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Central Baltic Programme

Sustainable Silage

Silage production in Finland

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ProAgria Western Finland

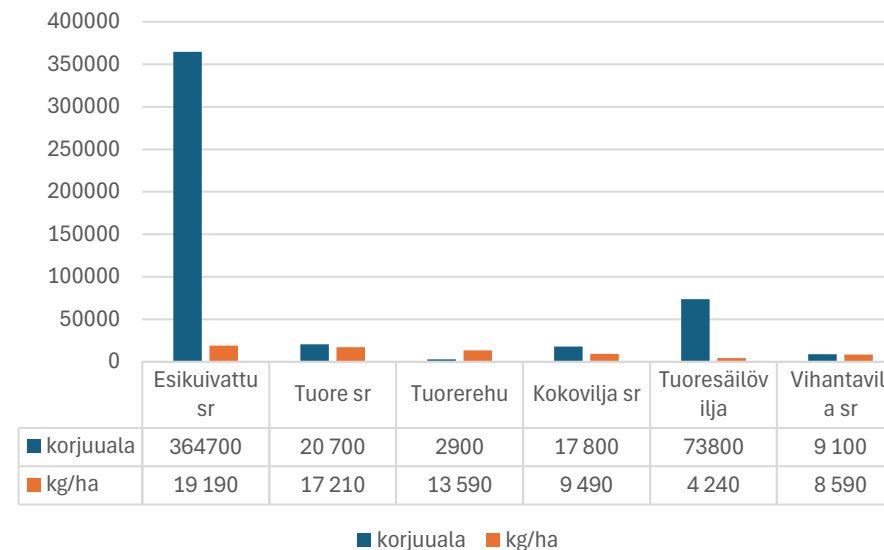
Sustainable Silage international conference in Tartto on 8th of
October 2025



Use of grasslands

	Finland	
Utilised agricultural area (UAA)	2 250 000 ha	
Grassland area	788 000 ha	
Share of grasslands of the UAA	35 %	
Silage area	600 000 ha	
Dry hay	118 000 ha	
Pasture	50 000 ha	
2024		
Total silage cut area	469 000 ha	
Average silage yield (fresh weight)	17,5 t/ha	=6 t DM/ha. Good farmers produce 10 tonnes DM/ha
Total silage output	8 400 M kg	

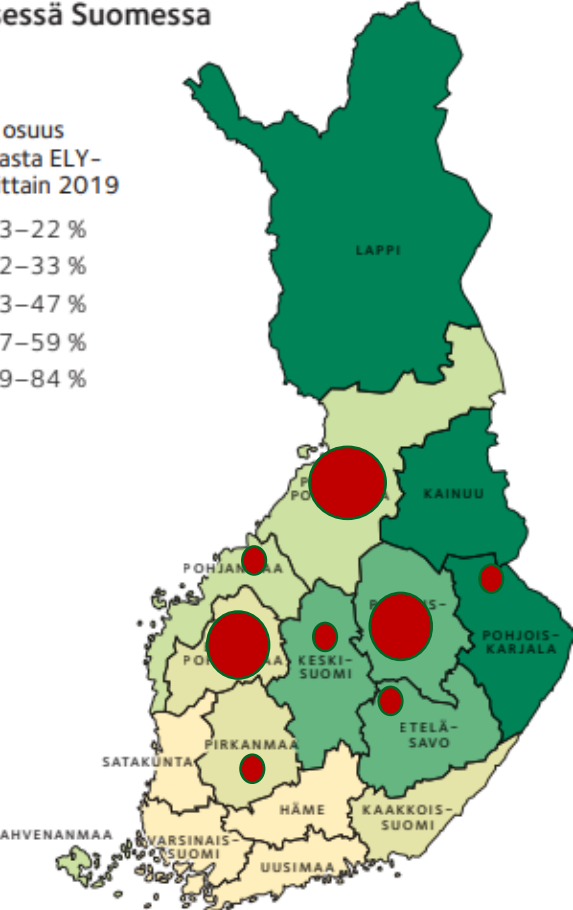
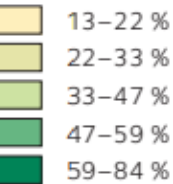
Silage cut area and yield 2024



