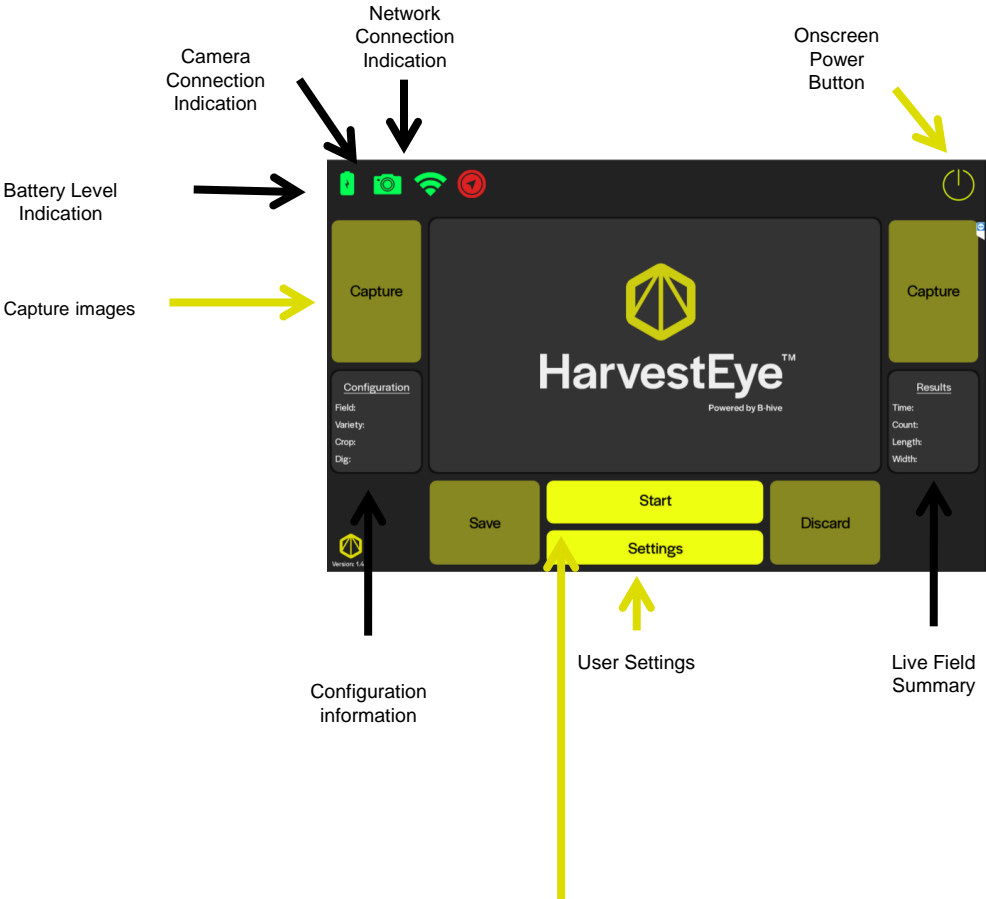
To turn the system off:

Using the onscreen software – The onscreen button (highlighted) can be pressed which will prompt you to confirm whether you would like to turn off the system



Getting Started

When the tablet is turned on, the main menu will be displayed. The available functions are set out below:



Key:

- Button
- Information



Getting Started

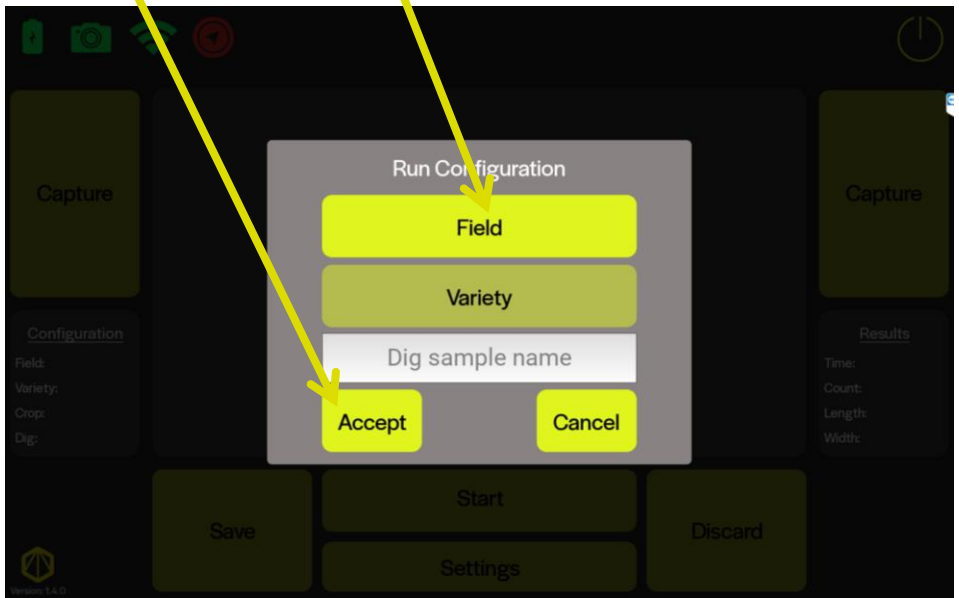
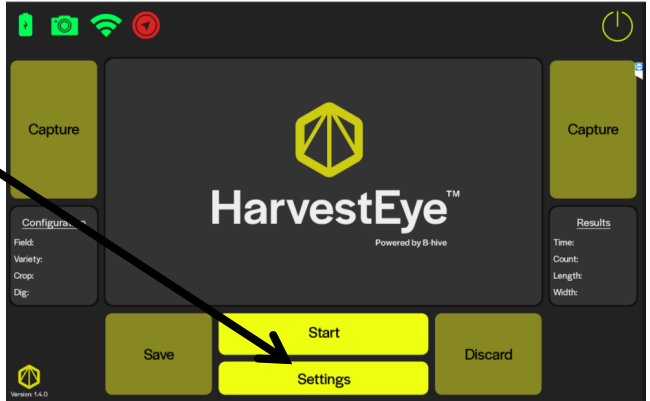
Your tablet should already be configured with the field and variety information that you provided through the web portal. Follow the steps below to start recording.

