

# Pil som grisefoder

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Billeder: Kristine V. Riis, Maria Eskildsen, Søren U. Larsen, Rikke Thomsen

# PIL SOM FODER

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- Velkendt foder-supplement til drøvtyggere E.g. Mahieu et al.. 2021; Vandermeulen et al.. 2018
- Højt mineral og protein-indhold E.g. Smith et al.. 2014; Luske et al.. 2017; Mahieu et al.. 2021
- Bioaktive stoffer E.g. Kemp et al., 2003

# PIL SOM GRISE-FODER?

- Grise æder gerne friske skud og blade, men kort 'brugsperiode'
- Er det muligt at ensilere grøn pile-biomasse i en 'tilstrækkelig' høj kvalitet?
- Er ensileret grøn pile-biomasse et velegnet grovfoder-supplement til drægtige søer?



<https://icrofs.dk/forskning/dansk-forskning/organic-rdd-6/outfit>

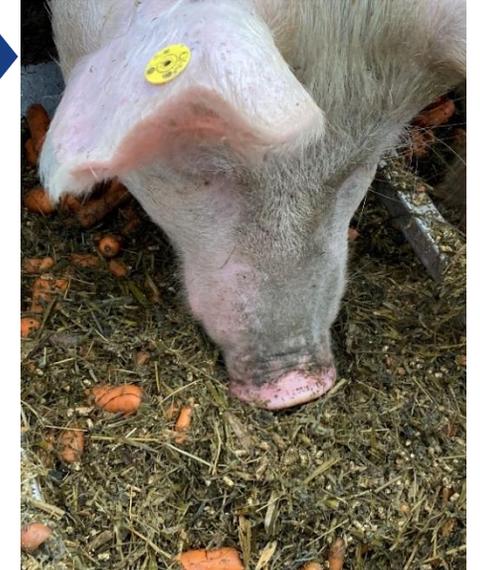


<https://projects.au.dk/mixed>



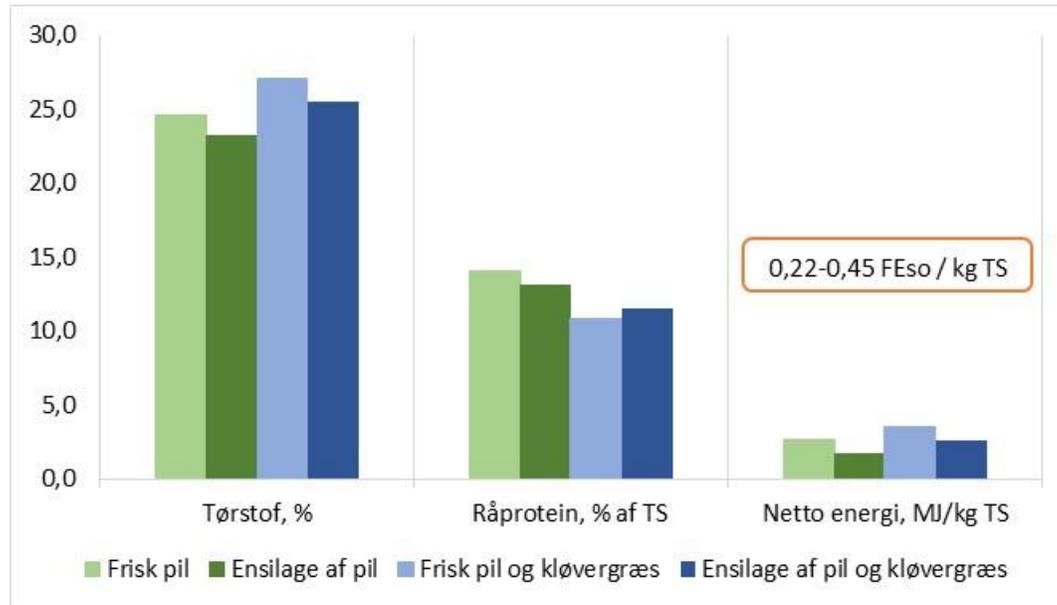
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# FREMANGSMÅDE PRODUKTION AF PILEENSILAGE



