

# 20|20 CONNECT

**20|20 Connect Operator's Guide**

Precision Planting®

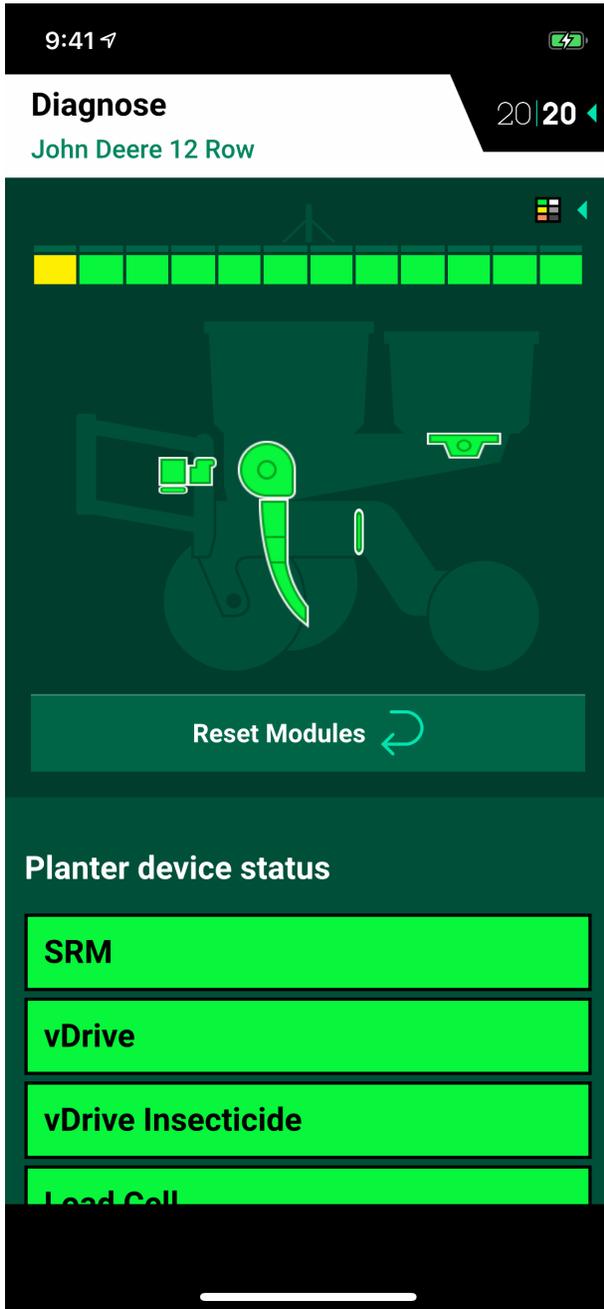
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## 20|20 Connect Overview

20|20 Connect is a mobile app that can connect to the 20|20 system and can control products such as vDrive, vApplyHD, and SmartDepth for system calibrations and Health Checks, as well as GPS and product setup.

20|20 Connect is compatible with any iPhone and iPad with iOS with version 11 and higher, as well as some Android phones and tablets with version 7.1 and higher.



# How to pair the 20|20 Connect App

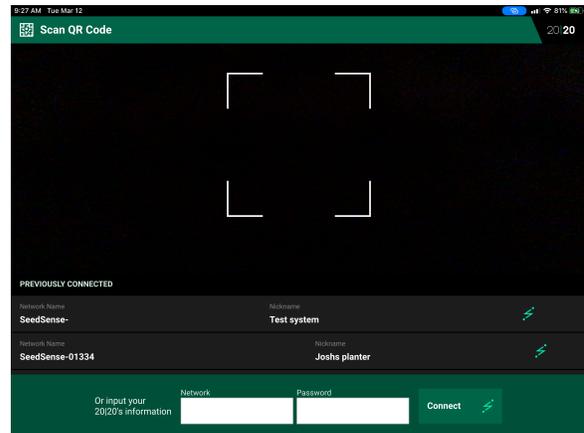
Before starting to connect, download the 20|20 Connect application from either the Apple App Store or Google Play store.



## Step 1:

When the 20|20 Connect App is opened, it will first require pairing with a 20|20 monitor. This pairing will initially be done using a QR code.

