

Ta vare på proteinet

med riktig fortørring, ensilering og lagring

v/ Jan Håvard Kingsrød



Felleskjøpet



Agenda



1. Protein i grovfor
2. Fortørking
3. Ensilering
4. Lagring

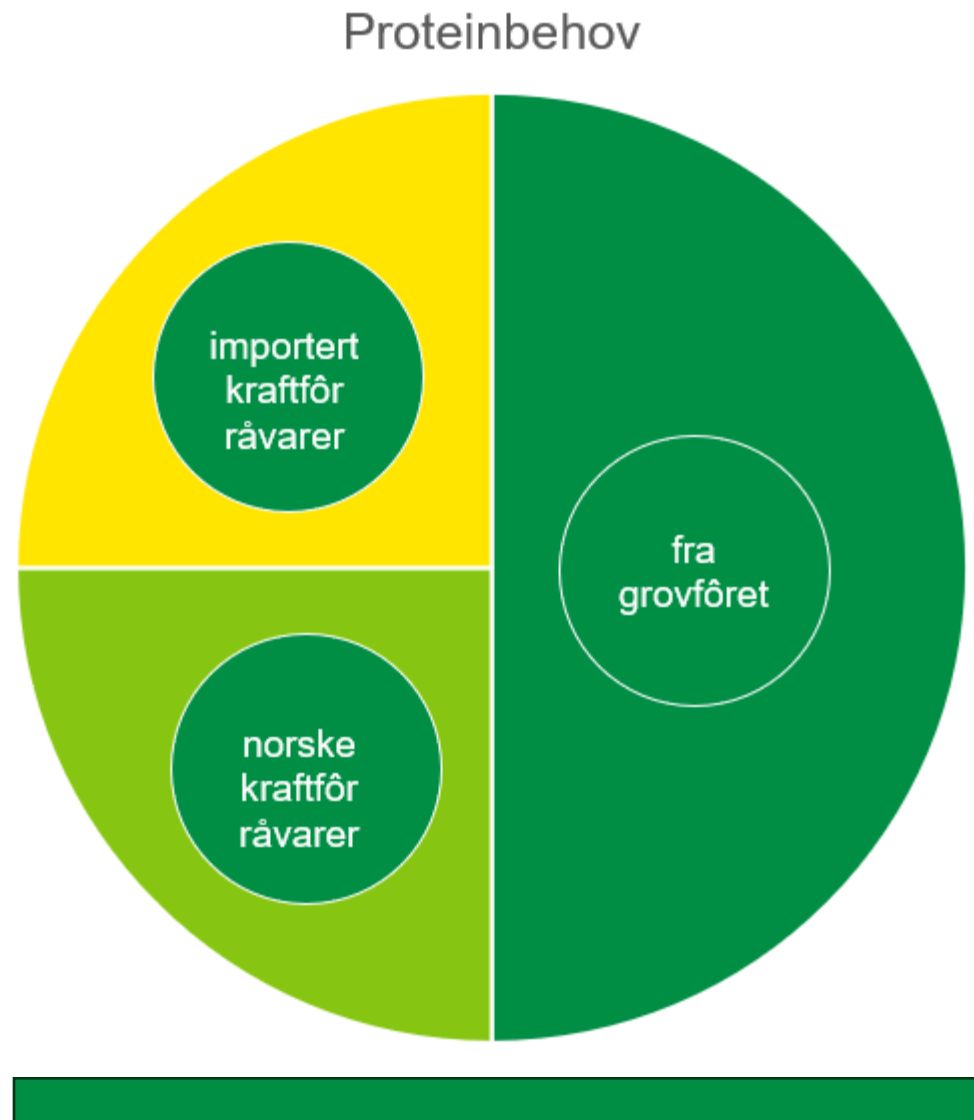


Felleskjøpet

Protein i grovfôr



- Grovfôret er vår viktigste proteinkilde
- Grovfôret er svakt på AAT
- Grovfôret har ett høyere råprotein nivå (PBV)



Proteinomsetningen i vomma

- Noe protein går rett til tarm som AAT
- For å danne en aminosyre trengs det karbohydrater og nitrogen
- Vommikrobene bygger sammen protein som er nedbrutt i ensileringsprosessen til mikrobeprotein og kan dekke 70-90 % av behovet