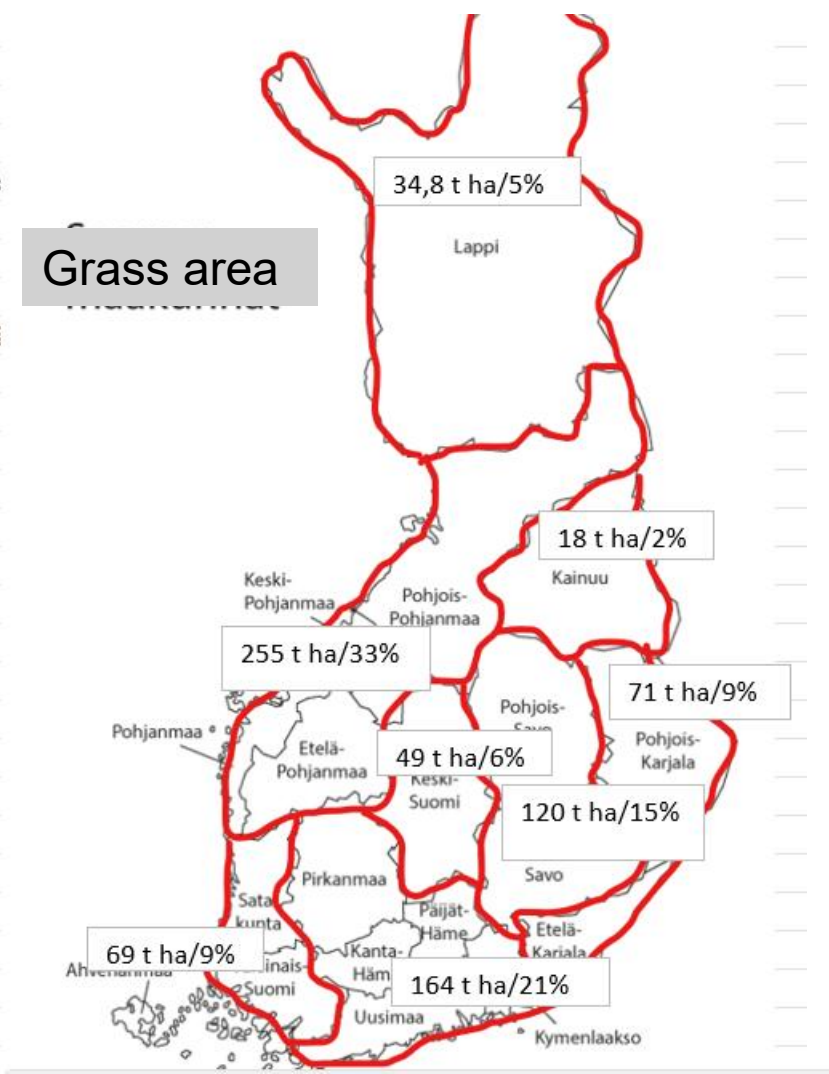
Most of the silage fields are around the active dairy and beef farm areas and in the West and east of Finland where most of the bigger fields are located.