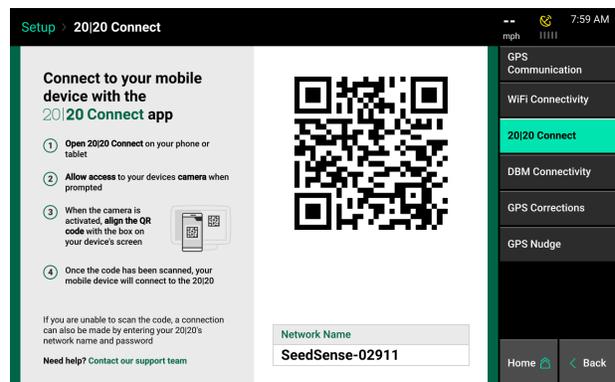
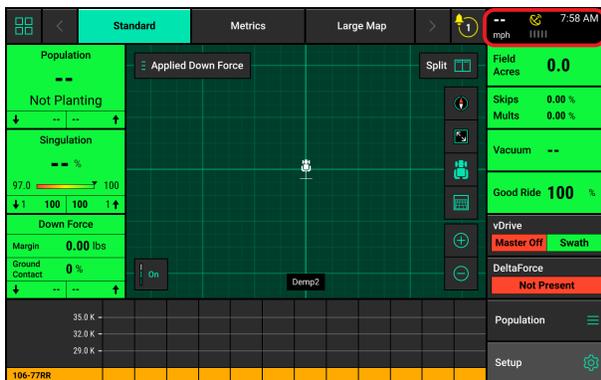
**Note:** Before connecting to the 20|20 screen on an Android system, the LTE data must be turned off on the device, or the WiFi based connection to the 20|20 system will not function.



## Step 2:

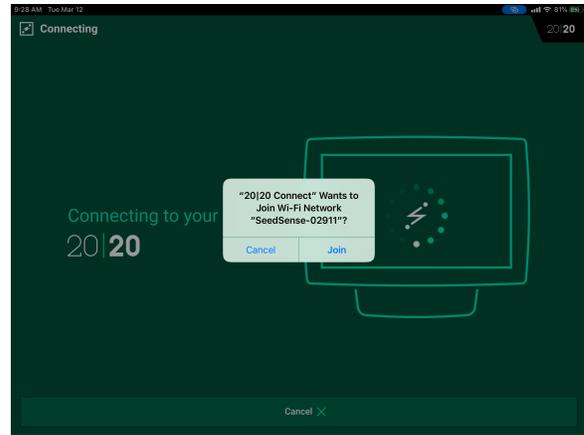
Navigate on the 20|20 monitor to the Speed button on the top right corner, then select 20|20 Connect from the menu on the right.

**Note:** 20|20 Connect will require 2019.1.0 software or newer.



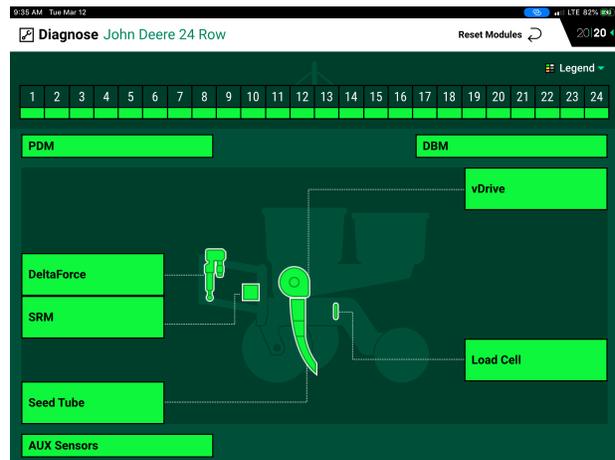
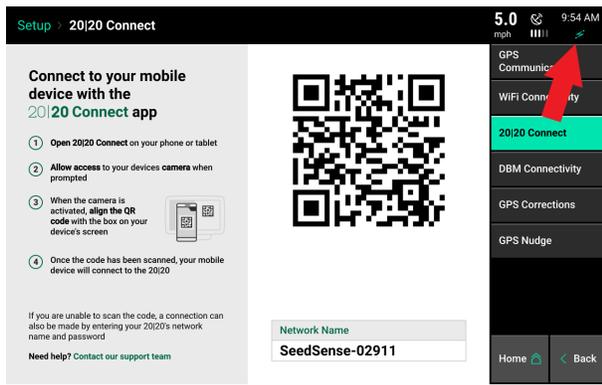
### Step 3:

Scan the QR code on the 20|20 display using your mobile device. Once the scan is complete, accept the prompt to join the 20|20 WiFi network.

