Grass Field Conference 2017 – summary of proceedings

A group of around 50 scientists and agricultural professionals gathered in Jutland for the DLF Grass Field Conference 2017. The event, which took place on 25th October, was the third of its kind. This report summarises the topics discussed.

Engaging speakers and enthusiastic audience

The third DLF Grass Field Conference attracted a set of lively and inspiring speakers, and an audience that was fully engaged in the topics. The event was thoughtful and open-minded, providing plenty of opportunity for everyone to air their opinions.

DLF Denmark ran its first Grass Field Conference in 2013. The idea was to hold a forum once every two years for the scientific discussion of grass development and the many uses of grass, clover, alfalfa, beet and other crops within the DLF portfolio. The scientific approach is helpful because it offers a format within which the participating organisations can share knowledge and experience in relation to farming and science.

This year's event attracted speakers from a variety of backgrounds: agricultural and engineering universities, and independent agricultural advisory services (SEGES), as well as the technical team at DLF. The theme for 2017 was clover and protein in the field. The organisers split the theme into four parts, each of which is described below.

Protein in the field and clover as a source of protein

Erik Fog of SEGES provided an insight into future opportunities for extracting protein from clover grass. He also gave his audience an overview of current projects and their latest results. They learned that it might soon be possible to feed poultry and pigs from the protein extracts from grass. The efficiency of protein extraction is currently 35% – and improving.

For those who worry that the effect of phytoestrogens could be potential problem in protein extraction, Martin Weisbjerg of AU Foulum had some good news. He told the conference that appropriate management could provide a way to reduce or control the concentration of phytoestrogens. Martin and DLF have undertaken a joint study of phytoestrogens in clover. Their study provided insights into the best clover varieties to choose and the best time to cut them.

The value of a clover grass field and grazing

The value of a grass field is not limited to the value of the grass used for forage; it should take account of the field's effect on the next crop. Clover grass, for example, increases the carbon and nitrogen content of the soil; it lays down nutrients for use by the following crop. Jørgen Eriksen of AU Foulum helped to explain the long-term benefits of a clover grass field. He said that, after ploughing and decomposition, a 4 to 5-year-old grass field releases almost enough nitrogen and carbon to support a following crop. The crop would need only superficial fertilisation to produce an acceptable yield.

This year's international guest speaker was Ralf Loges of Kiel University. He described what happened when researchers applied the Irish/New Zealand grazing system to a site in northern Germany. The research, which was undertaken at the Lindhof trial station, looked at ways to cut the cost of milk production. Ralf screened a range of grass varieties to see which produced the best grazing results according to the Irish and New Zealand system. During the screening process – and with good management – it proved possible to control weeds. Weeds are typically a problem in organic production after several years of cultivation.

The topic of screening grasses for grazing continued with DLF's Gurli Klitgaard. In 2016 Gurli's team began a comprehensive grazing test involving more than 340 varieties. The experiment, which took place at an organic milk producer in Jutland, will generate data for several years and hopefully tell us which grasses cows prefer. The first results are already in, but we need more data and analysis before we can drawn any conclusions. It will be particularly interesting to see what we can learn about winter and wear-tolerance, disease-resistance, and the changing proportions of clover and weed.

Digital monitoring and analysis of clover percentages

Søren Skovsen from Aarhus University showed us something different: the futuristic, digital and technical side to grass and clover growing. Søren, who has an engineering background, gave his audience a fresh perspective on the analysis of a grass field. He talked about methods for analysing the percentage of clover in a field. That knowledge helps growers determine the content of protein in the field (and its digestibility), and provides them with opportunities for adjusting their fertiliser use.

Torben Frandsen from the independent advisory service, SEGES, elaborated on the topic of digitalisation in farming. He focused on the percentage of clover in a field and how that percentage fluctuates throughout a season – mostly as a result of fertilisation. He told his

audience that increasing levels of fertilisation produce a significant decrease in crude protein and in the percentage of legumes, both of which affect milk yield.

SEGES is planning a new project to study the composition of Danish grass-seed mixtures. During the trial, which will take place at five locations in Denmark, the team will analyse each cut according to its botanical composition, visual appearance and nutritive value.

Breeding for the future

Christian Jensen from DLF's main breeding station told the conference how DLF is breeding new varieties of grass. He spoke about the challenges of breeding grasses for better disease-resistance, tolerance to drought and wetness, higher digestibility, increased protein content, and higher yield.

Christian's talk about genomic wide selection was well-received. He explained how genome screening helps to predict the outcome of breeding and thereby cut the number of years it takes to breed for a particular trait. DLF's participation in RADIMAX was another popular topic. RADIMAX helps plant breeders understand grasses and root development during artificial growing conditions.

Grass Field Conference 2019

Jørn Kristensen, Sales Manager for the Danish division of DLF, wrapped up the day with a short speech about grass, clover and alfalfa. He explained that developments in plant-breeding techniques benefitted the wider agricultural sector. For example, DLF's acquisition of breeding programmes for sugar, beet, and alfalfa, were creating a comprehensive agricultural portfolio.

Jørn said that conference turnout proved how important it was to run an event with grass as its theme. With so much enthusiasm in evidence, DLF will plan another Grass Field Conference 2019.