1. Press *Start* from main menu

2. Press the *field* icon to select the field and then the *variety* icon to select a variety.

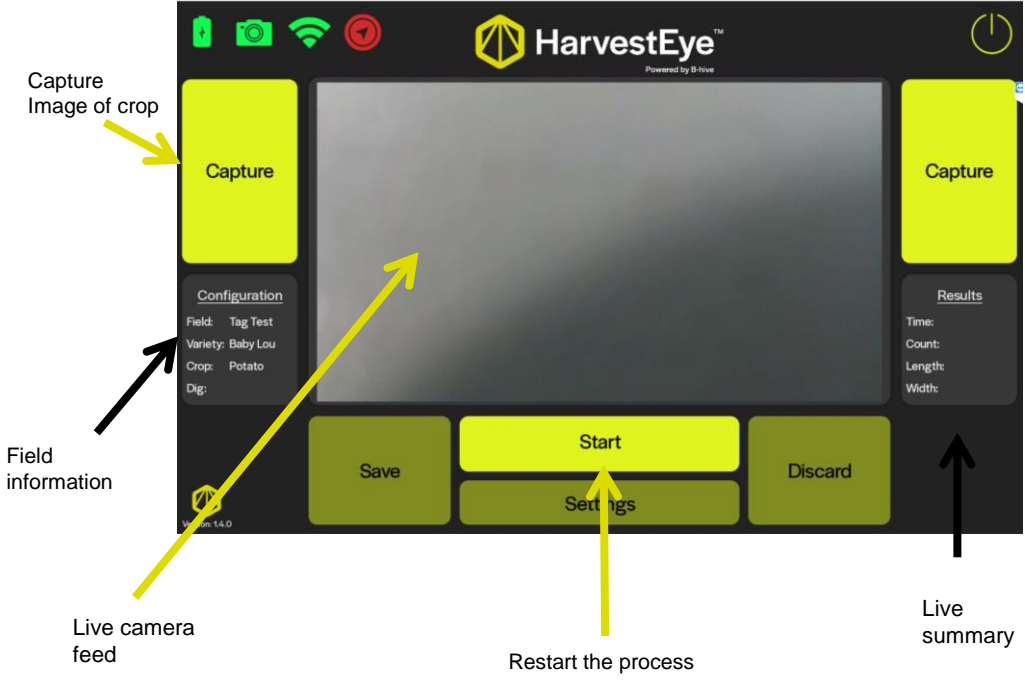
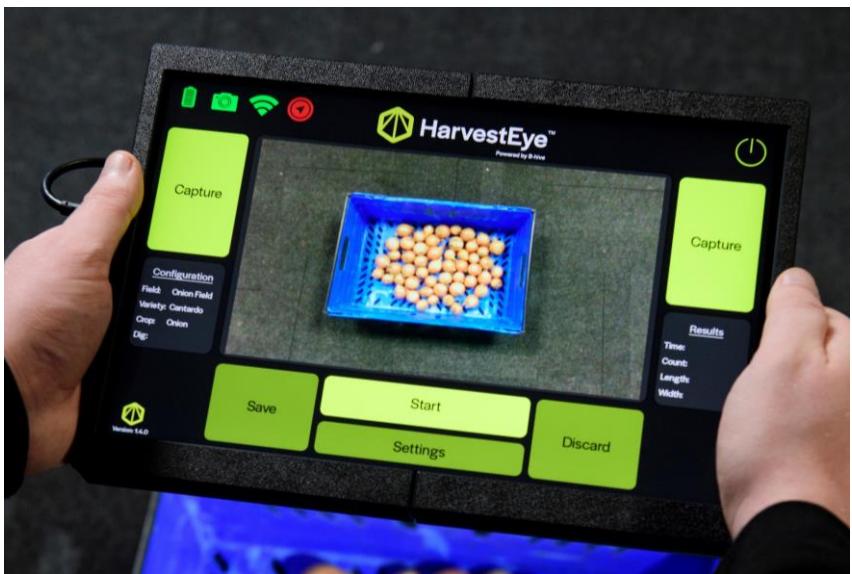
3. An optional Dig Name can also be entered