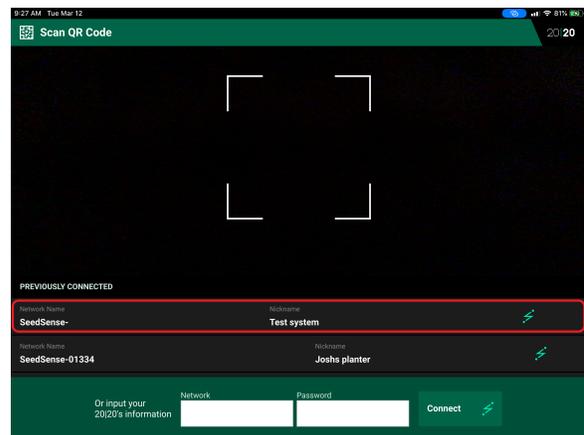


### Step 4:

Once the mobile device has joined the network, the app will open up the Diagnose page. The 20|20 display will also display a 20|20 Connect symbol in the speed icon.



If you have previously connected to this display, the system can also be connected by selecting this display in a 'Previously Connected' list at the bottom of the screen. Each display can also be given a nickname under the Settings tab on the app.



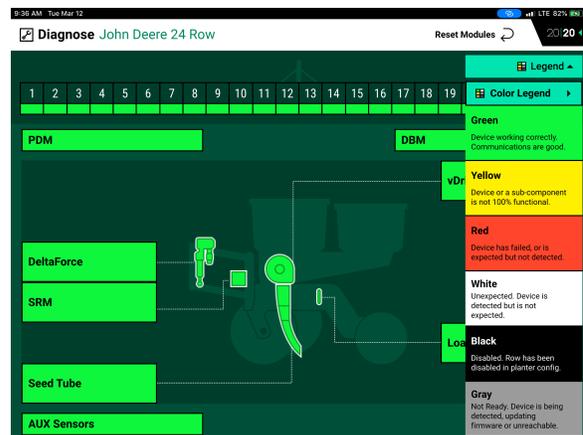
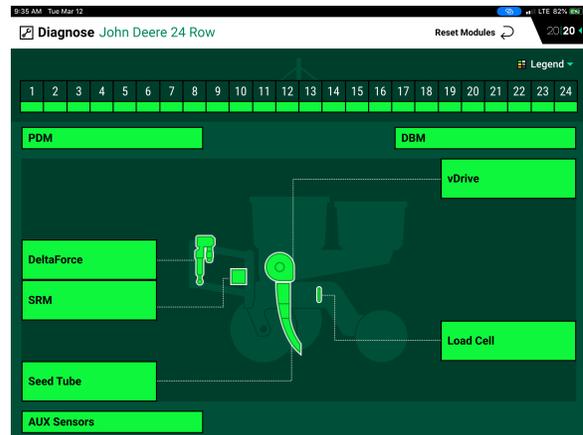
# Diagnose

The Diagnose Menu is the primary location for trouble shooting issues related to the operation of the 20|20 system itself and all products configured on the monitor. The schematic on this page shows each component including the Base Module that the display screen connects to. Each product that is configured is displayed along with a row unit showing a drawing of the product(s). Additionally, there is planter bar at the top of the screen displaying the health of each row.

Reset modules can be performed from the mobile device by pressing ‘Reset Modules’ at the top of the screen.

## Color Legend

A legend of the diagnose page can be accessed by pressing ‘Legend’ in the top right corner



**Green** - The system is working correctly and communications are good. Select “Color Legend” to view an explanation of what each color indicates.

**Yellow** - A Device or sub-component is not 100%.

**Red** - Device has failed, or is expected, but not detected.

**White** - Device is detected, but is not expected.

**Black** - Row has been disabled in the planter configuration.

**Gray** - Device is being detected, updating firmware, or unreachable.

## Level 2 Screens

Level 2 screens for each device can be accessed by pressing on any of the device buttons on the diagnose screen.

**Note:** On some mobile devices, it may be necessary to swipe left to view all of the metrics.

Row	Population		RPM		Stability	Supply Volts	Drive Amps	Duty Cycle
	Actual	Cmd	Actual	Cmd				
1	32,015	32,000	26.9	26.9	99%	12.9	0.17	20%
2	32,020	32,000	27.0	26.9	99%	12.8	0.17	20%
3	32,020	32,000	26.9	26.9	100%	12.8	0.17	20%
4	32,020	32,000	27.0	26.9	100%	12.8	0.17	20%
5	32,030	32,000	27.0	26.9	100%	12.8	0.13	20%
6	32,020	32,000	26.9	26.9	100%	12.9	0.13	19%
7	32,015	32,000	27.0	26.9	100%	12.8	0.22	20%
8	32,020	32,000	27.0	26.9	99%	12.9	0.20	20%
9	32,020	32,000	27.2	26.9	99%	12.9	0.22	20%
10	32,020	32,000	27.0	26.9	99%	12.8	0.23	20%
11	32,015	32,000	26.9	26.9	99%	12.9	0.20	20%
12	32,025	32,000	27.0	26.9	100%	12.9	0.22	20%