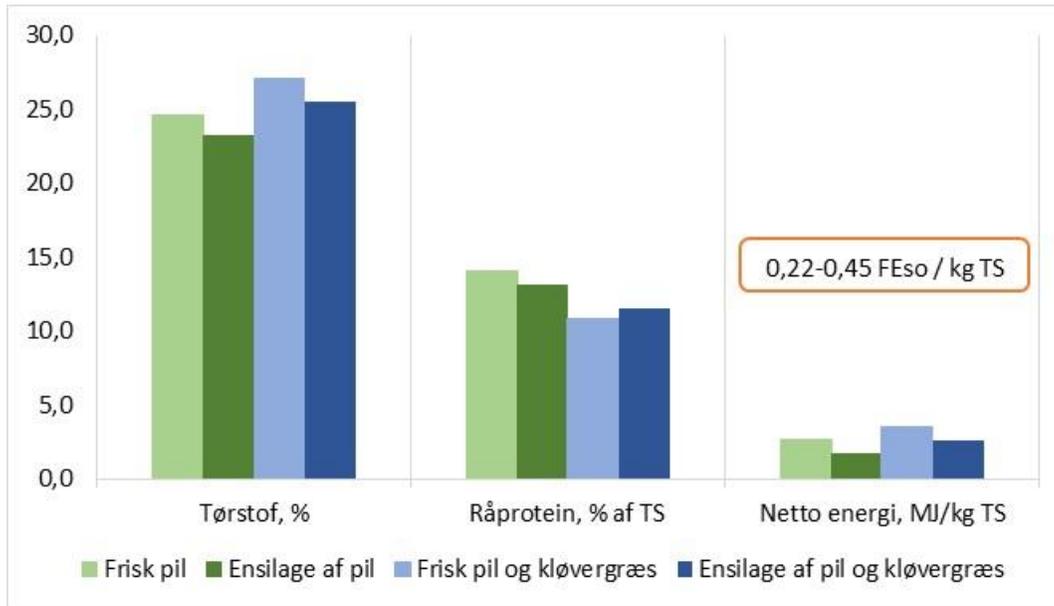
Video, produktion af pileensilage (CFF): <https://www.frilandsdyr.dk/2021/01/22/outfit-outdoor-sows-in-novel-concepts-to-benefit-the-environment/>

# FODERVÆRDI



Lysin, g/kg TS: 9,2 (pil) og 5,3 (pil og græs)

# FODERVÆRDI



Lysin, g/kg TS: 9,2 (pil) og 5,3 (pil og græs)



## Article Ensiling of Willow and Poplar Biomass Is Improved by Ensiling Additives

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**Abstract:** Biomass from willow and poplar harvested for feed during the growing season may be preserved by ensiling; however, little research has focused on ensiling of these biomasses. This study focuses on the use of ensiling additives to reduce the pH to around 4.0 to secure stable storage. Lab-scale ensiling experiments were conducted with different willow and poplar clones, shoot ages, and harvest times (June or September). Ensiling without additives often resulted in limited pH reduction. The pH could be reduced in the biomass of both species by adding formic acid, and the required dose to reduce the pH to 4.0 (buffering capacity, BC) ranged significantly between biomass types but was in the range of 2–5 kg formic acid (78%) per ton fresh weight. BC decreased with increasing dry matter (DM) content and decreasing crude protein content. The pH could also be reduced during ensiling by applying molasses and/or lactic acid bacteria, although not sufficiently in poplar. Willow biomass was ensiled effectively at the pilot scale with less than 7% DM loss by adding formic acid or by mixing with grass biomass. Comparable pH results were obtained at the lab scale and pilot scale. The study demonstrates how willow and poplar can be ensiled; however, more research is needed on quality changes during ensiling.

**Keywords:** silage; lactic acid bacteria; molasses; formic acid; buffering capacity; pH; Salix; Populus; storage loss



Citation: Larsen, S.U.; Hestbjerg, H.;

# FØRSTE UDFODRING!



# PILOT TEST

- ❑ 32 drægtige søer
- ❑ To behandlinger: Pile- eller helsæds-ensilage
- ❑ Start på dag 5 i drægtighed
- ❑ Tildeling i 78-80 dage

**Video, fodring med pileensilage (ICOEL):**

[https://www.youtube.com/watch?v=iyCh3ODL3-E&ab\\_channel=Innovationscenterfor%C3%98kologiskLandbrug](https://www.youtube.com/watch?v=iyCh3ODL3-E&ab_channel=Innovationscenterfor%C3%98kologiskLandbrug)



# ENSILERER OGSÅ...



<https://icrofs.dk/forskning/dansk-forskning/organic-rdd-6/outfit>

Hassel



Kastanje



Lind



Mirabelle



Billeder: Rikke Thomsen, CFF

# OPSUMMERING, PILEENSILAGE

- Høj palatabilitet, dagligt indtag ca. 2,5 kg/so
- OK protein-indhold (ca. 13 % af TS)
- Højt lysin-indhold (ca. 9 g/kg TS) – kan dække knap halvdelen af behov ved indtag af 2,5 kg dagligt
- Lavt energi-indhold (0,2-0,5 FEso/kg TS)
- Forskning fremadrettet:
  - Validering af foderværdi, dagligt indtag og effekter
  - Effekt af ensilering på bioaktive stoffer?
  - Kan de bioaktive stoffer overføres via mælk til pattegrise, og dermed forbedre pattegrisenes sundhed?



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<https://re-livestock.eu/>

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 862357



# OPSUMMERING, PILEENSILAGE

- Høj palatabilitet, dagligt indtag ca. 2,5 kg/so
- OK protein-indhold (ca. 13 % af TS)
- Højt lysin-indhold (ca. 9 g/kg TS) – kan dekke halvdelen af behovet for lysin i grovfoder
- Hvad skal pileensilagen kunne levere for at det bliver attraktivt at dyrke og anvende som grovfoder?
- Forskning fremadrettet:
  - Validering af foderværdi, dagligt indtag og effekter
  - Effekt af ensilering på bioaktive stoffer?
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