

UC 2.6: Pitstop+/Precision Mineral Supplementation

Memorandum

Partner meeting 21-22 January 2020 in Scotland

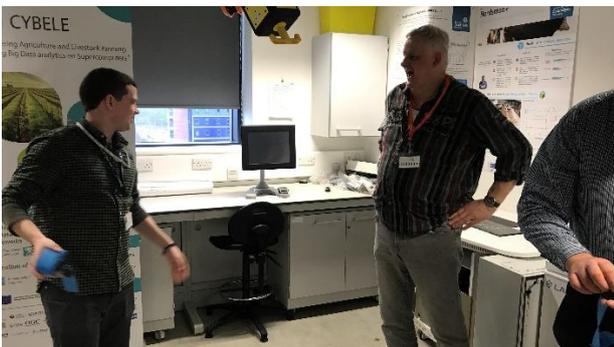
Participants:

- Raimonds Jakovickis
- Rimantas Stakauskas
- Klaus Hustede
- Gerrit Arendse
- Ole Lamp (via Skype)
- Craig Michie
- Andrew Hamilton
- Ivan Andonovich
- Henning Lyngsø Foged (memo)

Memorandum (with immediate to-do's marked with yellow)

The intention of the following is alone to memorise selected, important points from the presentation and discussion, whereas PowerPoint presentations and other material used is placed on Basecamp.

Lab visit



Andrew Hamilton presents the Silent Herdsman collars



Silent Herdsman collar – to the left is the weight to ensure it stays in the right position.

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Craig Michie with the PC that is being delivered to Heden Jersey, installed with the Silent Herdsman software for monitoring the cows.



Cardboard boxes with 80 collars for Heden Jersey, ready to be shipped off.

Craig Michie will ensure the Silent Herdsman system is sent to Heden Jersey as soon as possible, whereas it was already sent to Hof Arendse-Peters GbR. Craig will also inform his plans for visiting the farms to install the systems.

Project update

Gerrit Arendse:

- To ensure a good use, the Pitstop+ feeders should have a placement with a high cow-traffic, and this is the way they are placed at Hof Arendse-Peters GbR.
- We have not analysed data recently, but the clear impression is that the extra mineral supplementation has an effect, and that the test cows have improved clove health.
- He recommends MicroFeeder to offer Pitstop+ feeders with different configuration, such as extra devices to make the minerals flow to the dosing aggregates in case the minerals have a bad flowability.
- Henning said that MicroFeeder has bought some vibrators to test this on one or both German testbeds, but the first ones received were far too big, and we have ordered some smaller. However, it might in some cases be better that Pitstop+ alone is used with dedicated minerals that has a sufficiently good flowability, and those produced by Vilomix shows that this is possible.

Klaus Hustede:

- The conclusion was that Milkivit/Trouw Nutrition Germany for the next delivery will optimise this for starter cows, where a possible addition of Ca-containing material would not cause any nutritional worries. Starter cows are by far consuming more extra minerals during a three months period than CloseUp cows will do during three weeks. The change is supposed to give better flowing and more concentrated mineral feed supplements with a higher density.

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- German testbeds will give their dry cows something else in the Pitstop+ feeders, such as the existing mixture of the Milkinal Pitstop+ and stone meal.

Ole Lamp:

- The number of feedings at Hof Schmidt-Geel is very low, often the feeders are standing completely still for days.
- It was emphasized to Alexander Schmidt that the weekly service check is important to make the system working.
- The feed ration of Hof Schmidt-Geel was analysed, and shows
 - a general imbalance of minerals and vitamins,
 - an undersupply of all minerals and vitamins for starter cows, assuming these have a lower DM intake than corresponding to their milk yields, but
 - an oversupply of all minerals and vitamins for dry cows.
- Henning asked whether Alexander Schmidt then had made weekly checks. Ole responded that he didn't know, and it was decided that **Henning should check this** in the log file. This is now done, and Hof Schmidt-Geel did not make any weekly service checks, which entails the systems is set into calibration mode.

Rimantas Stakauskas:

- Rimantas suggested the next physical partner meeting to take place in Lithuania on 10-11 June.
- Ivan and Ole is not available at these dates, in Oles case from 8-19 June, and it was decided that **Rimantas will send out a Doodle with some other suggested dates.**

Craig Michie:

- Presentation of the Silent Herdsman app.
- The collars numbers must be connected to the cow numbers in the silent herdsman app, and **Henning will send updated lists of cows to Craig.**
- The collars shall first of all be used for test cows within the first 100 days form calving, secondarily for the control cows in the same period, and the farms can use the rest as they find it best.