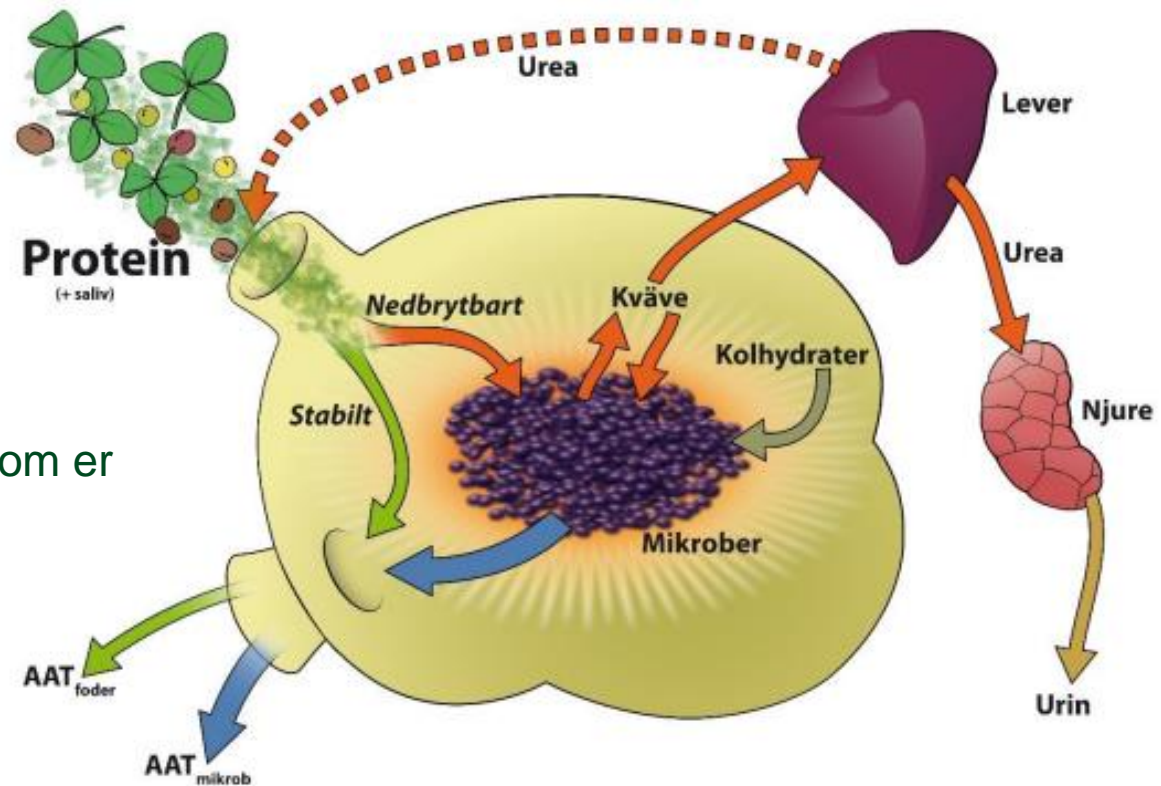


Bild: Fredrik Stendahl ©

Råprotein og sukker



RESULT of ANALYSIS

number of test report: 1776779-20231027-143723

order data (customer information)

sample type:	grass silage	trade name:	no data
sample ID:	2	harvest year:	2023
sampling date:	no data	storage place:	Saarpsborg, Norway
sampler:	Jan Havard Kingsrød	silage additives:	no data

sensorial evaluation (LKS FMUAA 101:2023-01 not accredited)

specific color,	characteristic smell,
free of butyric acid,	acetic acid slightly perceptible,
visibly free of mould,	proportion of herbs: low,

analytical results	unit	in kg		reference value
		feedstuff	dry matter	
dry matter	g	479	1000	280 - 350
crude ash	g	32	66	< 100
crude protein (CP)	g	93	194	130 - 170
crude protein (CP) + NH ₃ -N*	g	94	197	
crude fibre	g	121	253	240 - 280
ether extract	g	16	33	25 - 40
sugar	g	65	135	50 - 120
fructans	g	11	22	
total water-soluble carbohydrates	g	75	157	

