Manure Manager New Product Showcase Webinar: HarvestLab 3000 – Q&A

Does the sensor have to be calibrated?
A Black and White Reference calibration should be performed every 1,000 hours, or once a year.

What is the accuracy of the reading for N, P and K?
The HarvestLab 3000 performs 4,000 readings per second, which are correlated with calibration curves for the nutrients measured. The nutrient curves have been validated with wet chemistry analysis to give the correlation between the NIR sensor and the laboratory process. The HarvestLab 3000 is highly accurate providing consistent readings over the total application process, by measuring all of the applied manure and not a few random samples pulled from the storage location.

How does the sensor measure nitrogen?
HarvestLab 3000 uses Near Infra-Red technology to measure the light reflectance from the manure stream. This is correlated through calibration curves to produce the nutrient readings.

What is an estimated cost range for a unit?
Due to difference of application equipment, precision ag equipment a customer may already own and individual needs, the price in each situation can be different. Please contact your local John Deere Dealer for solution pricing for your specific situation.

Can this work with low TS wastewater applications? Less than 2% TS?
The Manure Constituent Sensing curves are limited to 2-10% Dry Matter, DM solutions <2% will not be accurately monitored at this time.

Is the sensor measuring only total nitrogen or will is measure organic nitrogen, and Ammonium N as well?
HarvestLab 3000 provides Total Nitrogen and Ammonia Nitrogen readings. Ammonia Nitrogen is that portion which is readily available for plant uptake as well as subject to loss by denitrification or leaching. Total Nitrogen minus Ammonia Nitrogen leaves the organic portion which and will be available over time. This is the residual affect seen with manure applications the second and third years.

So do you still need to send a sample to the lab for this to be accurate?
Customers are welcome to pull samples and send to their labs. The suggested procedure is to pull from the application rig after the slurry has been agitated and is representative of what is being applied. The customer should also take a screen shot of the displayed values from the HarvestLab 3000 at the same time so that samples readings are comparing the same manure sample consistency.

So P and K are calculated based off of N values? How do you account for highly variable manure coming out of a manure lagoon?
Nutrient values are calculated off individual calibration curves for each nutrient within the software. N, P, and K are each measured separately at the same time. This allows much higher degree of accuracy based on the variability of the manure solution.

What is the expected lifespan?
HarvestLab 3000 has been designed for the rugged applications of forage harvest and manure application. The standard warranty is one year. Power Guard extended warranty options will be available at a future date.

What has the consumer feedback been?
Very positive in the fact they now can treat manure as a nutrient source and not just a waste product. By having as applied maps they can then make confident decisions on what their starter and side-dress nutrient needs are and apply them with prescription accuracy.

Have there been any issues with calibration if used with non-John Deere machines?
The calibrations reside on the HarvestLab 3000 and as such aren't dependent upon brand of tractor or applicator. We do require a John Deere 4640 Universal display and StarFire Receiver in order to make the solution work on non-Deere machines.

Can you get reports of nutrient levels applied in each field?
The data is stored in Operations Center and available for viewing, printing, analysis and sharing with trusted advisors. Each of the four documented layers can be viewed for each field location.

Many producers are utilizing multiple tankers, making outfitting each machine fiscally difficult. Do you have plans for a solution to take samples with the stationary kit?
There is interest in stationary pump station monitoring. This would give customers load averages, but they would be forfeiting the as applied nutrient maps showing exactly what was applied where. This would impact their ability to create prescriptions for additional nutrient applications. We've seen a manufacturer in Europe create a stationary stand, but it has not been imported yet to North America.

How is the third-party verification going of this technology in the U.S.?
HarvestLab 3000 and the Manure Constituent Sensing have had rigorous third-party testing done in Europe by the DLG association. There are links to those reports on our website. There aren't any third-party testing results published in the U.S. at this time.

Where can we find the verification done by University of Wisconsin?
The University of Wisconsin work was not an independent field trial validation project with published results. Rather, they were contracted by us to run samples with our technology and then run the wet chemistry analysis on the same samples in their laboratory. These results were used to validate the initial curves created in Europe. This validation was necessary to consider differences in manure types, animal rations, and how manure is handled in North America. The results were favorable and allowed us to utilize the curves that Europe has been running for two years now.

When this system is operating on a non-John Deere machine, is it operating on the non-John Deere CAN or is there a universal harness that is needed to connect the sensor/display/receiver together?
Do to wide variability of equipment available, please contact your John Deere Dealer for the necessary equipment needed to create a successful solution.

Do you need to tell the system which manure you are applying?
Yes, there are two manure curves, one for swine and one for cattle (dairy and beef).

Operations Center only show last pass for a coverage map. When will we see a multi-layer map that accurately shows what was applied on the headland when using a dragline?
This feature is being addressed by the development teams at this time. The solution involves not just manure application, but all operations where there are headland turns; for example, harvest, when a machine is still in threshing mode but not taking any more crop. The Operations Center team is working on a solution that will be applicable for any operation occurring within those field boundaries.

Why are you not being transparent with the data from U of WI? At least come out with percent correct / incorrect or the JD # vs the lab sample lbs.
As stated above, the U of WI work was not replicated field trials with published results.

How difficult is it to mount the sensor hardware to application equipment?
Equipment mounting is not difficult. We require a section of straight pipe where we can substitute the mounting "skateboard." This needs to be after the flow meter for accurate documentation and should not be mounted on a dragline swing arm due to impact shock on turns. Several manufacturers are already making their equipment HarvestLab 3000 ready.

How accurate is the sensor when reading digester effluent (dairy)?
There will be a separate bio-gas curve for those types of applications.

Could we get the ability to use a cart for equipment config? For example, we have two liquid trailers at the back of the tractor, and we don't have access to a cart on the config menu of manure.
Please work with your local dealer and Deere Field staff to document this need and have them submit it to the feature back log request.

is this product available now? Is there information available in the sales manual?
Yes, the product launched in August 2019 and is available for order. Information is available for John Deere dealers in Value Selling Navigator and publicly at JohnDeere.com by searching for Manure Constituent Sensing.

After each use, does the sensor need to be cleaned with running fresh water by sensor? Or can the sensor be used and let sit then used again weeks later?
The mounting flange protects the sensor from actual contact with manure. The flange has a sapphire lens that protects the HarvestLab 3000 sensor eye from direct contact and doesn't require additional maintenance for operation between applications.

Can the reports – what's been applied where – be printed out/shared with the farmer?
Yes, as applied reports and analysis can be performed in Operations Center. This data can be printed in report formats or shared electronically to other trusted advisors via Operations Center.

Who has access to the information from the monitor?
The customer has control of the data in John Deere Operations Center. The display data can be uploaded to Operations Center where the customer determines who has access to the data. All Deere Data privacy policies apply to this solution.