Nurmen osuus peltomaasta on vähäisintä eteläisessä Suomessa

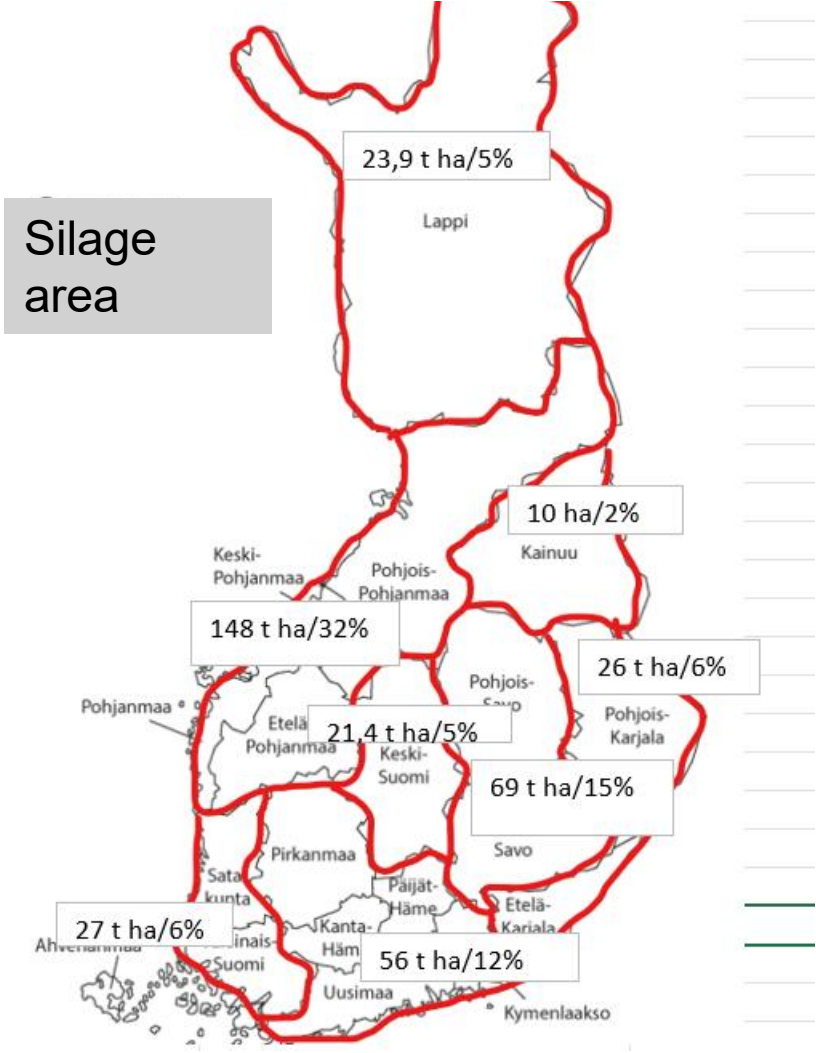
Nurmen osuus peltomaasta ELY-keskuksittain 2019