4. Press *Accept* to activate the camera and start scanning the crop



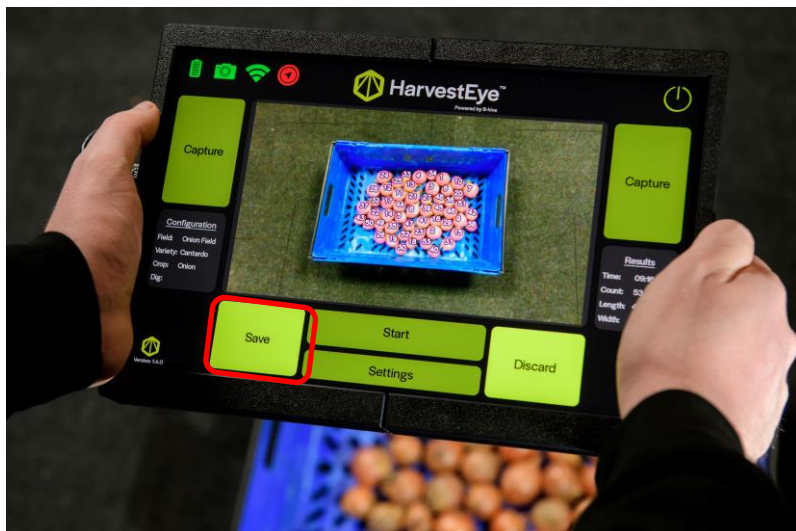
Starting and stopping the process

Once a Field and Variety have been entered, the live camera view will be shown on the tablet giving the ability to capture a picture:

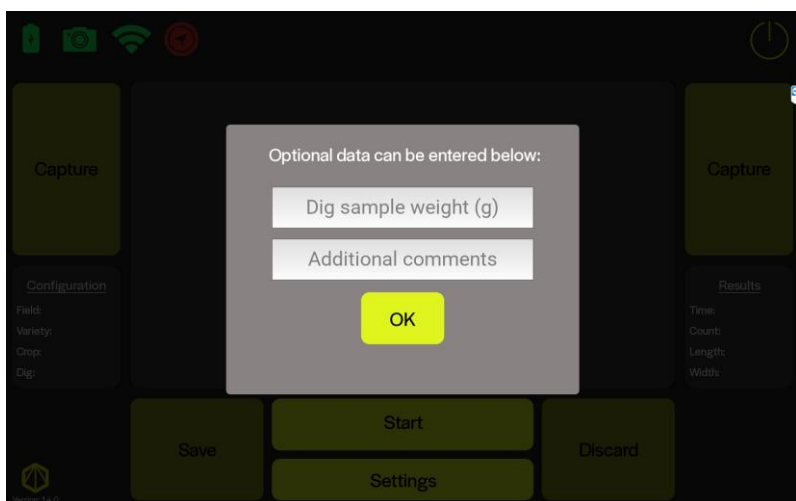


Capturing Data

To capture the crop data, on either side of the tablet, a capture button can be pressed which will show the picture of the crop with a pink (detected and sized) and blue (not sized) overlay. At this point if the frame is clear, the save button can be pressed.

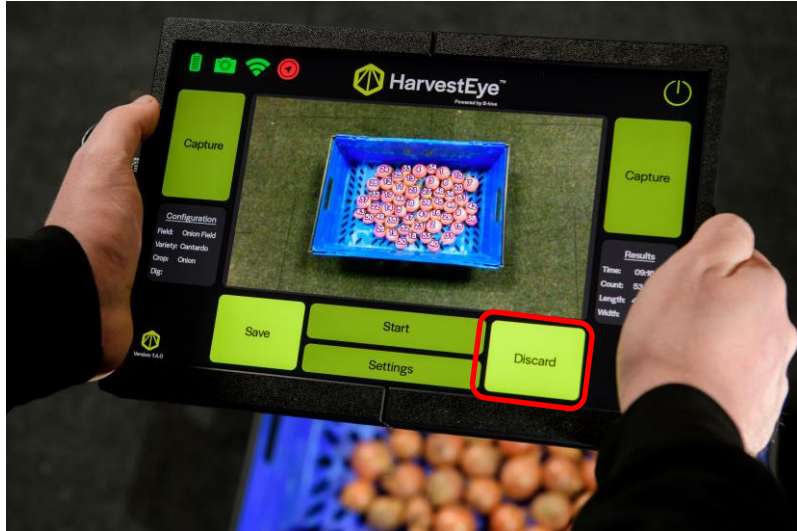


Upon saving the data a popup will appear allowing an optional sample weight to be added as well as any comments in relation to the sample in the picture. This could be a What3Words Location or a description of the quality of the sample for example.