Row	Sensor		Population		Singulation	SRI	Total Seeds
	Source	Type	Actual	Cmd			
1	SRM	DICKEY-john	Not Apply	32,000	100.0%	--	0
2	SRM	DICKEY-john	Not Apply	32,000	100.0%	--	0
3	SRM	DICKEY-john	Not Apply	32,000	100.0%	--	0
4	SRM	DICKEY-john	Not Apply	32,000	100.0%	--	0
5	SRM	DICKEY-john	Not Apply	32,000	100.0%	--	0
6	SRM	DICKEY-john	Not Apply	32,000	100.0%	--	0
7	SRM	DICKEY-john	Not Apply	32,000	100.0%	--	0
8	SRM	DICKEY-john	Not Apply	32,000	100.0%	--	0
9	SRM	DICKEY-john	Not Apply	32,000	100.0%	--	0
10	SRM	DICKEY-john	Not Apply	32,000	100.0%	--	0
11	SRM	DICKEY-john	Not Apply	32,000	100.0%	--	0
12	SRM	DICKEY-john	Not Apply	32,000	100.0%	--	0
13	SRM	DICKEY-john	Not Apply	32,000	100.0%	--	0
14	SRM	DICKEY-john	Not Apply	32,000	100.0%	--	0
15	SRM	DICKEY-john	Not Apply	32,000	100.0%	--	0

## Event Log

Select the Event Log button to view a list of all event codes/error codes that have happened on the system. The Event Log is in order from the most recent event to the oldest event with the newest event codes at the top of the list. All events will have a number and a date/time when the event happened along with a description of the event. Select any event code to view additional details for that specific code

Additionally, event codes can be sorted by a system type. Select the system type on the right hand of the screen (e.g. SRM). System types will only be available for selection if there are event codes for specific systems. Otherwise, select “Entire System” to view all event logs.

Event #	Start	End	Description	Product	System
414	March 12, 9:16:04 AM	--	Low Load Variation on row 1	Load Cell	Entire System
901	March 12, 9:09:52 AM	--	Loss of SRM on row 16	SRM	Load Cell
901	March 12, 9:09:52 AM	--	Loss of SRM on row 15	SRM	SRM
901	March 12, 9:09:52 AM	--	Loss of SRM on row 14	SRM	SRM
901	March 12, 9:09:52 AM	--	Loss of SRM on row 13	SRM	SRM
905	March 12, 8:46:23 AM	--	DeltaForce Solenoid on row 1 ...	SRM	SRM

# Health Checks

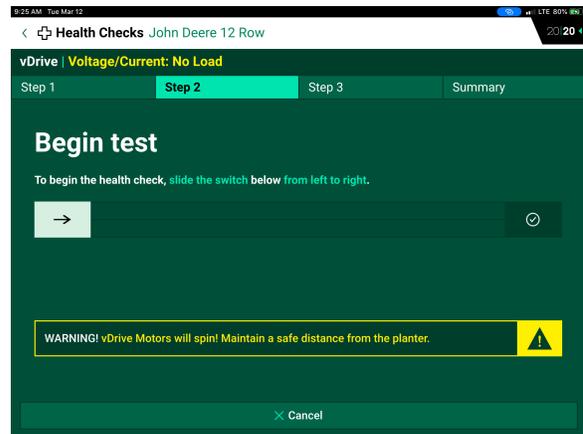
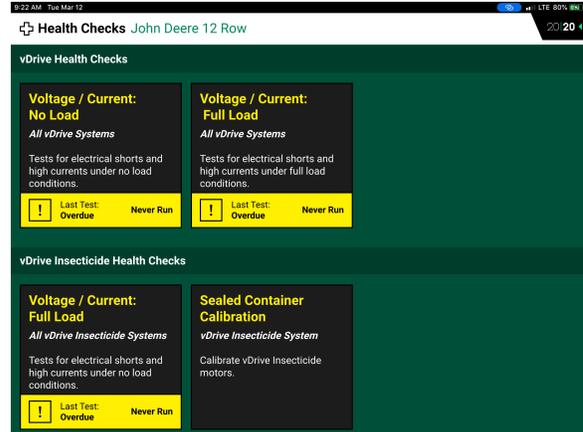
Perform health checks on the different systems configured on the monitor. Health checks will give a report card for the system after completion. Follow the on screen instructions for each health check. For more information on specific health checks, see the operation guide for each specific product.