Grass area



Silage area



Source Luonnonvarakeskus

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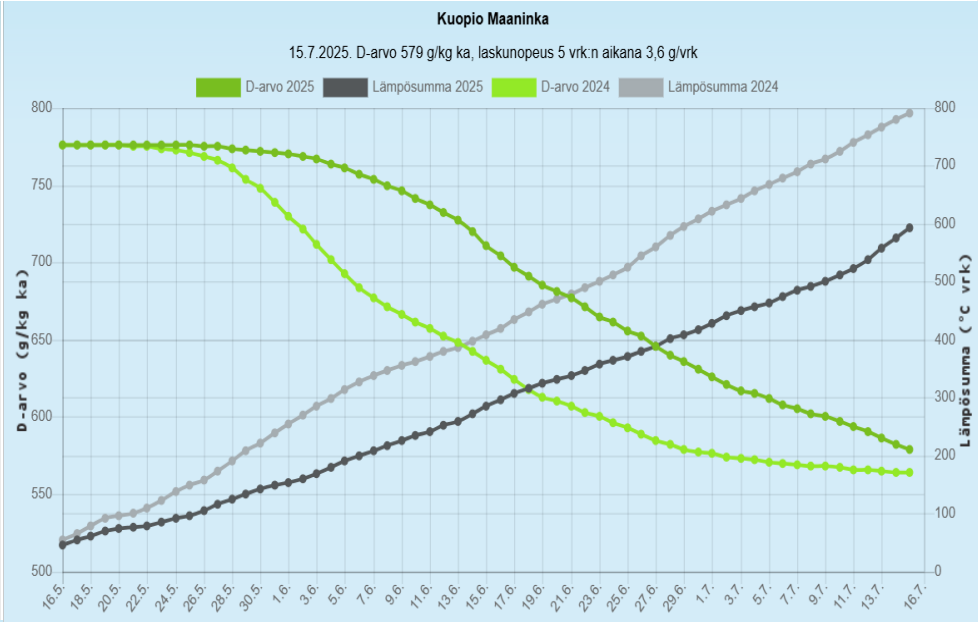
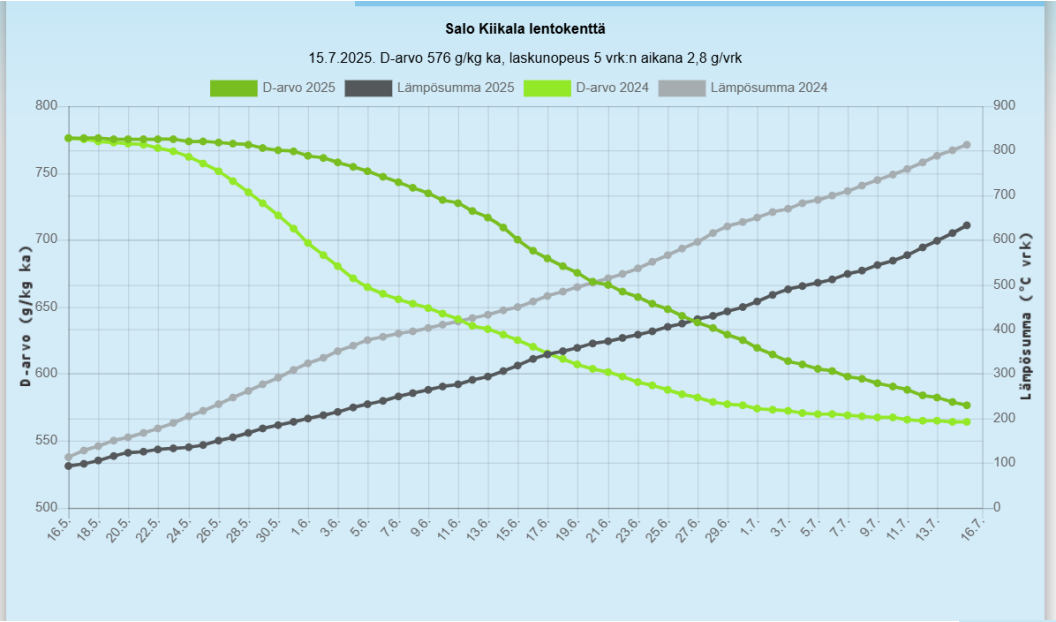
uotuisasti pellon kasvu-
sen tilastotietokanta.A

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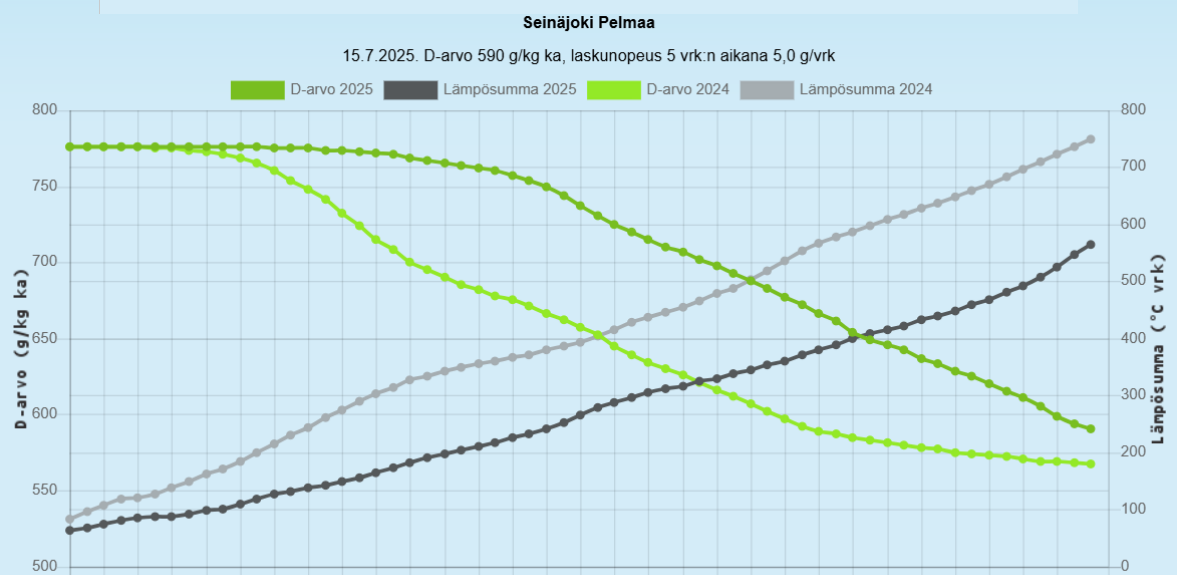
Sustainable Silage