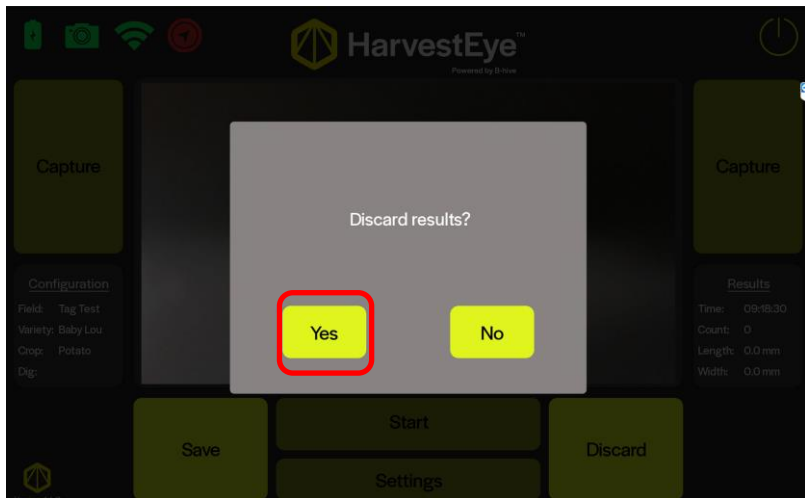


Discarding Data

To discard the crop data, press the discard button. This will present a final option to confirm you wish to discard the collected data.

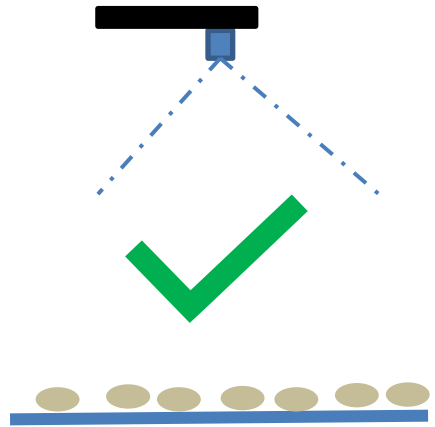


By pressing yes, the data will be deleted without being uploaded and the system will be ready to recapture data.

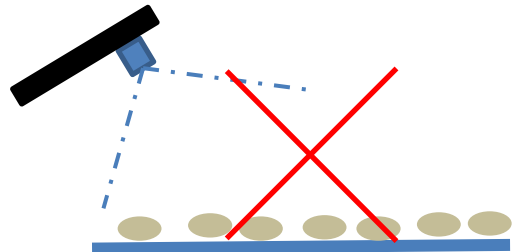
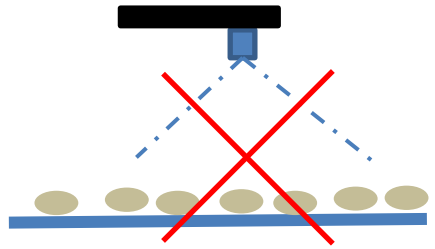


Capture Requirements

To ensure the camera is placed positioned optimally for the data capture the camera should be parallel to the crop and at a distance of around 70-100cm.



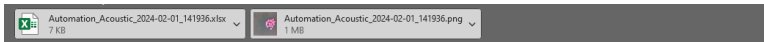
Avoid placing the camera too close to the crop to be captured or positioning the camera at a significant angle to the crop as this will limit the accuracy of the system



Data Email

Once you have uploaded the data from the system an email will be sent to the specified address with the collected data. The email will provide a summary of the information selected and attached will be:

- An Excel spreadsheet with the raw collected data
- The image uploaded from the tablet
- A pdf summary (see next page)



From: data@harvesteye.com <data@harvesteye.com>
Sent: 01 February 2024 14:31
Subject: HarvestEye Handheld Report: Automation, Acoustic

Dear Sir/Madam from HarvestEyeTesting,
Please find your sample measurement results in the attached Excel. The summary data for this sample can be seen below:
Crop: Potato
Field: Automation
Variety: Acoustic
Dig:
Time: 14:19:16
Crop count: 12
Comments:
For any questions, please don't hesitate to contact us at:
support@harvesteye.com

Thank you for using HarvestEye Handheld.
Best Regards,
The HarvestEye Team

A	B	C	D	E
detection	sizeband (mm)	weight (g)		
1	61	151		
2	63	193		
3	61	227		
4	65	199		
5	54	132		
6	63	183		
7	49	112		
8	59	157		
9	50	106		
10	69	330		
11	65	175		
12	64	190		



Data Email cont.

Alongside the raw data in an Excel file, the data is summarised in a pdf for quick reference with an overview of the:

- Count per Size Band
- % Count per Size Band
- Weight per Size Band
- % Weight per Size Band

HarvestEye Handheld Report



Sample Information

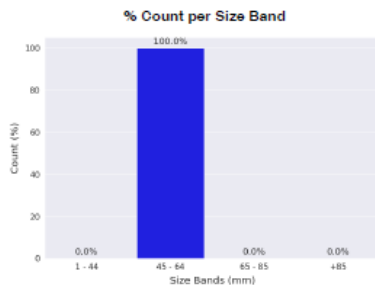
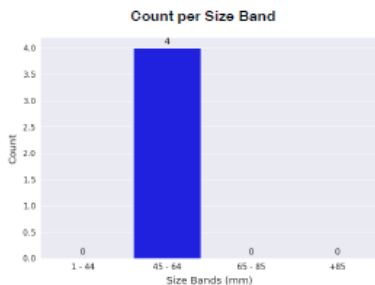
Farm: HarvestEyeTesting Field: Tag Test 1 Dig Sample: Sample_9 Timestamp: 2024-03-04 10:10:13
 Crop: Potato Variety: Acoustic Count: 4 Estimated Weight (Kg): 0.71