RESULT of ANALYSIS

number of test report: 1776780-20231027-143853

order data (customer information)

sample type:	grass silage	trade name:	no data
sample ID:	3	harvest year:	2023
sampling date:	no data	storage place:	Saarpsborg, Norway
sampler:	Jan Havard Kingsrød	silage additives:	no data

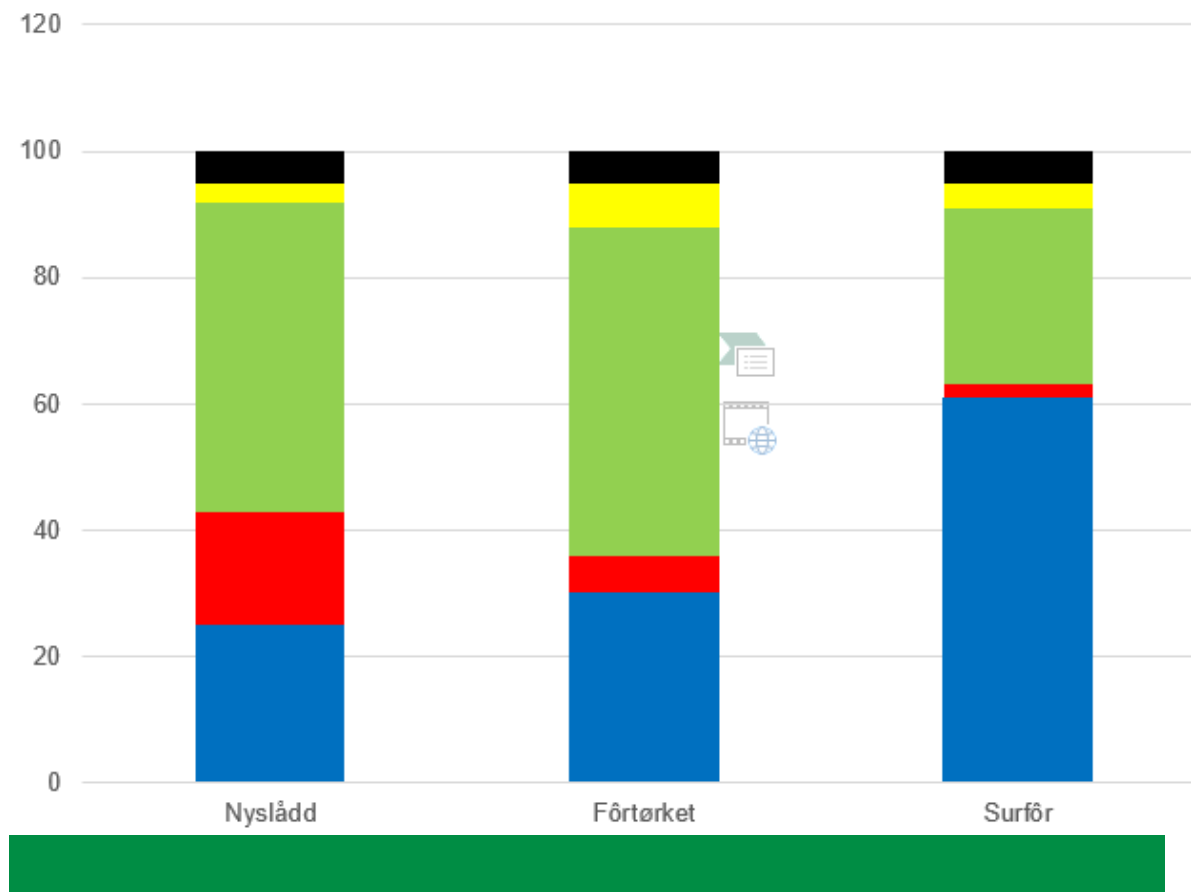
sensorial evaluation (LKS FMUAA 101:2023-01 not accredited)

specific color,	characteristic smell,
free of butyric acid,	acetic acid slightly perceptible,
visibly free of mould,	proportion of herbs: low,

analytical results	unit	in kg		reference value
		feedstuff	dry matter	
dry matter	g	522	1000	280 - 350
crude ash	g	38	72	< 100
crude protein (CP)	g	58	110	130 - 170
crude protein (CP) + NH ₃ -N*	g	58	112	
crude fibre	g	143	274	240 - 280
ether extract	g	13	25	25 - 40
sugar	g	83	158	50 - 120
fructans	g	9	18	
total water-soluble carbohydrates	g	92	176	