**Note:** 20|20 does not support DeltaForce Health checks.

Select a Health Check to run it. To begin the health check, you will need to swipe the arrow from left to right.

Once the health check is complete, the results will be displayed.

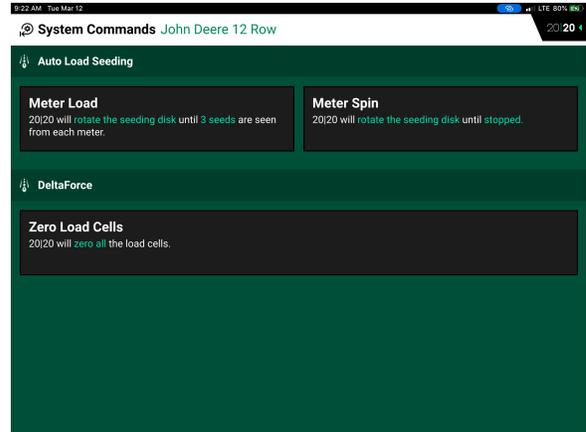
**Note:** On some mobile devices it will be necessary to swipe left to view all of the result data.



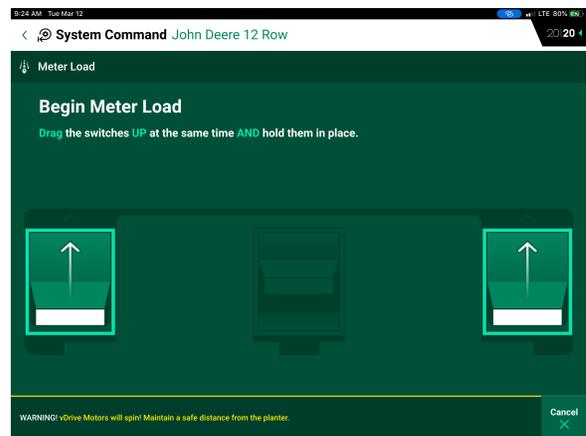
Row	Pass/Fail	Volts		Speed Test at 30 RPS				Speed Test at 80 RPS			
		Min	Avg	Amps	DC Min	DC Max	Stability	Amps	DC Min	DC Max	Stability
1	Pass	12.5	12.8	0.14	16.1	16.3	99.3	0.40	40.0	40.3	99.5
2	Pass	12.4	12.7	0.13	16.3	16.5	99.3	0.37	40.2	40.6	99.5
3	Pass	12.4	12.8	0.13	16.6	16.8	99.3	0.35	40.6	40.9	99.8
4	Pass	12.4	12.8	0.13	16.6	16.7	99.3	0.37	41.7	41.9	99.8
5	Pass	12.4	12.7	0.10	16.8	17.0	99.3	0.26	40.9	41.4	99.8
6	Pass	12.6	12.8	0.11	15.4	15.5	99.3	0.26	38.2	38.5	99.8
7	Pass	12.4	12.8	0.17	16.3	16.5	99.3	0.47	39.7	40.1	99.8
8	Pass	12.5	12.8	0.16	16.3	16.5	99.3	0.45	40.3	40.5	99.8
9	Pass	12.6	12.8	0.18	16.7	17.2	98.7	0.50	40.8	41.3	99.5
10	Pass	12.5	12.8	0.18	16.4	16.6	99.3	0.51	40.4	40.7	99.8
11	Pass	12.5	12.8	0.16	16.5	16.6	99.3	0.46	41.1	41.5	99.8
12	Pass	12.6	12.9	0.18	16.8	16.9	99.3	0.50	42.3	42.6	99.8

# System Commands

System Commands includes functions such as Meter Load, Meter Spin, and Zero Load Cells.