● Number of dairy cows (most significant areas)

Long country affects differences



Source KARPE | Nurmesta se kaikki lähtee - 1. sadon D-arvoennuste



Mainly grass and grass-legume based silage in Finland

Valio silage samples comparison in 2023

5.12.2023



Grass

Clover & grasses

Alfalfa & grasses

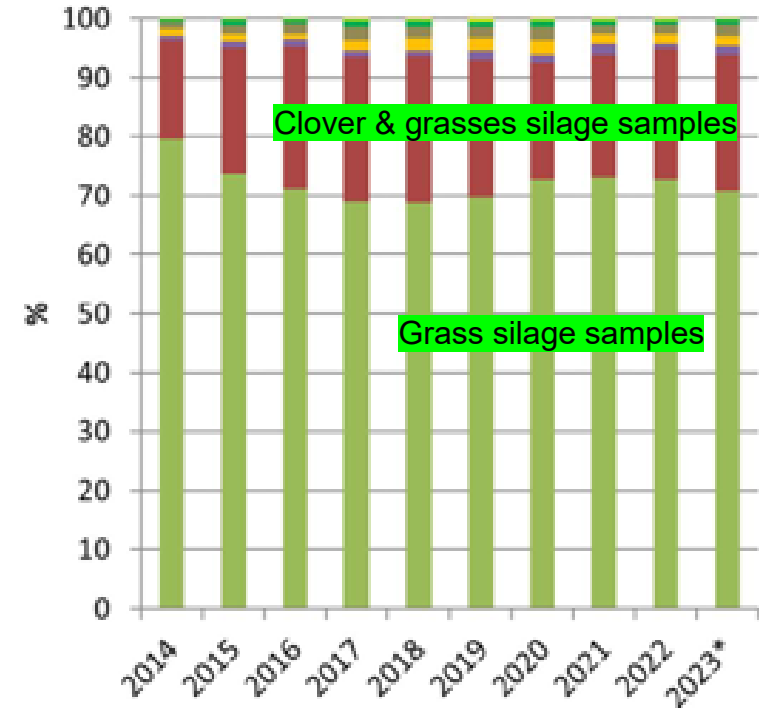
Wholecrop and green chop

Corn

Sudangrass

Sato	nurmi	apilapitoinen	sinimailaspitoinen	kokovilja	palkokasvi-kokovilja	vihantavilja	maissi	sudaninruoho	Kaikki yhteensä
1st cut	4500	1414	66						5980
2nd cut	3123	1075	64						4262
3rd cut	472	154	20						646
4th cut	1	4	1						6
Ei tietoa	150	24	14	200	233	87	16	4	728
All cuts together	8246	2671	165	200	233	87	16	4	11622
%-osuus	71	23	1,4	1,7	2,0	0,7	0,1	0,03	

Source: Valio Artturi



- maissi
- vihantavilja
- palkokasvi-kokovilja
- kokovilja
- sinimailaspitoinen
- apilapitoinen
- nurmisäilörehu

Clover & grasses silage samples

Grass silage samples

Grasslands in Western Finland

- 1st cut in the beginning of June-mid June
- 2nd cut about 6 weeks later
- 3rd cut in September
- 4th cut a norm in the future?
- **Discussion group members' average yield in 2023 was 8800 kg DM/ha (3 cuts in total)**