Fôrtørking

- Under fortørking kan store deler av proteinet brytes ned til ikke-protein
- Rask fortørking vil redusere nedbrytingen av proteinet

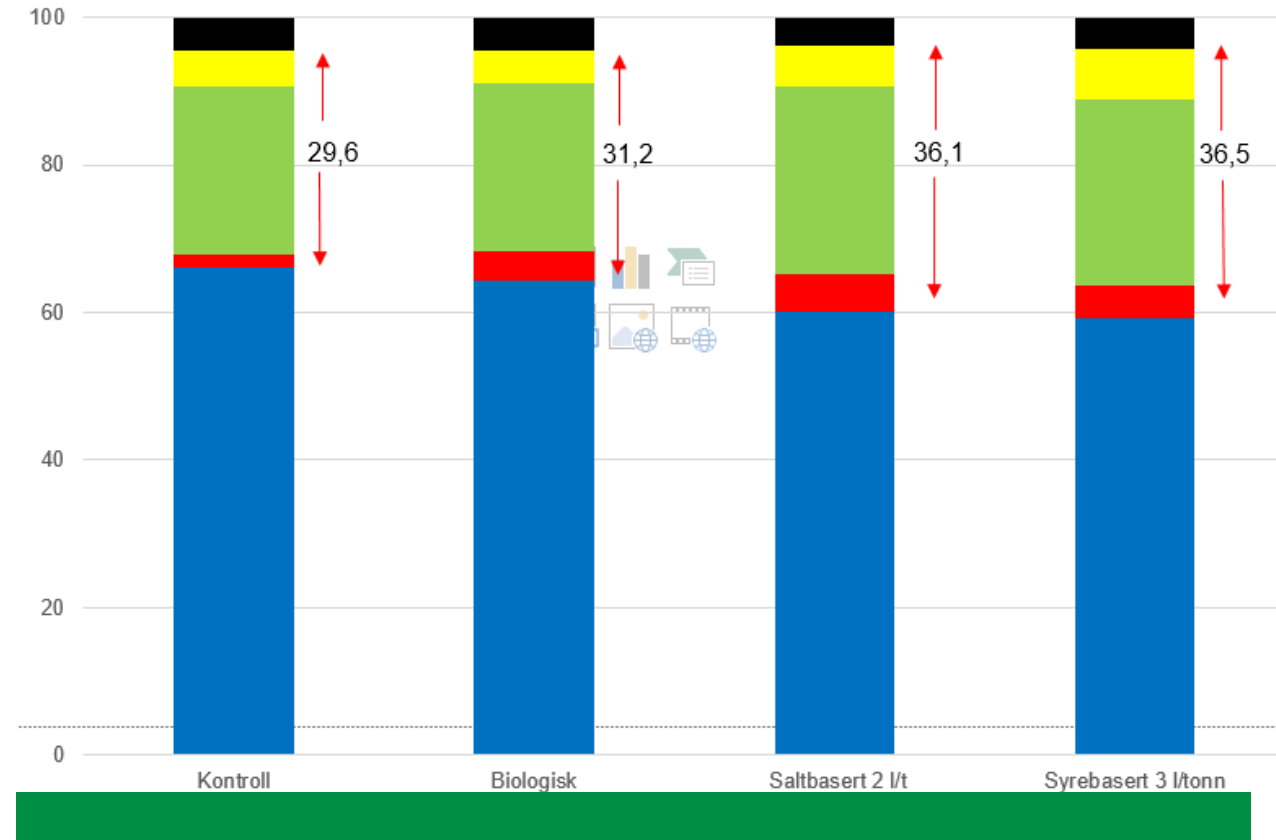


Ensilering

- Under ensileringsprosessen vil det alltid brytes ned protein
- Rask pH senkning vil redusere nedbrytingen
- Økt TS reduserer nedbrytinga

