**From:** Tânia Cristina Gomes <tania.gomes@niva.no>   
**Sent:** torsdag 22. august 2019 12:56  
**To:** Dag Øystein Hjermann <Dag.Hjermann@niva.no>; Anders Ruus <anders.ruus@niva.no>  
**Cc:** Norman Whitaker Green <norman.green@niva.no>  
**Subject:** RE: Data, biological effect markers, MILKYS 2018

Hi Dag,

We normally have up to 6 replicate ALAD readings for each sample, so we normally calculate the standard deviation (st. dev) and coefficient of variation (CV) for each sample, which is the info I think you mention that are on P1, P2, etc, on the last table presented. Since we express the ALAD per protein concentration, we also calculate the standard deviation and CV for each protein concentration determined per sample, and that information is on the sheets named P1 protein, etc.

I guess it depends on how the uncertainties data needs to be presented, but in case the uncertainties need to be presented per site and not individual sample, it is just a matter of using the data on the FINAL values sheet to do the calculations.

Kind Regards

Tânia Gomes

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**From:** Dag Øystein Hjermann <[Dag.Hjermann@niva.no](mailto:Dag.Hjermann@niva.no)>   
**Sent:** torsdag 22. august 2019 12:19  
**To:** Tânia Cristina Gomes <[tania.gomes@niva.no](mailto:tania.gomes@niva.no)>; Anders Ruus <[anders.ruus@niva.no](mailto:anders.ruus@niva.no)>  
**Cc:** Norman Whitaker Green <[norman.green@niva.no](mailto:norman.green@niva.no)>  
**Subject:** RE: Data, biological effect markers, MILKYS 2018

Super!

Tania/Anders, is it hard to calculate uncertainty values (% or standard error) of ALAD?

When I look at the sheets named P1, P2, P3…. there seems to be some info about uncertainty there (but I am not completely sure what I am looking at!)

From this year, OSPAR requires analytical uncertainty, so that would be nice to include.

All the best,

Dag

**From:** Tânia Cristina Gomes <[tania.gomes@niva.no](mailto:tania.gomes@niva.no)>   
**Sent:** torsdag 22. august 2019 10:33  
**To:** Anders Ruus <[anders.ruus@niva.no](mailto:anders.ruus@niva.no)>; Lene Fredriksen <[Lene.Fredriksen@niva.no](mailto:Lene.Fredriksen@niva.no)>; Maria Thérése Hultman <[MariaTherese.Hultman@niva.no](mailto:MariaTherese.Hultman@niva.no)>; Katharina Bjarnar Løken <[Katharina.Loken@niva.no](mailto:Katharina.Loken@niva.no)>  
**Cc:** Dag Øystein Hjermann <[Dag.Hjermann@niva.no](mailto:Dag.Hjermann@niva.no)>; Norman Whitaker Green <[norman.green@niva.no](mailto:norman.green@niva.no)>  
**Subject:** RE: Data, biological effect markers, MILKYS 2018

Hi Anders,

The ALAD data is on K:\Avdeling\213 Økotoksikologi\Prosjekter\16330-MILKYS\2018\ALAD.

Cheers,

Tânia

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**From:** Anders Ruus <[anders.ruus@niva.no](mailto:anders.ruus@niva.no)>   
**Sent:** onsdag 21. august 2019 15:07  
**To:** Lene Fredriksen <[Lene.Fredriksen@niva.no](mailto:Lene.Fredriksen@niva.no)>; Maria Thérése Hultman <[MariaTherese.Hultman@niva.no](mailto:MariaTherese.Hultman@niva.no)>; Katharina Bjarnar Løken <[Katharina.Loken@niva.no](mailto:Katharina.Loken@niva.no)>; Tânia Cristina Gomes <[tania.gomes@niva.no](mailto:tania.gomes@niva.no)>  
**Cc:** Dag Øystein Hjermann <[Dag.Hjermann@niva.no](mailto:Dag.Hjermann@niva.no)>; Norman Whitaker Green <[norman.green@niva.no](mailto:norman.green@niva.no)>  
**Subject:** Data, biological effect markers, MILKYS 2018

Hi,

It is time to report the BEM-data for MILKYS (in fact overdue!).

Can you please provide me with the data from 2018? (EROD and microsomal protein, ALA-D and blood protein, PAH-bile-metabolites and absorbance at 380nm).

Thanks a lot!

/Anders

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