Summary Statistics

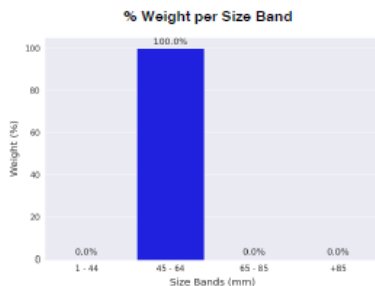
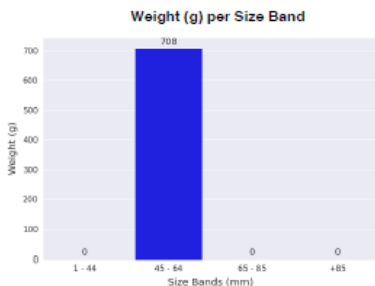


index	mean	std	min	max
Length (mm)	104.8	15.2	82.0	113.0
Width (mm)	50.5	3.3	55.0	62.0
Size (mm)	50.2	3.1	52.0	50.0
Weight (g)	177.0	25.1	152.0	208.0

Count Distributions

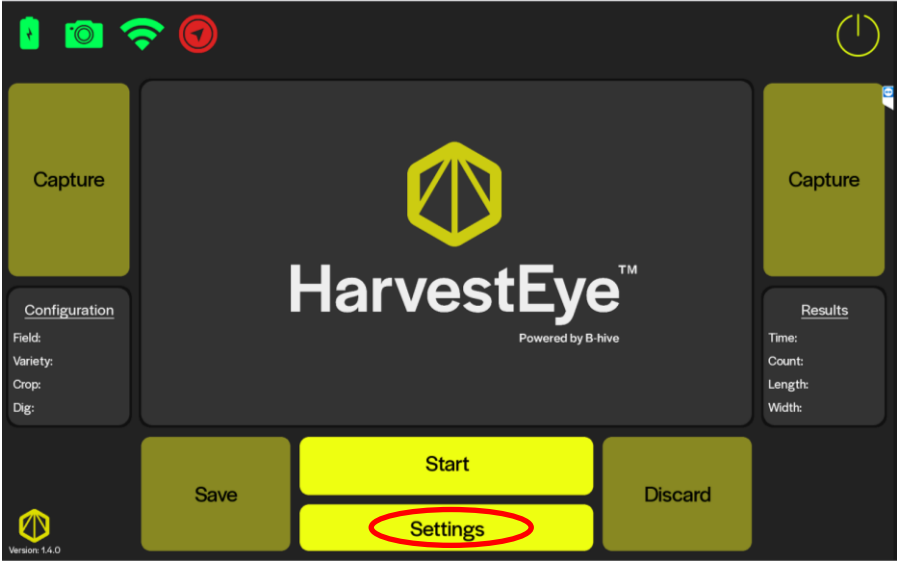


Weight Distributions

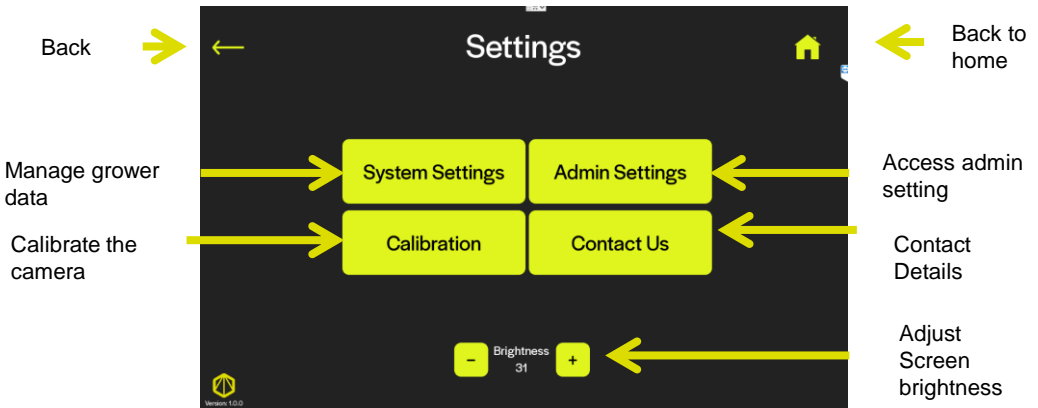


Settings

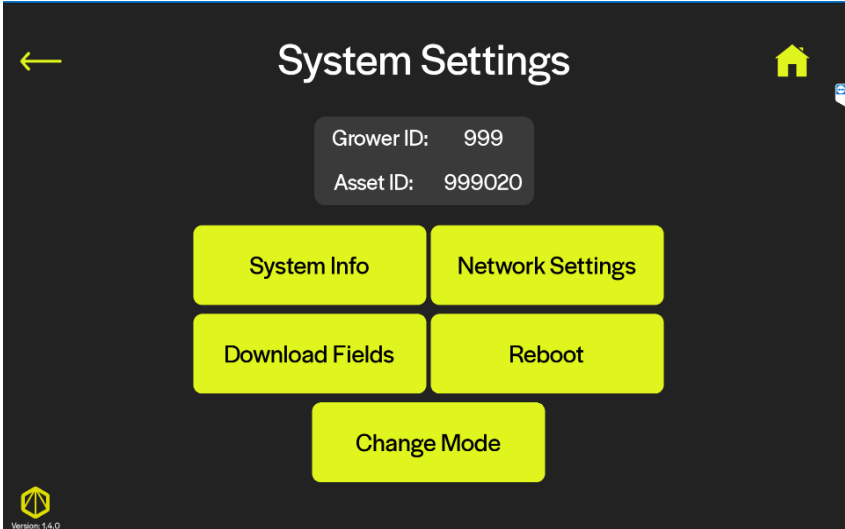
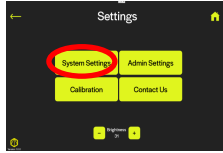
Access the Settings menu from the *Settings* button on main menu:



Within the settings menu there are four further menus:



System Settings



The *System Settings* contains options to:

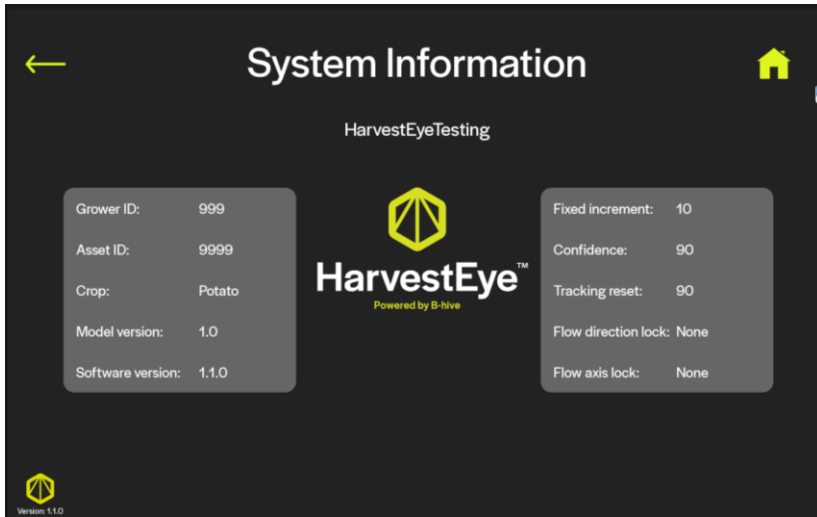
