About This Document

This User Guide will help you learn how to perform common tasks with your HarvestLab™. It is a supplement to the HarvestLab Operator’s Manual.

Read the Operator’s Manual for the following information:

- Theory of operation
- Initial setup
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GreenStar Forage Harvester - HarvestLab Settings

Set up the moisture sensor to ensure accurate constituent sensing.

HarvestLab Settings

To select a type of calibration and measurement, use the toggle key. The four types of calibration and measurement are:

- **Auto-Graph** - To display the current crop constituent list and a graph showing moisture average, range, and current values, select Auto-Graph. In this mode, the results display up to three constituents for the current crop.

**NOTE:** C1 is reserved for moisture only. All other constituents are listed after moisture. It is not possible to put moisture under C3.

**NOTE:** Moisture average and current values are also numerically displayed.
• **Auto** - To continuously display the current crop constituent list, select Auto. In this mode, the measurement results display up to five constituents for the current crop.

• **Manual-Graph** - To manually measure and display the current crop constituent list and a graph showing moisture average, range, and current values, select Manual-Graph. The Manual-Graph mode can be used for the following functions:
  - To manually start a measurement for the current crop, press the Start Management key.
  - To set up the moisture sensor, press the HarvestLab Setup key.
  - To display up to three constituents for the current crop, use the measurement results.

**NOTE:** Moisture average and current values are also numerically displayed.

• **Manual** - To manually measure and display the current crop constituent list, select Manual. The Manual mode can be used for the following functions:
  - To manually start a measurement for the current crop, press the Start Measurement.
  - To set up the moisture sensor, press the HarvestLab Setup Key.
  - In Manual mode, the measurement results display up to five constituents for the current crop.

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**GreenStar-Reports and Totals Page**

To display the GreenStar-Reports and Totals page, press the Total key.

If the necessary curves are loaded on the HarvestLab sensor, press the toggle key to change the view to inoculant and constituents. If an integrated printer is installed, the Field Totals or Harvest - SPFH Totals can be printed from the GS2 or GS3 display main page.
NOTE: Totals displayed are only calculated when documentation is turned on. Totals display can be filtered.

NOTE: Print Totals key appears only if the integrated printer option is installed and set up.

- To start the GreenStar Forage Harvester and Field totals printing process, press the Print Totals key.
- To modify the total page layout, press the Field Totals key or Harvest - SPFH key.

Forage Harvester-AutoLOC Page

The Forage Harvester-AutoLOC page displays the following information:

- Cutterhead speed
- Actual crop moisture or dry matter level depending on the fixed or measured source setting, if equipped with the HarvestLab sensor
• Actual length of cut
• Crop flow speed
• Cutterhead number of knives installed

To set the AutoLOC function, toggle between Fixed and Auto modes. The Auto mode is used for controlling the length-of-cut based on the crop moisture or dry matter level. The Fixed mode is used for controlling the length-of-cut based on a setting value entered using IVLOC switch on the corner post and the input control knob.

**NOTE:** The purpose of the sensor light beam calibration is to set an external black and white reference for an accurate moisture level calculation. This calibration must be carried out by authorized service personnel only. A password is requested to initiate the reference request.

**Upload Application** - To upload an application, press the Upload Application softkey. Then use a commercial USB memory stick and the connection box installed on sensor frame to load the sensor control unit’s specific application.

**NOTE:** Application download can be practiced only if expert mode status is ON and with USB memory stick installed in the connection box.
• **Upload Calibration** - It is recommended that the connection box and Personal Computer (PC) use the WEBUI for its calibration upload. For more information, refer to the Calibration Administration Page section in this user guide.

**NOTE:** Calibration download can be practiced only if expert mode status is ON and with the USB memory stick installed in the connection box.

### Wavelength Standard Measurement

A sensor is used for checking sensor functionality by measuring the sensor wavelength.

The wavelength standard must be kept in good condition for further measurement. Wavelength must not come in contact with:

- Diesel
- Gasoline (leaded or unleaded)
- Thinners
- Engine cleaner
- Cavity sealing
- After cleaning
- Finishing paint
- Blackboard lacquer
- Freeze protection

To ensure an efficient moisture sensor, initiate a wavelength standard measurement on a regular basis.

**NOTE:** Prior to starting measurement procedure, make sure sensor has fully started.

**NOTE:** Sensor light should light up after about 30 seconds. If this is not the case, check all connections or contact your John Deere dealer.