Raimonds:

- Showed promising results from Vecauce and mentioned the technical problems at Vecauce and Rudeni.
- Henning said that Erik now have tested the returned slave units and they were all working well, but when he pours water on them, they do not read the electronic ear tag. Therefore, it seems they have dried up in the meantime, and the problem most likely being

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water/moisture. The reason we see the problems now is maybe because of a higher humidity in the wintertime. MicroFeeder will find a way to prepare the slave units, so these problems do not occur in the future. Henning said that MicroFeeder will send a new slave unit to Giraitė as soon as possible, and that he and Erik might visit Latvia next week to fix feeders at Vecauce and Rudeni.

Henning

- Pointed out that analysing data from 112 test cows and 117 control cows that have completed the first 100 days of their lactation at Padovinio supports indications from similar analyse of data from Heden Jersey and Vecauce, and points at a good effect on reproduction and health.

Dinner



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Visit to Parkend Farm



Scottish farming landscape. Slurry is being pumped to a broad-spreading irrigation device.



Brian Weatherup explains about his production: 200 Holstein cows + young stock on 100 ha land.



The farm has recently invested in 4 milking robots, and are very satisfied with that, and are also committed users of Silent Herdsman.



Gavin Dick presented the activities of AgriEpiCentre, which among other has a UK-wide network of 24 testbeds, including the Parkend Farm, for innovative technology.

Presentation of draft article

Ole Lamp presented a draft article on “Precision mineral supplementation and EU feeding regulations”.

The conclusion is that when using precision mineral supplementation, there can be a risk for exceeding the legal limits for the amount of Vitamin A and Selenium in dairy cows feed ration in case they already give their cows much more than prescribed by the norms. There is also a theoretical risk that farms may be fined in connection with cross compliance checks if they exceed these limits.

On the other hand, giving 100 grams of the Vilomix produced Pitstop+ supplement is alone representing the legally maximal amount in 2 kg DM88.

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There is a contradiction in the fact that norms nutritionally are determined additively (needs for maintenance + needs for gain + needs for milk production + need for foetus) while they in case of TMR feeding and legislation are described as DM88 content. This is causing the mentioned risk, that probably is unintended.

Ole and Henning will finalise the article and publish it, at least at ResearchGate.

Plans for analysing trial results

Henning introduced the subject and said that

- we may need to analyse testbeds differently, as we cannot yet consider test periods to have begun at Hof Schmidt-Geel, Rudeni and Giraite, and on Vecauce, the control cows have also had access to extra mineral supplements for longer periods;
- he has himself done some preliminary and quick analyses to get some early indications of the effect of extra mineral feed supplementation, but it is important for the trustworthiness of the conclusions that Futterkamp will take responsibility for the overall analysis related to productivity, and the Lithuanian University of Health will do the same concerning health.

Ole Lamp and Rimantas Stakauskas agreed to take this responsibility.

Ole Lamp added that the way Futterkamp typically would analyse productivity results would include the calculation of yield prognoses based on the first 4 milk recording results of the cows.

During the meeting, Ole Lamp send a Skype message saying that datasets from the testbeds should be aggregated before a final analysis, and thereafter we should finally decide, how to analyse it.

Requirements for making the project successful and accepted by the market

For activities in 2020, Henning said that it is especially important that Zemnieku Saeima, LUHS and Futterkamp produce the following:

- Sends translated texts for videos to Henning so we can put Latvian and Lithuanian subtitles on the vide from Heden Jersey – this was already done by Ole in October.
- Produce an animation in DE, LV and LT language to present Pitstop+ Manager. This is done by use of PowerPoint. Henning will send a stepwise instruction, including a proposed text to be read during the presentation latest Monday 27 January. Before the actual recording, based on a test farm with fictive data, Henning need to know when the recording will happen, so that he can prepare the dataset behind.
- As many SoMe messages (Twitter, LinkedIN and Facebook) as possible, with @IoF2020 and #precisionmineralsupplementation being part of the text.
- At least 2 popular articles / news notifications in farmer magazines, own newsletters or alike.

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- The physical partner meeting in Germany by end of the project (e.g. November) is also a final meeting, and a stakeholder meeting, and there should preferably be 50 persons attending. Stakeholder meetings shall also be held in Latvia and Lithuania by end of 2020.

For market acceptance, Craig said that the most important thing is to convince about the profitability of the concept. Henning added that he believes it is important, and also possible to make the system working more stable and with a higher technical robustness than we have seen so far. Finally, it may be an important goal, as pointed out by Gerrit, that the system can be offered with different configuration (reading of transponders/electronic ear tags, vibrators).

Handling of Task 6 (optimising algorithms etc)

Hennings ideas for handling the task was principally agreed by Craig and Andrew, whereas it may be done a bit different in practice.

Craig and Andrew said that they have the capacity to analyse data from both Silent Herdsman and Pitstop+, and Andrew asked if Henning could send a sample of a Pitstop+ dataset for starting to set up a model for data analysis. A dataset is here -

https://www.researchgate.net/publication/335474685_records_-_Dairy_cow_behaviour_in_relation_to_precision_mineral_supplementation.