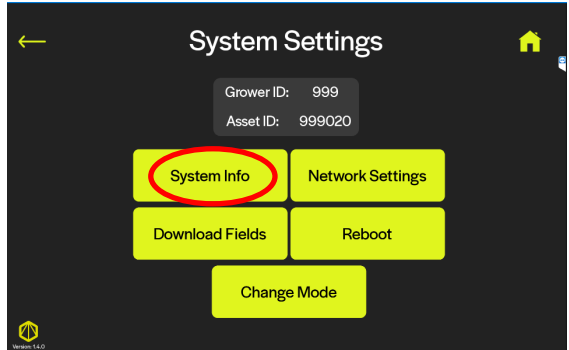
- See System information:
 - Find the Grower and Asset ID
 - Find the details of the system
- Network Settings:
 - Connect to a WiFi network separate to the 4G connection
- Download Fields:
 - Sync the grower fields from the portal onto the tablet
- Reboot the tablet
- Change Mode:
 - This will be visible if the tablet is configured for a belt and HandHeld mode.
If the tablet is configured for HandHeld only this button will not be present



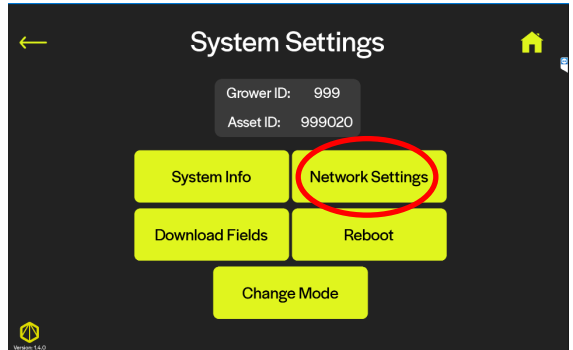
System Settings – System Info

The *System Info* Page contains information about the system such as the :

- **Grower ID**
- **Asset ID**
- **Selected Crop**
- **Model and Software Version**