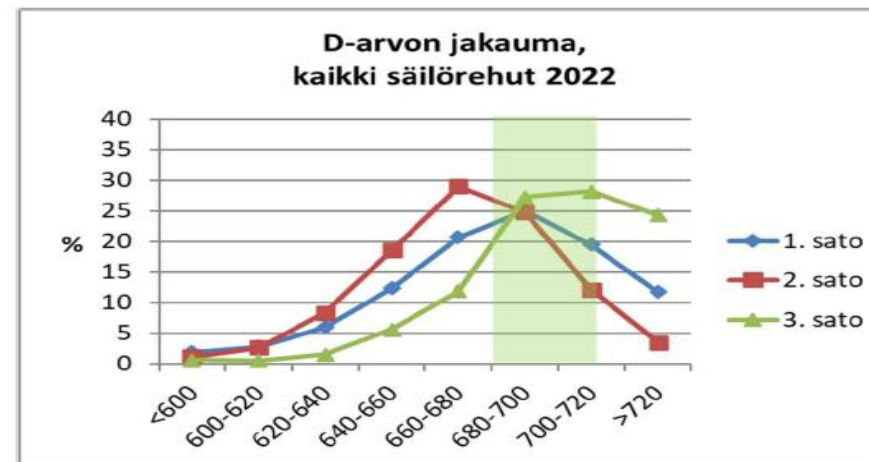
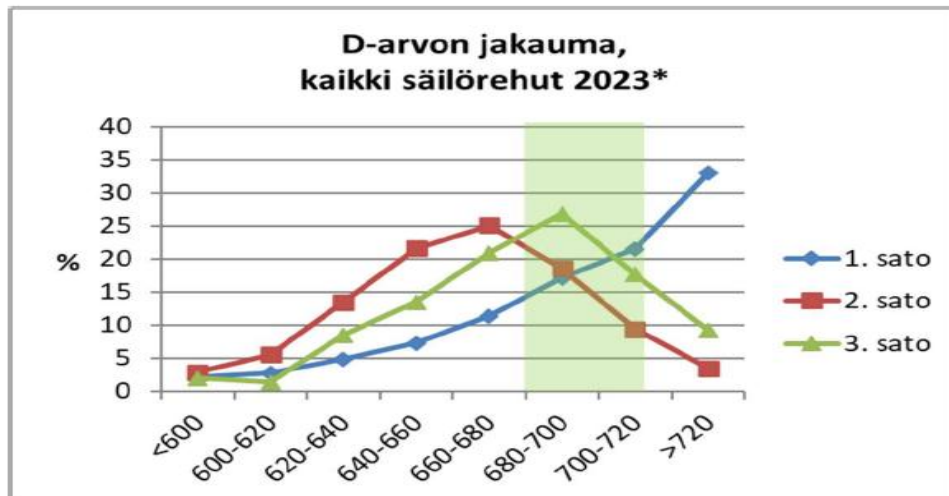
Silage quality: D-value and crude protein

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SÄILÖREHUNÄYTTEIDEN D-ARVO 2023* VRT 2022



*1.8.-29.11.2023

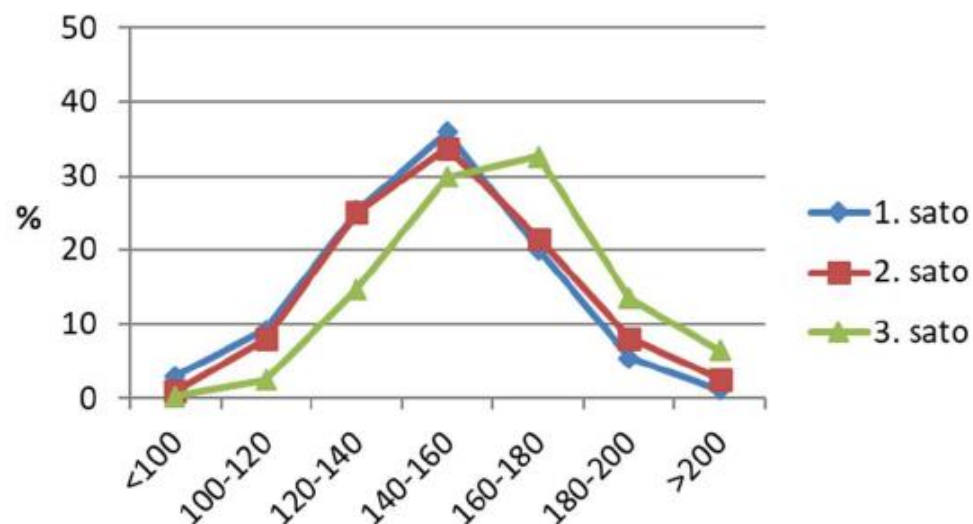
72%:ssa 1. sadon säilörehunäytteistä D-arvo yli 680 😊

