Sasha Hafner

From: Chantigny, Martin <Martin.Chantigny@AGR.GC.CA>
Sent: Monday, June 02, 2014 21:48
To: Sasha Hafner
Subject: RE: First data set

Hi Sasha, I am really sorry about not replying to you before.

This has been a terribly tough spring with so many new on-line tools to learn about for internal functioning at work (travelling, reporting, contracts, student agreements, etc…), that I had simply not a minute to do research at all in the last month.

Please see my replies to your questions in red below.

Only one small typo: on the Publications page, in the reference, the page numbers are 275-286. I will have a thorough look at the data file tomorrow.

Cheers.

Martin

De : Sasha Hafner [mailto:saha@kbm.sdu.dk]
Envoyé : 18 avril 2014 04:47
À : Chantigny, Martin
Objet : RE: First data set

Hi Martin,

I transferred the data from the May 2004 trial to the template. This looks like a really nice dataset! Can you take a look at the attached spreadsheet when you get a chance and see if you see anything that looks wrong? Also, a few questions:

1. I calculated the start and end dates and times based on column A in the "NH3-flux and cumul May 2004" sheet and an application time and an application date and time of 11 May 2004 10:30 based on line 6 in "weather May 2004". Does this seem right? Yes.
2. I assumed that the flux reported for each cumulative time was the average flux over the period that ended at the reported time since application. Correct? Say the first trap was deployed for 30 min, then the flux associated with that trap is the average flux over the first 30 mins; the next trap was also deployed for 30 min, the associated flux value is the average flux for that second 30 min period; so if you want to calculate the total amount of NH3 lost over the first 1 hour following applicaiton, you sum up the first two values, and so on. Hope this is clear.
3. I used the clay and silt values from the "study site" subsection of the paper for all plots. And for bulk density, I used the mean of the values in the soil worksheet for all plots. There are no measurements at the plot level, right? (Not a problem, to be clear.) Those measurements were made at the beginning of experiment on a composite sample of about 10 cores randomly collected across the study site, so we do not have the values at the plot level.
4. For the soil moisture and pH measurements that were repeated over time, I matched up the data from the soil worksheet with the volatilization observations based on the plot numbers and the dates. I know this isn't exact, because soil properties changed over a day, and also soil samples were not taken every day that volatilization was measured. Ultimately, I'm not sure what I'm going to do. I think probably we will try to use initial conditions when we build the model(s) because repeated measurements over time are not likely to be available to end users. But on the other hand, having plot- and period-specific values could be useful. Anyway, you don't have initial values for the 2004 data, right? Let me know if the current approach seems

wrong or if you have any suggestions. I went back to the original pH and moisture files for the 2004 trial, and unfortunately there was no Control treatment on that particular trial, so we do not know about the initial pH moisture conditions; but that information is available for the 2005 trials. Your approach seems correct. In most of our experiments we monitored soil conditions over the duration of volatilization measurement period using a set of plots adjacent to the tunnels area; we collect soil samples at increasing intervals. This you will see in the coming files on other experiments we conducted.

5. For weather data, I calculated the average values for each measurement period. Makes sense.
6. Do you have any wind/air velocity measurements? I know that the wind tunnels were left in place for the entire trial, so wind measured somewhere else doesn't mean much here. But you did measure air velocity within the wind tunnels, right? I could use that along with information on the measurement height. Actually, air velocity under the tunnels is set at a constant 1.3 m/s throughout.
7. Do you have any information on the location of weather measurements? Weather station is on the farm, about 200 m from the site where we conducted the trials.
8. To match up the soil data with the volatilization measurements, I needed plot numbers. I assumed that the order of replicates in the "NH3 flux. . ." sheet were sorted by plot number. With this approach, these are the assignments I ended up with (below). Is it correct? Actually, we use two sets of plots where we replicate the same experiment; one set is dedicated to the tunnels, whereas the second set receives the same treatments, is not covered with the tunnels, and is used for soil sampling. So, the plots for soil parameters are different from the plots for NH3 flux measurement. When it rains, we adjust soil moisture under the tunnels the day after with similar amount of water (applied with the type of manual applicator used for pesticides).

	treatment	rep	plot
1	untreated	1	1
6	untreated	2	8
11	untreated	3	14
3	digested	1	2
8	digested	2	6
13	digested	3	15
4	filtered	1	4
9	filtered	2	10
14	filtered	3	13
2	decanted	1	5
7	decanted	2	7
12	decanted	3	12
5	digested + floculated	1	3
10	digested + floculated	2	9
15	digested + floculated	3	11

I think these are the only questions I have for now. As you mentioned, it would be helpful if you can also add general information (although perhaps the "Experiments" worksheet is the only one missing data now). No rush though—I'm more interested in whether these data seem to be entered correctly before I add the other two data sets (and others). You can add and check this general information later on.
I will have a thorough look at the data tomorrow.

By the way, I was able to work with the soil and weather data using R, so it wasn't that much effort and also it will be easy to check the work (I've saved all intermediate steps). Manually lining things up might take a lot of effort, on the other hand. And the other data were very easy to copy and paste from the spreadsheet you sent.

Thanks for sharing the data!

Best regards,
Sasha

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From: Chantigny, Martin [mailto:Martin.Chantigny@AGR.GC.CA]
Sent: Thursday, April 10, 2014 17:49
To: Sasha Hafner
Subject: First data set

Hi Sasha, please find attached the first file with NH3 emissions – related paper attached for general information. As I said, I will complete general information in the template later in May. I will try to prepare another file soon.

Do not hesitate to ask for clarifications if needed.

Was nice talking to you today.
Cheers.

Martin Chantigny, *Ph.D.*
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