System Settings - Network Settings



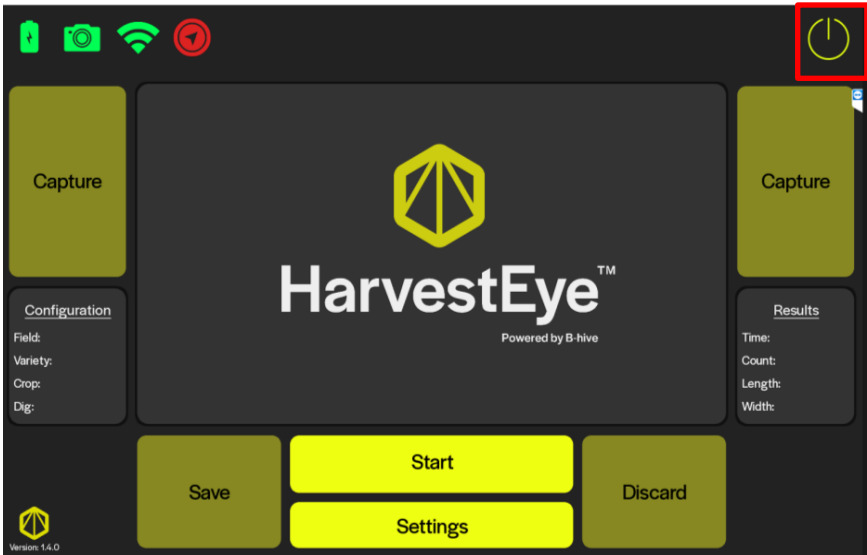
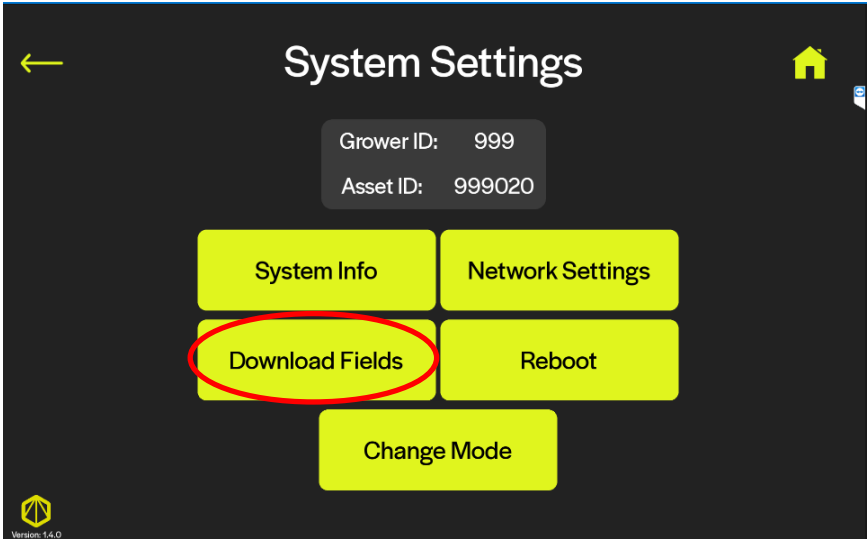
There are two modes of internet connection for the HE2.0 tablet:

- **WiFi** – The system can connect to a WIFI network to enable the data upload. This can also be done via a mobile hotspot
- **4G LTE** – The 4G Enabled SIM attached to the tablet can connect to the 4G network to allow remote access and data upload. This is primarily for the Belt setup.



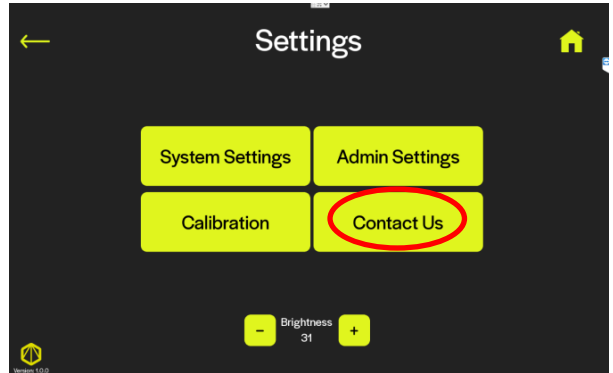
System Settings – Download Fields

When data in the online portal is updated, for example fields and varieties the tablet must be resynced. This can be done by selecting the *Download Fields* option in the settings or by restarting the tablet. The fields are automatically downloaded when the tablet turns on.

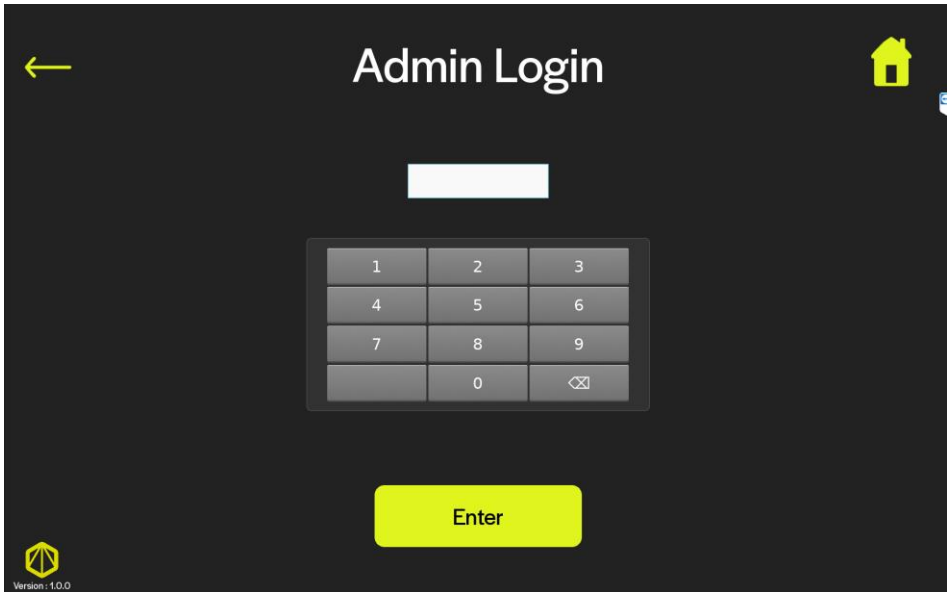
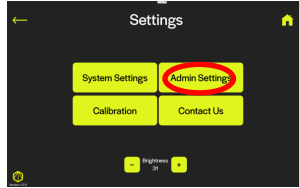


