

Experiences of seaweed as substrate for anaerobic digestion in Trelleborg 2016-2017



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Background

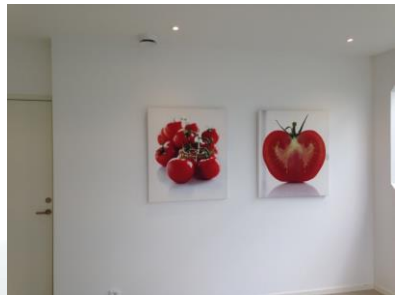
The results from the project that was running during 2012-2014 showed that :

- the process sometimes was unstable caused by sulfides
- that the sampling of algae on the beach was irregular
- the content of sand was high, which caused mechanical problems in the plant

The biogas project 2016-2017

1. How to get the biogas process stable without chemicals?
2. Could the digestate be used as a fertilizer in farmer land?
3. How to find the most effective way to collect algae from the coast?

1. Stability of the biogas process



Biogas substrates - codigestion



Biogas plant in Smyge, Trelleborg

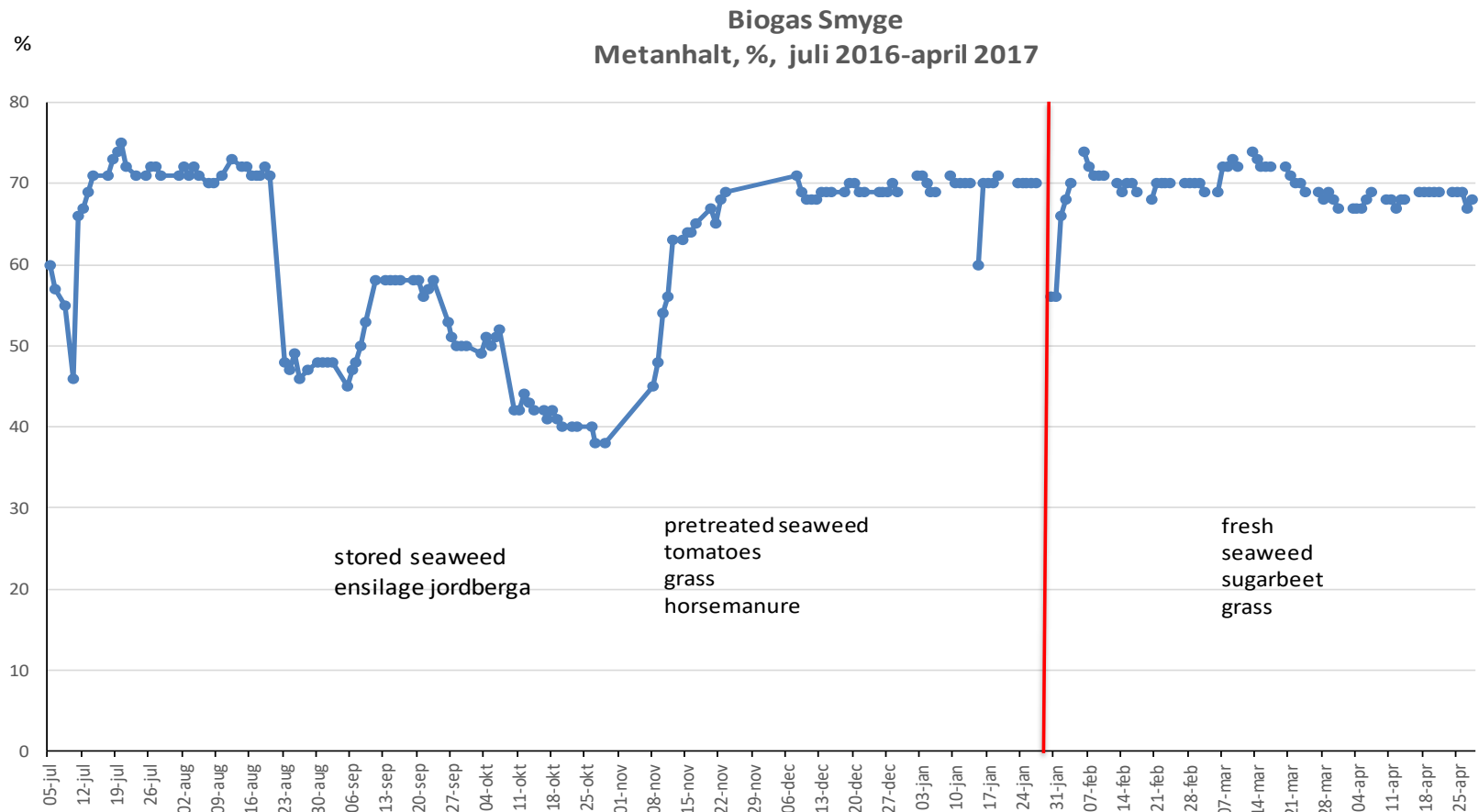


Biogas plant in Smyge, Trelleborg

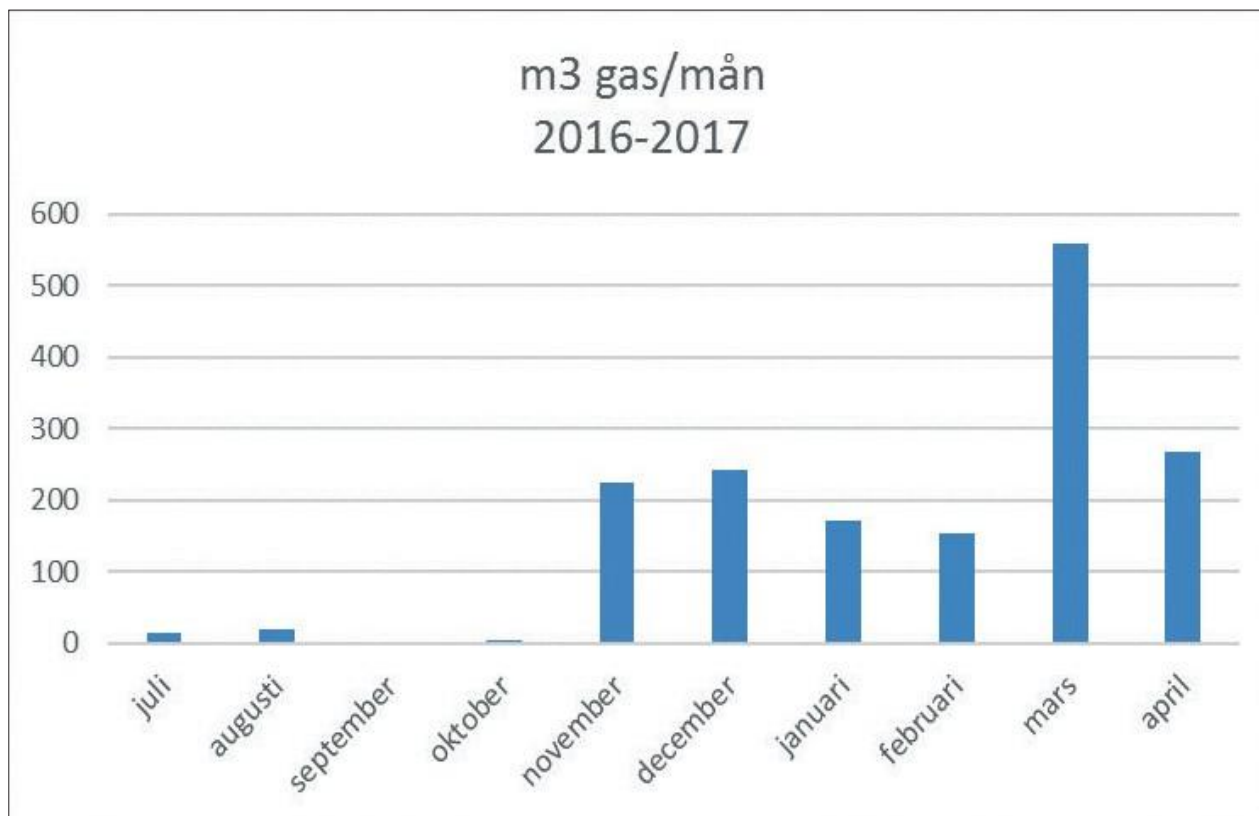


Biogasplant Smyge in operation 2016-2017

Methane %



Biogas production 2016-2017



2 Digestate - Fertilizer



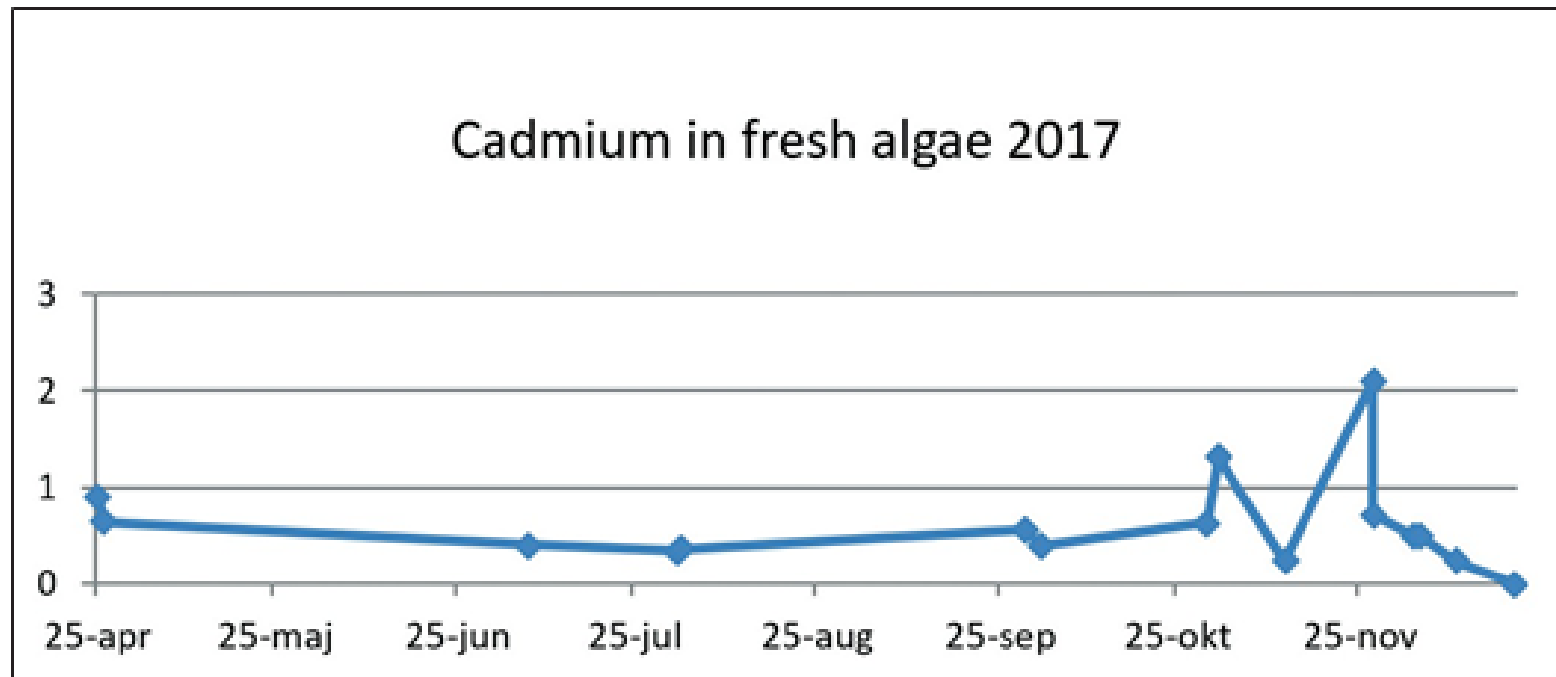
Evacuation of digestate



Delivered digestate to farmer land

Batch	m3/TS	Nitrogen N kg	Potassium K kg	Phos- phoros P kg	Kadmium Cd mg/kg TS	Cd/P mgCd/kg P
Digestate 1 1610	35/14,0	220	39	5	1,7	1666
Digestate2 1612/1701	105/20,9	1317	1646	329	0,2	13,3
Digestate 3 1706	110/ 50,6	837	483	873	0,5	31,9

Cadmium content in fresh seaweed mg/kg TS



3 Collecting/pretreatment of seaweed



Truxor in demonstration without seaweed !



Conclusions

- Process stability is reached by codigestion
- Digestate could be used as a fertiliser
- Collection of seaweed without sand is possible but could be developed and more efficient

Seaweed in the future ?