- Mindre nedbryting gir mer protein rett til tarmen og gir mindre trykk på vomma

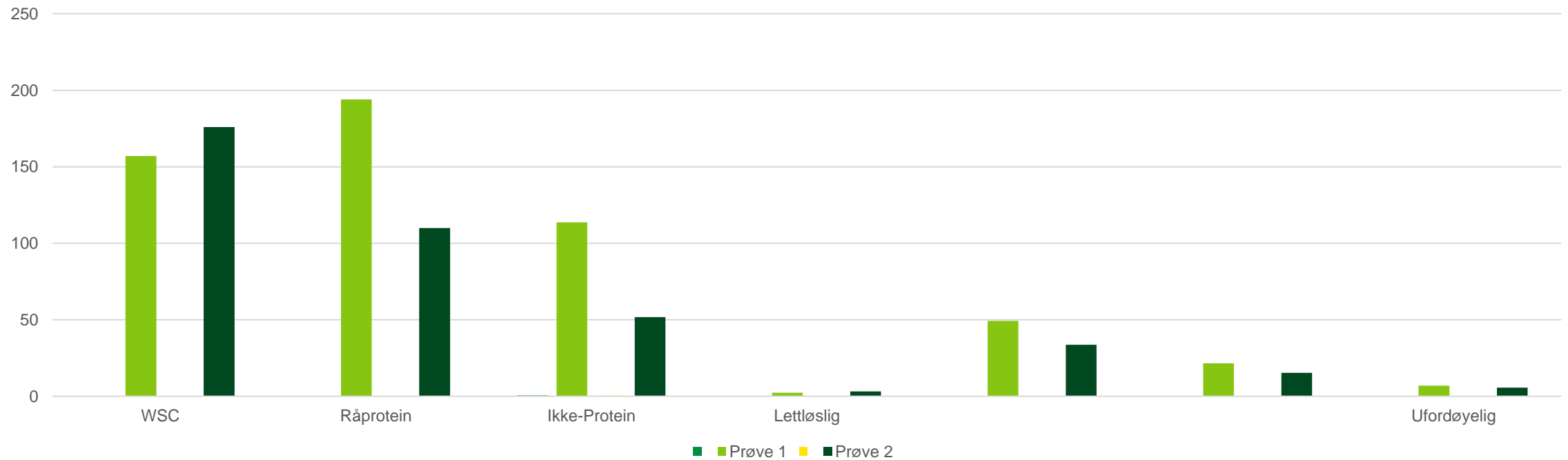
- Redusert gjæring gir mer sukker til å bygge sammen det nedbrutte proteinet