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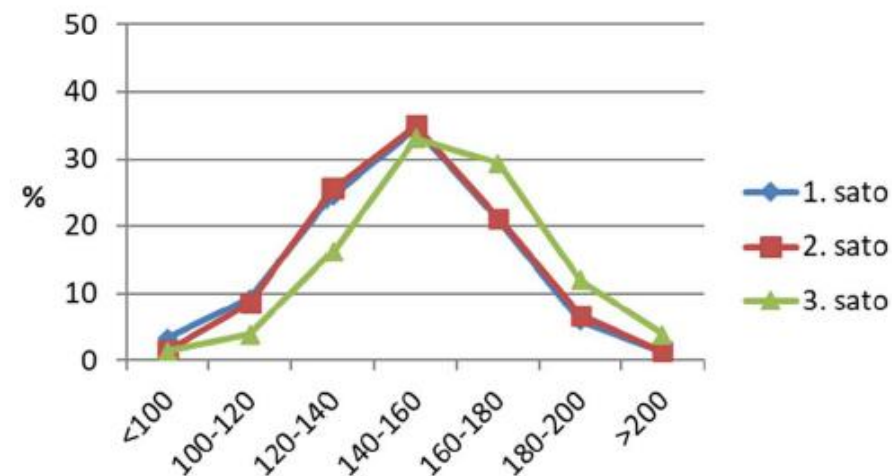
Target D-value 680-700 g/kg dw

SÄILÖREHUNÄYTTEIDEN RAAKAVALKUAISPITOISUUS 2023* VRT 2022

Raakavalkuaispitoisuuden jakauma,
kaikki säilörehut 2023*



Raakavalkuaispitoisuuden jakauma,
kaikki säilörehut 2022



*18.11.2023

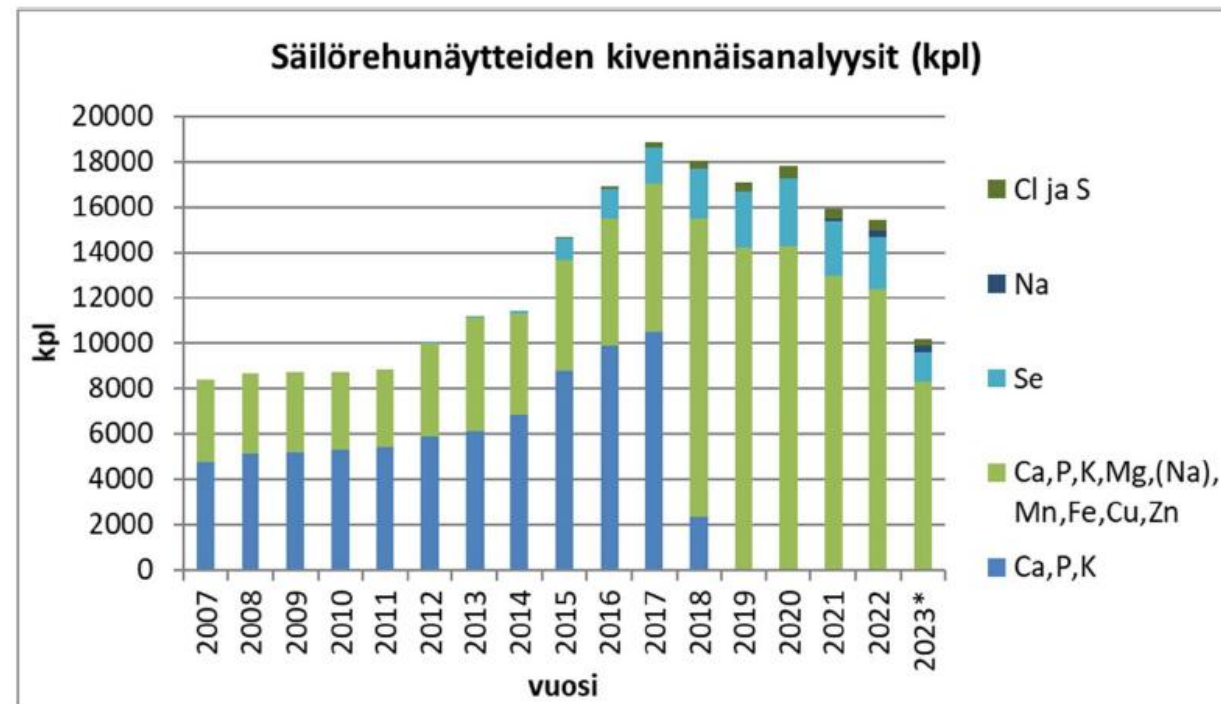
Target value for crude protein
150-170 g/kg dw