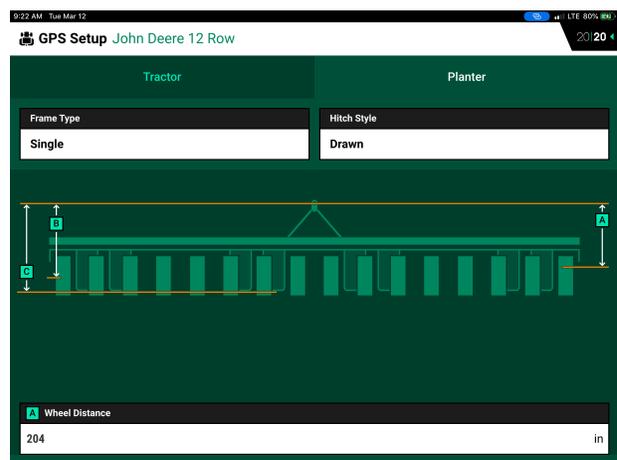
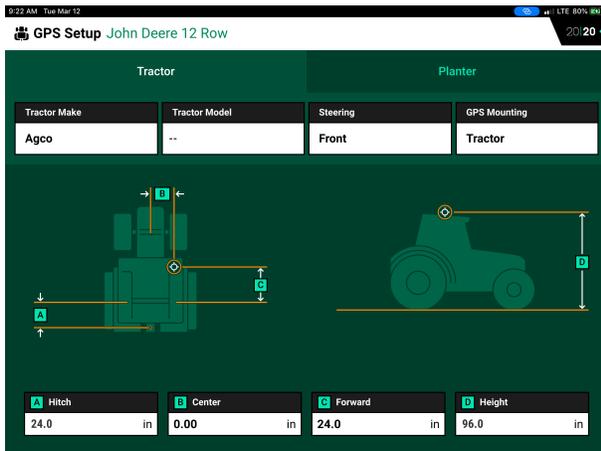


For some system commands, it will be necessary to hold up the auto-load switches, similar to the 20|20 display.



# GPS Setup

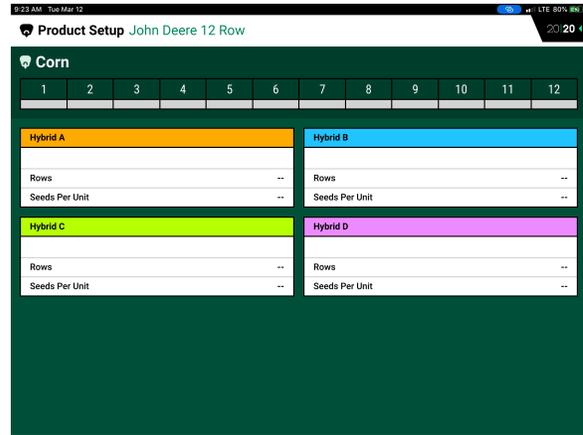
GPS offset measurements must be setup prior to planting in order for the monitor to correctly control and model the planter. These measurements can also be entered into the 20|20 Connect App. For details on step by step instructions for GPS offsets, refer to the 20|20 Operator's Guide for Planters.



# Product Setup

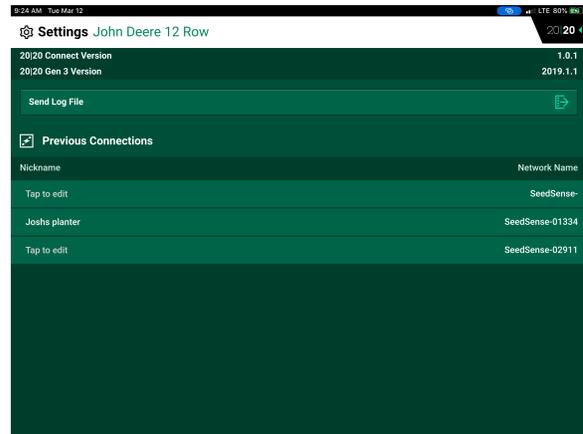
The Products menu in the Navigation Pane is used for assigning seeding (hybrids/varieties), liquid, and insecticide product names that are being applied. Seeding hybrids/varieties can always be assigned, while Liquid and Insecticide product names can only be assigned if control products for these are configured on the monitor.

To add products, follow the same process as would be used on the 20|20 screen. Refer to the 20|20 Operator’s Guide for Planter for more details.



# Settings

The settings page displays information on the system. This includes the below items:



**20|20 Gen3 Version** — This displays the 20|20 monitor version the system is paired with.

**20|20 Connect Version** — This displays the current 20|20 Connect app version.

**Send Log Files** — Send this log file to the Precision Planting support team upon request. This will include a log of communication between the 20|20 Connect app and the 20|20 display.

**Previous connections** — Nicknames can be entered for any previously connected 20|20 system. This will populate on the initial connection screen. Selecting a previous connection will bypass the need to use the QR code to connect.