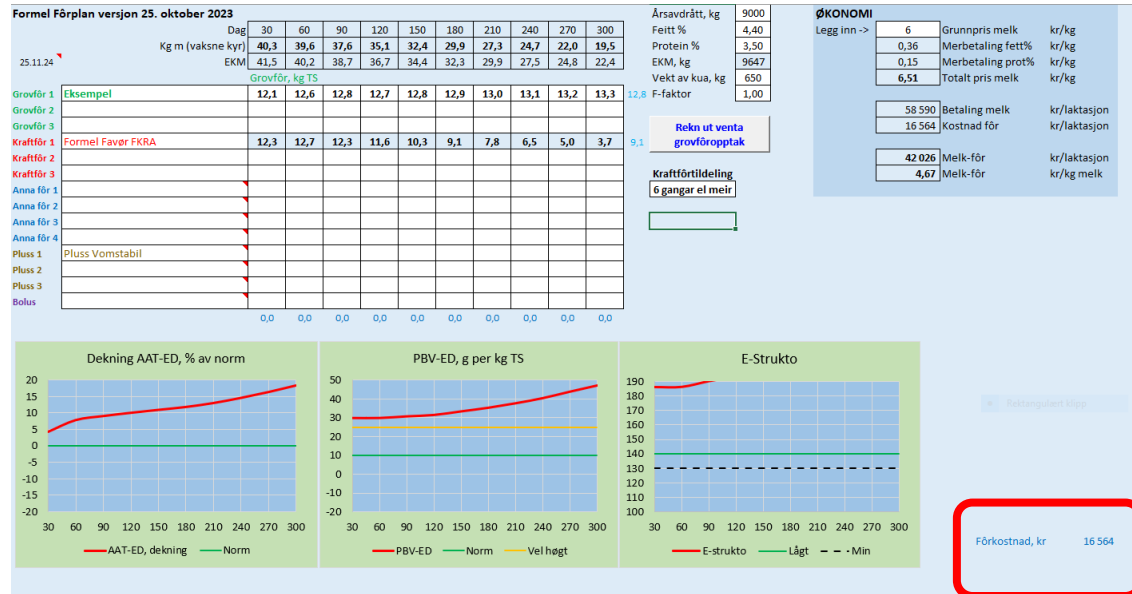
Sukker og protein



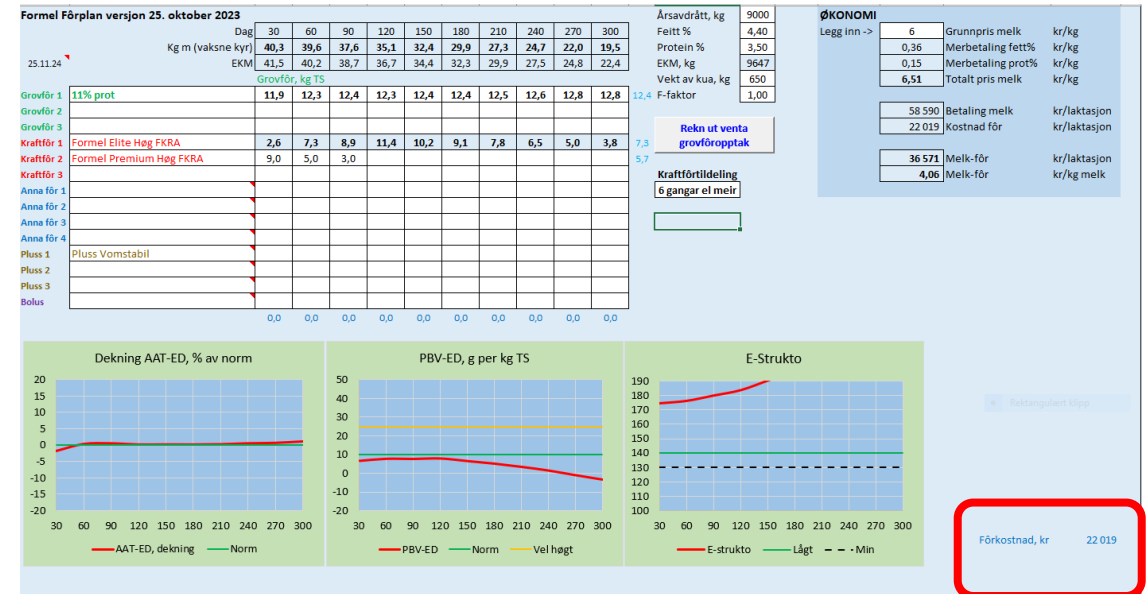
Fordeling av protein



Fôrplan



Kr.fôr kostand 16 564



Kr.fôr kostand 22 019

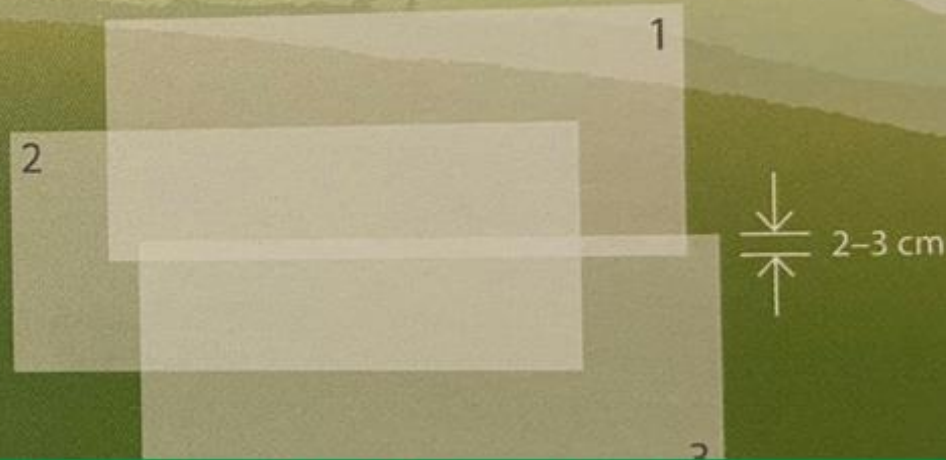
Lagring, lufttett