**NOTE:** Prior to starting measurement procedure, thoroughly clean sensor glass environment.

**NOTE:** Make sure that no external light source is interfering with wavelength standard measurement. For an efficient measurement, place the sensor in a dark area.

To initiate a wavelength standard measurement, perform the following steps:
1. Unlatch, then place sensor assembly into its unfolded position.
2. Remove seal from glass.
3. Remove cover from the wavelength standard.
4. Place wavelength standard above sensor glass and position it along the wavelength measurement.
5. On the Settings - Constituents - Tab - Measured Source page, select **Manual-Graph** or **Manual**.
6. On the HarvestLab Setup page, select **Start Validation**.
7. Place the wavelength standard on the sensor lens.
8. On the information message page, select **Enter**.
9. Select **Cancel** to cancel wavelength standard procedure.
10. Check the status displayed next to **Start Validation** reads **“Valid.”** Repeat the wavelength standard procedure if **“Invalid”** displays.
11. Remove wavelength standard from glass.
12. Reinstall seal.
13. Fold and latch sensor.
Set Up Personal Computer for HarvestLab Station Connection

Connect the HarvestLab Station by setting up Windows XP and Windows 7.

Windows XP Connection

NOTE: Before using the HarvestLab station for the first time, it is required to modify the network properties of the PC to be connected to the HarvestLab station.

NOTE: Connect HarvestLab station to a PC that is not part of a local network.

To set up a PC, perform the following steps:

1. Start PC.
2. Click Start Menu >> Settings >> Network Connections.
3. Double click Local Area Connection.
4. Click Properties.
5. In the General tab, use the scroll bar and click Internet Protocol (TCP/IP) and click Properties.
6. Click Use the following IP address and enter:
   • IP Address set to 192.168.0.100
   • Subnet mask set to 255.255.255.0
   • Default gateway set to NULL
   • No DNS
7. Save the new configuration.
8. Shut down PC.
9. Connect the cross over cable between PC Ethernet port and connecting box socket.
10. Plug in power adapter to turn table power socket.
11. Press part I of switch to turn ON the HarvestLab sensor and the turn table.

NOTE: The sensor requires about 30 seconds to turn on its light. The turn table rotates until HarvestLab sensor has fully started. When turning turn table OFF, the turn table rotates a few seconds. Then, the light turns OFF within 20 seconds. Do not remove power supply until HarvestLab sensor shuts down.
12. Restart PC.

**NOTE:** If issues occur during set up, contact your John Deere dealer.

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### Windows 7 Connection

**NOTE:** Before using the HarvestLab station for the first time, modify the network properties of the PC to be connected to the HarvestLab station.

**NOTE:** HarvestLab station must be directly connected to a PC that is not part of a local network.

To set up a PC, perform the following steps:

1. Start PC.
2. Select the **Start Menu** >> **Control Panel** >> **Network and Sharing Center**.
3. Double click **Change adapter settings**.
4. Select and double click **Local Area Connection**.
5. Select **Properties**.
6. In the Networking tab, select **Internet Protocol Version 4 (TCP/IPv4)** and select **Properties**.
7. Select **Use the following IP address** and enter:
   - IP Address set to 192.168.0.100
   - Subnet mask set to 255.255.255.0
   - Default gateway set to NULL
   - NO DNS

**NOTE:** Default IP address of the HarvestLab station is 192.168.0.1.

8. Select **OK**.
9. Shut down PC.
10. Connect the crossover cable between PC Ethernet port and connecting box socket.
11. Plug in power adapter.
12. Select part I of switch to turn ON the HarvestLab sensor and the turn table.

**IMPORTANT:** The sensor requires about 30 seconds to turn its light on. The turn table still rotates until HarvestLab sensor
has fully started. When turning turn table OFF, the turn table rotates and the light will go off. Do not remove power supply until HarvestLab sensor has shut down completely.

13. Restart PC.

**NOTE:** In case of difficulties encountered while setting up the PC, contact your John Deere dealer.
HarvestLab Station User WEB Interface

Set up HarvestLab stationary use by connecting the WEB interface, starting the sample measurement, and calibrating constituents. Setting up stationary use also requires the user to access the system settings page and system status page.

User WEB Interface

Before using the HarvestLab station, check that the crossover cable between PC Ethernet and connecting box socket is correctly plugged. To connect to the user WEB interface, perform the following steps:

1. Plug in power adapter to turn table power socket.
2. Turn ON turn table.
3. Start PC.
4. Set temporary internet files and cookies’ status “Check for newer versions of stored pages” to Never.
5. Start your familiar browser application.

