

Yield Map Data Sharing Protocol

Nutrient Management Spear Program

<http://nmsp.cals.cornell.edu/NYOnFarmResearchPartnership/YieldDatabase.html>

Main contact: Quirine Ketterings (qmk2@cornell.edu or 607-255-3061)

Yield monitor data are valuable resources for identifying whole field productivity and within field yield variability. Before making any management decision based on these data, raw yield monitor data need to be evaluated for errors and cleaned. Two projects are ongoing that could benefit from access to farmer yield monitor datasets: (1) Forage Yield Monitor Data Processing for Accurate Maps; and (2) Updating the New York Corn Yield Database. We are currently working with producers and planners to collect whole farm yield data harvested with yield monitors across multiple years. We invite farmers with reliable corn yield data (forage and/or grain) to share data with us.

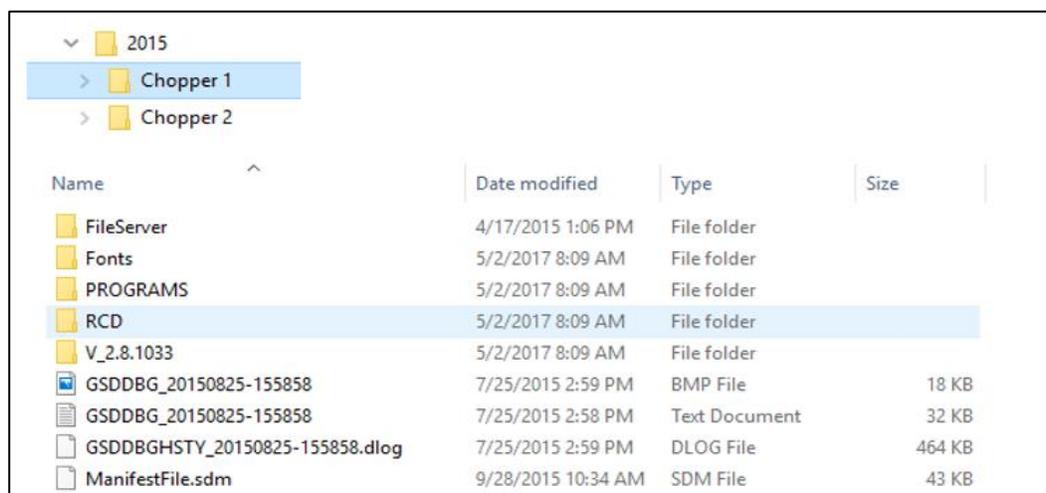
Goal:

- 1) Develop protocols and methods to systematically clean forage yield monitor datasets.
- 2) Update the New York corn yield potential database.

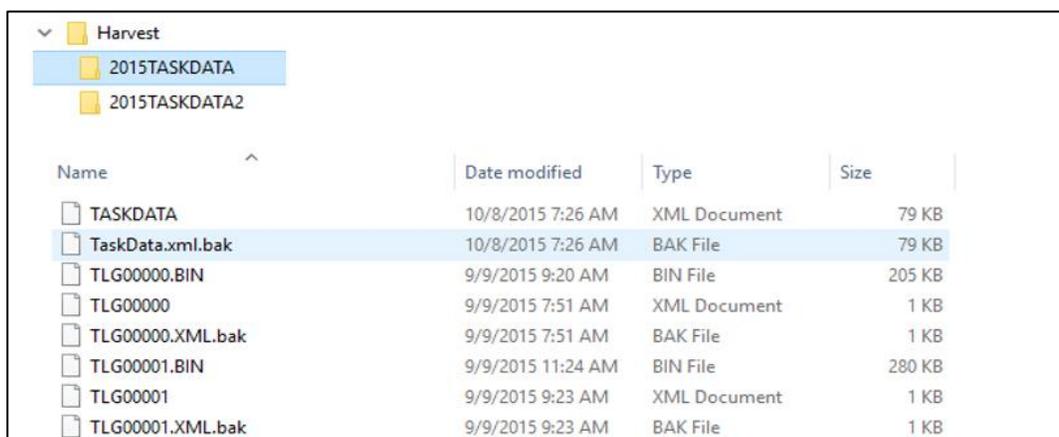
Data Sharing Instruction:

Yield monitor data can be shared as raw yield data downloaded from a field display or monitor, or in AgLeader advanced or Greenstar text (*.txt) format.

1. Preferred method of data sharing is by downloading all the raw yield monitor data from the monitor display to a USB drive. Yield monitors are manufactured by different companies and their data structures vary among companies. Two examples of raw yield monitor datasets, from John Deere and CLAAS equipment, are shown below. For AgLeader yield monitor systems, copy .agdata files to the USB drive. For other yield monitor systems, make sure you copy all the contents of the parent folder containing the harvest data.



- Example of John Deere, GreenStar yield monitor dataset. The 'RCD' folder contains several 'subfolders' and files (with *.fdd, *.fld extensions) that are required in order to read harvest data. Copy the entire parent folder (Chopper 1' in this example) to the USB drive.



- Example of CLAAS dataset. Multiple files within the task data folder are required to read and process this dataset. Copy folder “Harvest” to the USB drive.

2. Farmers with access to a software that can export data in AgLeader advanced text format can send yield monitor data in this format as well. The minimum required column structure for this text file is shown below:

Column Header	Description
1. Longitude	Decimal degrees
2. Latitude	Decimal degrees
3. Flow	Pounds per second
4. GPS Time	Seconds
5. Logged Interval	Seconds
6. Distance	Inches
7. Swath	Inches
8. Moisture	Percent (wet basis)
9. Head Status	1 = harvesting, 0 = not harvesting
10. Pass Number	+1 for each header up/down

If you want to share your data in other formats such as shape files (*.shp), CSV files (*.csv) or any other text file (*.txt), make sure you have at least these 10 columns with the appropriate unit as the table above. Those 10 columns are required to clean dataset through “Yield Editor” software.

3. If you have small datasets (few fields) that you are willing to share with us, you can send those by email attachment. For bigger files (more fields), please call us or email us and we can setup a way to transfer files and/or time to pick up the datasets.
4. We would like to get copies of the boundary/frozen boundary files of each field along with the yield monitor data. This will save considerable time and hence speed up the data cleaning process. A shape file (*.shp) and associated files (shape file comes with set of associated files *.dbf, *.shx, and *.prj if projection is already defined) that contains the field boundaries information for the farm can be zipped and shared as an email attachment.

Your data will be added to our yield database and aid in updating of the corn yield potential database of Cornell University (yield per soil type). For farms with multiple years of data (3-4 years per field), the data will be summarized in terms of yield and yield stability over time, in an

effort to aid in evaluation of yield-based zone management. This research is ongoing with a smaller set of farms and could benefit from more farmer participation. Each farm that submits data will receive a summary report in return for participation in the project (yield per soil type across the farm; yield stability assessment if at least 3 years of data are submitted).

We appreciate your cooperation and collaboration!

If you are interested in participating, contact:

Quirine Ketterings (qmk2@cornell.edu or 607-255-3061)

Tulsi P. Kharel (tpk24@cornell.edu, 607-255-1723)

Sheryl Swink (sns7@cornell.edu, 607-255-2875)

Updated 8/2/2017