Settings - Contact Us

To contact the HarvestEye support team, the *Contact Us* button on the tablet will show the contact details:



System Settings - Admin Settings

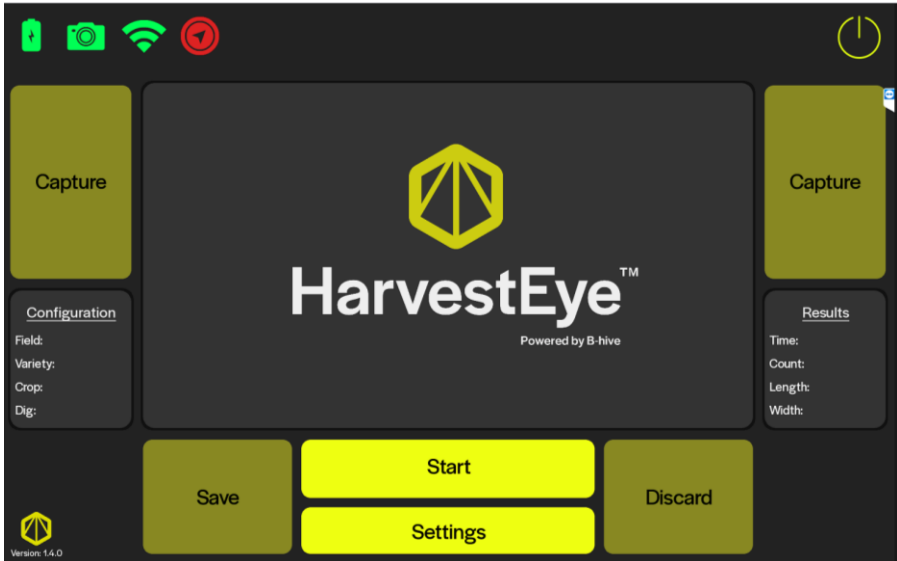





The *Admin Settings* Page is locked to users as it allows specific functions of the HarvestEye system to be changed or reset. Access to these settings can be made by HarvestEye personnel during the installation of the system and remotely for any support that is necessary.

You WILL NOT need to access this page yourself.



Warning Icons



-  **Low Battery** – The system is not connected to a power source. The tablet will turn itself off if the battery level falls too low
-  **No Camera Connection** – There is no camera detected meaning the system will not be able to identify crop
-  **No Internet Connection** – The tablet is not connected to the internet. The system will still work but will not upload data until connection is re-established



Accessing Insights

To upload field and variety selections use the provided login details at:

<https://portal.harvesteye.com/auth>

The HarvestEye system is linked to a secure database with dedicated storage for your data. Please note all data is securely stored and handled.

Contact the HarvestEye Team if you would like to have a demo of the portal.



The image shows a banner for the HarvestEye login page. On the left, there is a large, dark photograph of a red combine harvester operating in a field at night, illuminated by its headlights. The HarvestEye logo, a yellow hexagon with a stylized 'H' inside, is in the top left corner. Next to it, the text 'HarvestEye™' is displayed in white, followed by the tagline 'See The Bigger Picture' in a smaller, lighter font. Below the harvester image, there are small icons for a smartphone and a Twitter bird. At the bottom of the harvester image, the text 'HarvestEye™ Powered by B-hive' is visible. On the right side of the banner, there is a white login form. It features the HarvestEye logo at the top, followed by the text 'HarvestEye™'. Below this are two input fields: 'Username' and 'Password', each with a small icon to its left. Underneath the password field is a checkbox labeled 'Keep me logged in' with the text 'Requires cookies to be allowed' below it. A black button with the word 'Login' in white is positioned below the checkbox. At the bottom of the form, there is a link that says 'Forgot Password?'. At the very bottom of the banner, there is a small link that says 'Terms of Use, Privacy Policy and Cookies Policy'.



Troubleshooting + Support

The first step if you have any issues is to ensure all the cables are connected and plugged in correctly.

Please also reboot the system by powering off and turning back on.

In the event that you need further support please use the below contact details:

Telephone

+44 7971 598271

Email

support@harvesteye.com





HarvestEyeTM

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