Change the language at the top of the page. From this page you can:

• Start a sample measurement
• Access the Calibration Administration page
• Access the System Status page
• Access the System Settings page

Sample Measurement Page

The Measurement page allows the user to sample forage for moisture prediction.

Select Measure to start sample measurement.

To store your measurements, perform the following steps:

1. Connect a USB memory stick to the connection box of the HarvestLab sensor. For more information, refer to the Systems Settings page.
2. When the USB memory stick is connected, a "Log File" field will appear on the Measurement page. Select this field. The date will be stored on the USB memory stick.
Calibration Administration Page

Calibrations are visible on the HarvestLab Sensor on Calibration Administration page but not activated when they are downloaded from Stellar Support. An activation code can be purchased from your local John Deere dealer. Once the activation code is entered in the input box and Enter is selected, the status updates are activated.

To obtain your 26-digit activation code, visit stellarsupport.deere.com and log into your profile. Enter the serial number of your HarvestLab sensor and order number. If you do not have your order number, contact your John Deere dealer.

To activate calibrations, you need to:

- Enter the Serial Number
- Enter the Challenge Code
- Enter the Comar order number (sent from dealer once order is placed)
- Upload the calibration files from your PC to the HarvestLab sensor
- Review the deactivated calibrations on the Calibration Administration page
- Use the activation code to activate the calibrations
- Select or deselect calibrations you want to use on the Measurement Settings page

Measurement Settings Page

To select a calibration, perform the following steps:

1. Place a check in the Select column, if desired.
2. Select one calibration. Two moisture calibrations from different laboratories cannot be used at the same time.
3. Select Save.

NOTE: You can select up to five calibrations. By selecting multiple calibrations, the Measurement Settings page displays values for each selected calibration.

4. After changing the selection on the Calibration Administration page, save the selection and restart the HarvestLab sensor to display the right values on the Measurement Settings page.
New moisture calibrations are developed and distributed at www.stellarsupport.deere.com.

If new curves are available, perform the following steps:

1. Save calibration to PC.

2. Select **Browse** and select the calibration ................

3. Select **Add** ................................................................

**NOTE: After adding a new calibration, the sensor will need to be restarted.**

To delete calibrations, perform the following steps:

1. Place a check in the Select column for the moisture curve.
2. Select **Delete**.

In stationary use, calibration files shall be located on the PC hard drive. Use **Select File** to select model files in your file system.

**Filter-Info** - For factory use only.

Downloaded calibrations from Stellar Support using the software update will be visible on the Calibration Administration page; however, the calibrations will be deactivated.

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**System Settings Page**

The System Settings page allows the user to:

- Synchronize time with PC
- Connect a USB memory stick
- Validate measurement with wavelength standard
- Change the number of repacks
- Update Firmware

**System Time:** To synchronize the sensor’s time with the PC time, select **Synchronize with PC** button.

**USB Memory Stick:** The USB memory stick connects to the sensor to collect spectra data. To connect the USB memory stick, perform the following steps:

1. Connect USB memory stick to the connection box.
2. Select **Connect** ......................................................

To disconnect the USB memory stick, perform the following steps:

1. Select **Disconnect** ..................................................  
2. Disconnect the USB memory stick.

**Sensor Validation** - Select **Apply the wavelength standard and validate**, then refer to **Validate Measurement**.

**Repacks** - Provides the number of measurements of one forage sample that will be averaged for predicting moisture value on the Measurement page. To enter the number of repacks, enter the new number of repacks and select **Set**.

**Update Firmware** - Provides the user the ability to upload new Firmware to the sensor. If new Firmware is available, download www.stellarsupport.com onto a USB memory stick.

*NOTE: The updated Firmware must be located on the root of the USB link.*

To update the sensor, perform the following steps:

1. Download the updated Firmware to the USB memory stick.  
2. Connect the USB memory stick to the USB connection.  
3. Select **Detect** under the USB memory stick section.  
4. Select **Update** under the Update Firmware section.  
5. Disconnect the USB memory stick.

**Turntable** - Allow a measurement on standing crop to turn the functionality **ON** or **OFF**. Select **Toggle** to **Manual Mode** to quit the automatic mode and activate the **Turn Off** and **Turn On** buttons.

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**System Status Page**

Provides information about USB memory stick capacity, software version, sensor serial number, and Operating Hours Lamp/Sensor.

*NOTE: USB memory stick with new software needs to be installed in connection box.*