Lagring, lufttett

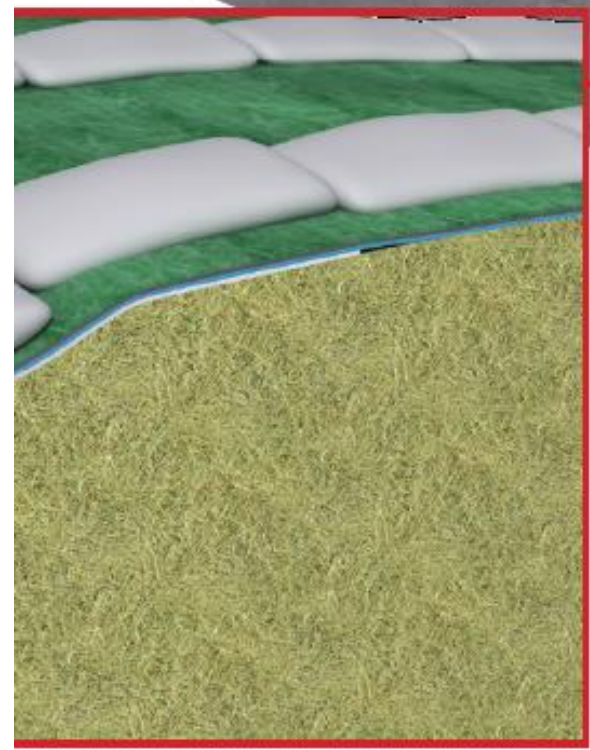
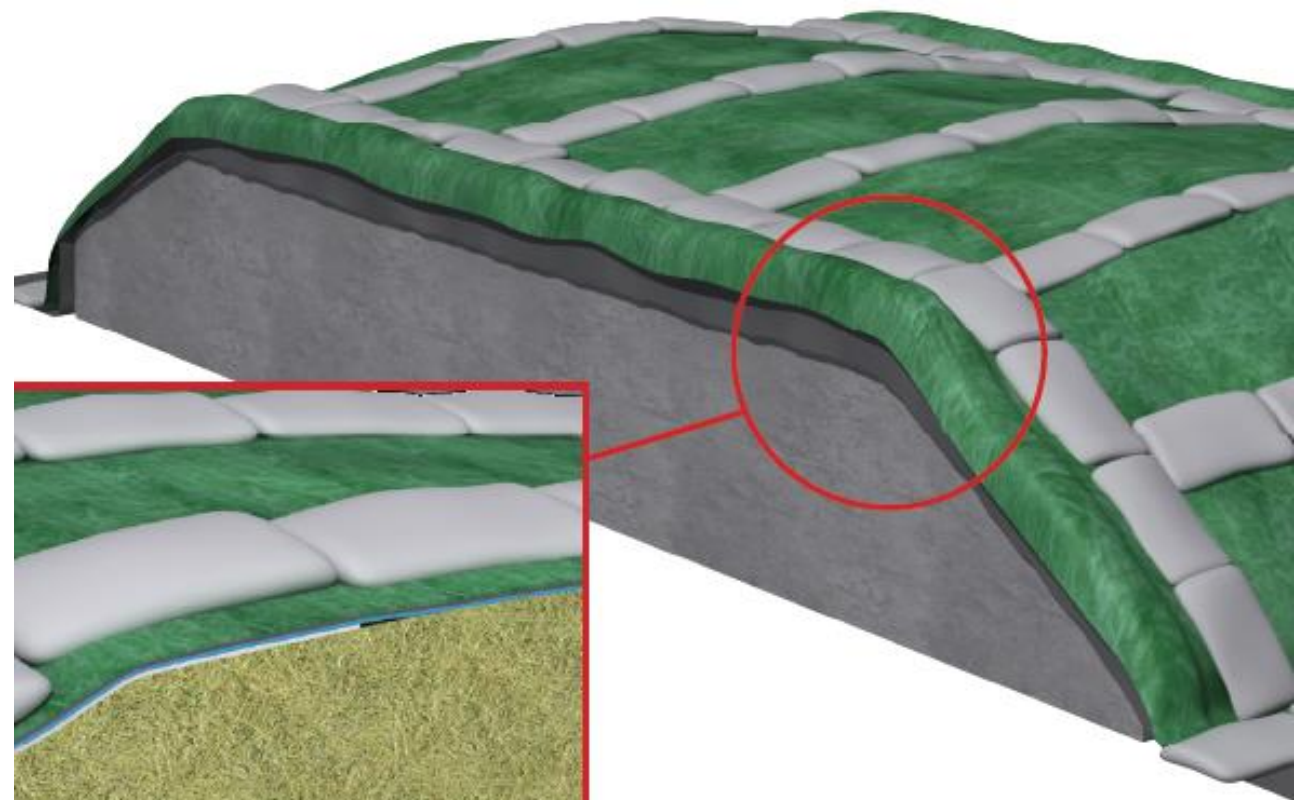
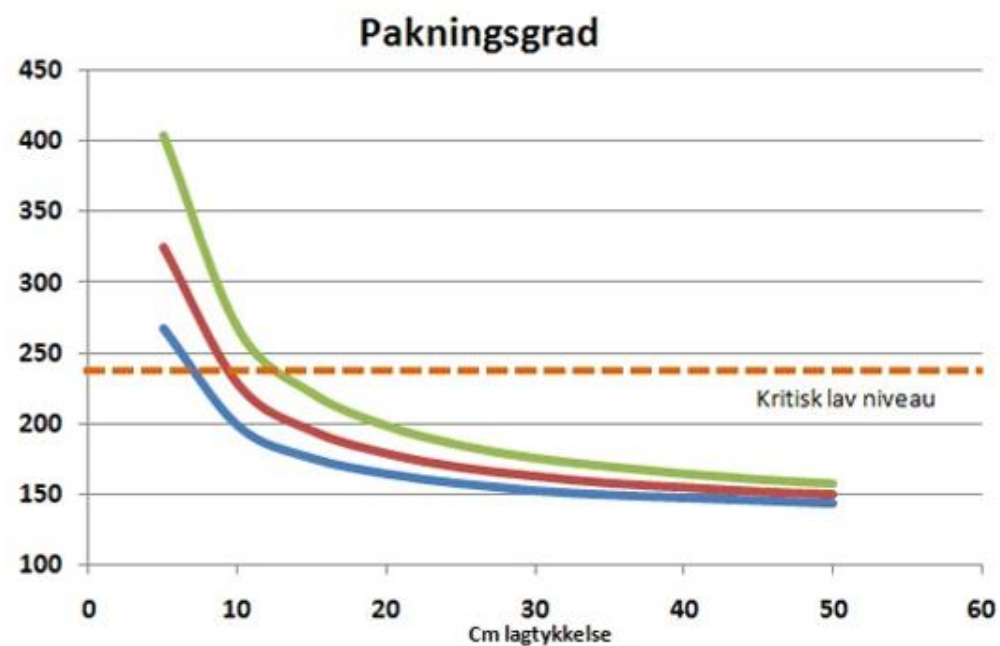


Rett overlapping gir tette baller



Med 55% overlapp får skjøtene den ekstra tetningen som kreves for å effektivt forhindre lekkasje

Plansilo



- ① Underlayer film
- ② Wall film
- ③ Wide sheet film -
- ④ Protection grid
- ⑤ Sand bags

Takk for meg!



Felleskjøpet



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Sammen tar vi vare på jorda, dyra og framtida