

Grass growth of farmer Breeuwsma disappointing

Discussion about degradability film

Jan and Karst Breeuwsma from Aldeboarn were satisfied growing maize under film for three years. After this period they decided to sow grass on the fields used for maize under film before. They were very surprised to see that the grass growth on these fields did not perform well. They point to the film, which until today is still present in the soil, as a possible cause. The producer denies this.

Growing maize on heavy clay soils with 80 percent lutum has always been a dilemma for Karst and father Jan Breeuwsma. The maize grew well, but problems often occurred during harvest time. 'Especially in wet circumstances during the harvest period it is difficult to contain damage to the structure of the soil', says Karst. 'If we damage the soil structure here, it takes years to recover'. Also periods of drought during sowing causes problems. Karst: 'In case of drought the seeds lay in between clods causing the seeds not to germinate'.

Therefore, when in 2009 trials were started with growing maize under film, they wanted to participate. 'This system seemed a good solution to the germinating problems in the spring and the problems during harvesting in the autumn. We could compensate the extra costs by expected higher yields'.

Earlier maturing

Three years in a row they grew maize under film. Three hectares in the first year and after that ten hectares for two years. The findings were mainly positive. 'The seed germinated much better due to effect of the temperature and humidity under film on the soil. Besides that we were able to harvest the maize two weeks earlier than normal', Karst admits. Higher yields were not directly achieved. In a favorable growing season maize under film yielded around 35 to 40 tons per hectare, comparable to maize without film. During a less favorable growing season maize under film did perform better. 'The system has to be regarded as an insurance', he says. Regardless of the positive findings they decided to stop growing maize under film after three years. The family arranged machinery in order to grow grass and has to outsource all the activities regarding the growth of maize to the contractor. 'The costs for an extra hectare of grass are much lower than an extra hectare of maize. Silage maize is great product and brings stability in the stomach of a cow, but cows are able to function without', according to Karst.

The fields where maize under film had been grown, were sown with grass seed in May 2012 with the expectation that the young grass would deliver high yields. The opposite however became true. 'The yields were less higher than yields from other fields and the grass did not obtain enough colour', Karst explains. The first thought was that after three years of maize the organic matter content in the soil had dropped considerably causing a lower nitrogen supply to the plants. But then they took a shovel and discovered pieces of film still present in the soil.

'We were not expecting this. We have been told that the film degrades and disappears. The pieces of film we dug up were not degraded nor did they disappear. The root system of the grass doesn't grow through it which is also pointed out by the fact that the roots don't grow downwards enough.

Soil structure

Hein-Willem Leeraar, representative of film producer Samco, and contractor Heeringa from Tersoal, who have been involved in growing maize under film from the beginning point to another cause. Heeringa: `I visited the fields and I can only conclude that the presence of the film is not huge and that this cannot be the cause for the disappointing grass yields`. Samco points out that the type of film used at Breeuwsma – Samco Green – degrades 85 to 90 percent in the first growing season. De last 10 to 15 percent degrades in the two following years. On the 22nd of October 2014, two and half years after growing maize under film, this seems not to be the case at Breeuwsma. Veldpost editor Sjouke Jacobsen saw with his own eyes that pieces of film are still present in the soil and that they are not degrading.

Heeringa points out that the grass growth is disappointing due to a bad soil structure. `Due to cultivation before and during the growth of maize different layers of this heavy clay soil have been mixed with each other causing a higher presence of clay in some areas of the field. In these areas not enough oxygen reaches deeper layers of the soil causing the root system to not further grow downwards. The contractor admits that every now and then he encounters some pieces of film in the soil, but this has never caused any problems for cultivating the soil. The plough or cultivator did not experience huge amounts of film in the soil. `Breeuwsma is the first one mentioning this problem. In the meantime we have multiple years of experience including enough farmers sowing grass after growing maize under film. We did not receive any comparable complaints`, says Heeringa.

Dispute

Not enough oxygen, due to a too heavy clay soil or sober soil structure, could also be causing the film to not degrade as good as expected. To find out the exact cause Leeraar wanted to conduct a research into the disappointing grass yields involving different researchers, but this was opposed by Breeuwsma on the very last moment. `It became clear to me that 8 people had been invited. We felt intimidated by this number of people. If Leeraar would have come with, for example, only Bussink, we would have agreed`, Breeuwsma says.

Leeraar is disappointed that Breeuwsma opposed the visit with various researchers, because he wanted to to know the exact cause. `If indeed the soil would be full of film, then we would have encountered an extraordinary situation. Under normal circumstances film is 100 percent degradable. If we discover that the film, under certain circumstances, does not degrade fast enough, we might have to change the film regarding the natural degradation. It seems that Breeuwsma is an exception amongst many. We don't have any leads regarding problems with degradability in other places.

Different possible causes

Samco and the editorial office of the Veldpost have asked soil specialist Wim Bussink, working for the NMI, to analyse the situation regarding Breeuwsma. Bussink was not granted permission to explore the situation on the field itself and has to base his analysis on an analysis of the soil structure. `The disappointing degradation of the film is probably caused by the type of soil. Heavy clay soils don't allow oxygen to move through the soil. It is not probable that the present film in the soil is the cause of the disappointing grass growth. Fertilization is a possible cause: the fertilization of nitrogen, sulphur and phosphate has to be well executed. Also the structure of the soil can be the cause. A good cultivation of the soil before sowing grass is necessary, especially regarding clay soils. Summarized: there are more possible causes of the problem and besides that: insufficient delivery of nitrogen combined with soil structure damage can make the problem even bigger.

Under picture:

On the 22nd of October 2014, Breeuwsma digs with his shovel, in the company of Velpost photographer and editor Sjouke Jacobsen, and finds pieces of film.