

Støttet af:

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for Udvikling af Landdistrikterne

LDP 2020



Se EU-Kommissionen, Den Europæiske Landbrugsfond for Udvikling af Landdistrikterne

Meeting minutes - DGT workshop

Date **05.12.2017**

Place **Koldkærgård konferencecenter**

Participants **Sophie Nawara (SN), Søren Husted (SHU), Gitte Rubæk (GHR), Julie Christensen (JC), Karin Peters (KP), Torkild Birkmose (TSB), Leif Knudsen (LEK), Camilla Lemming (CAL).**

Presentations:

(All power point shows are attached to the same e-mail as the minutes)

Leif Knudsen:

Introduction

Julie Christensen:

Can the DGT and the Olsen P soil analyses predict phosphorus fertilization requirements on Danish soils?

Sophie Nawara

*A comparison of soil tests for the quantification of plant available phosphorus
-on European long-term field trials
-in a soil P depletion scenario
(Parts of the presentation should be treated confidentially since results are not published)*

Søren Husted

*The effects of temporal phosphorus deficiency in barley
- perspectives for plant and soil analysis*

Camilla Lemming

Australian experiences with commercial use of DGT for soil analyses

Discussion:

What can we extract from the analyses of the Danish trials?

- In total 33 trials. 7 trials with yield responses.

	Failed to predict response (yield response despite value > P-crit despite) (95 % YR)	Predicted a response that was not there (value < than P-crit, but no yield response) (95 %YR)
Olsen P	5 out of 7 responsive soils	2 trials
DGT	1 out of 7 responsive soils	9 trials (~5 of them with YR < 100%)

SHU: The “false positives” are critical: can be expensive for the farmers (and for the environment).

TSB: Can we add information to the 9 “false positives” to characterize them?

GHR: Difficult. See e.g. JB-numbers marked on the single trials on slide 20.

On which soils do the soil tests fail?

- There seems to be several coarse sanded soils among these soils.
- May be related to the fact that coarse sanded soils are overrepresented in the trials.
- JC/SHU: This may be because these soils more easily dry out and we extract at much higher humidity than are normally present in these soils. Also the DGT is applied at high humidity.

Critical DGT-value:

- JC used DGT-P = 65 (similar to Australian recommendations for marginal responses)
- SN presented a critical value of 33. Based on different crops (incl. wheat, barley, maize, sugar beet etc.)
- SHU suggests that 50 could be a more suitable threshold. See JC slide 19. He thinks that incorporating results on Norwegian, Swedish and Finnish soils will show a limit around 50. Could be tested.
- GHR: we can draw a temporary line.

Soil analyses vs. Plant analyses/fluorescence measurements (P-tester)

- SHU: Soil tests can never include the influence of factors such as temperature and humidity, root development and architecture and rhizosphere effects.
- SHU: Soils tests and plant tests should be used in combination: soil analysis as a risk indicator and to determine development over time. Plant tests to verify.

Other points to consider:

- Large field variation (as shown in the presentation by LEK)
- GHR: how many do not use P fertilizer? 0P is our reference scenario. Probably relatively few.
- The labs will ask how many samples that are expected to be analyzed with DGT.
- SHU: with the DGT we can integrate more analyses (also Zn, Cu etc.)

Conclusions and decisions:

It was decided to recommend an implementation of DGT method, so the method can be offered as a commercial analysis to farmers as a supplement to Olsen-P.

Next steps:

- Invite the laboratories to find out whether and how they can implement the method.

Open questions:

To whom should the DGT-analysis be recommended?

- Crop producers.
- But based on present knowledge, it is difficult to point out exactly for which fields it should be recommended to supplement with an DGT analysis. LEK believes this could be coarse sanded soils; however, this is still an open question.
- Certain crops? LEK suggests that vegetable producers, for whom the new P regulation can be a challenge, may be interested. TSB: They will apply P even at little 'risk'.

What will be the price for an analysis?

- Whether the method should actually be recommended may depend on the price of the analysis. Through discussions with laboratories, we may get closer to a price estimate.

Could other (less costly) methods do the same as the DGT?

- In the Danish trials (JC presentation), we have only tested Olsen-P and DGT.
- In the international trials (SN presentation), DGT did not appear much better than Olsen-P/Other tests.

Other:

- SHU, JC and GHR are planning to publish the results of the analyses of the Danish field trials.