Higher interest for silage mineral nutrient content

5.12.2023



SÄILÖREHUNÄYTTEIDEN KIVENNÄIS- JA HIVENAINEANALYYSIT



Mineral nutrients: target values

Ominaisuus	Yksikkö	Tavoite
Sato	kg ka/ha	≥ 9 000
D-arvo	g/kg ka	680-700
Raakavalkuainen	g/kg ka	150-170
NDF-kuitu	g/kg ka	500-600
Kalsium	g/kg ka	≥ 4
Fosfori	g/kg ka	≥ 3
Kalium 1. sato	g/kg ka	21-28
Kalium 2.-3. sato	g/kg ka	24-28
Magnesium	g/kg ka	≥ 2
Natrium	g/kg ka	≥ 0,3
Sinkki	mg/kg ka	≥ 40
Kupari	mg/kg ka	≥ 8
Mangaani	mg/kg ka	≥ 50
Seleen	mg/kg ka	≥ 0,2

Analyysit	Tulos	Ohjearvo
Fe (mg/kg dm)	72	50
Zn (mg/kg dm)	32.0	37.0
Cu (mg/kg dm)	7.2	6.0
B (mg/kg dm)	7.5	6.0
Mn (mg/kg dm)	28.0	50.0
S (g/kg dm)	2.50	3.00
Ca (g/kg dm)	4.50	3.80
Mg (g/kg dm)	1.80	1.90
K (g/kg dm)	32.00	30.00
P (g/kg dm)	3.40	3.50
N (g/kg dm)	40.60	35.00

5.12.2023



SÄILÖREHUNÄYTTEIDEN KIVENNÄIS- JA HIVENAINEPITOISUUKSIA, TAVANOMAISET NURMISÄILÖREHUT SATOKAUSI 2023*

Tavanomainen	1. sato	2. sato	3. sato
Kivennäisanalyysit, kpl	2370	1632	252
Kalsium g/kg ka	4,4	5,3	5,3
Fosfori g/kg ka	2,8	3,3	3,8
Kalium g/kg ka	22,1	23,3	25,8
Magnesium g/kg ka	1,6	2,0	2,1
Mangaani mg/kg ka	59	74	78
Rauta mg/kg ka	197	249	340
Kupari mg/kg ka	7	7	8
Sinkki mg/kg ka	32	32	31
Natrium, kpl	104	49	9
Natrium g/kg ka	0,41	0,43	0,50
Seeleni, kpl	404	248	23
Seeleni mg/kg ka	0,24	0,17	0,11
Kloridianalyysit, kpl	75	38	4
Kloridi g/kg ka	5,71	7,91	
Rikkianalyysit, kpl	75	38	4
Rikki g/kg ka	2,08	2,43	

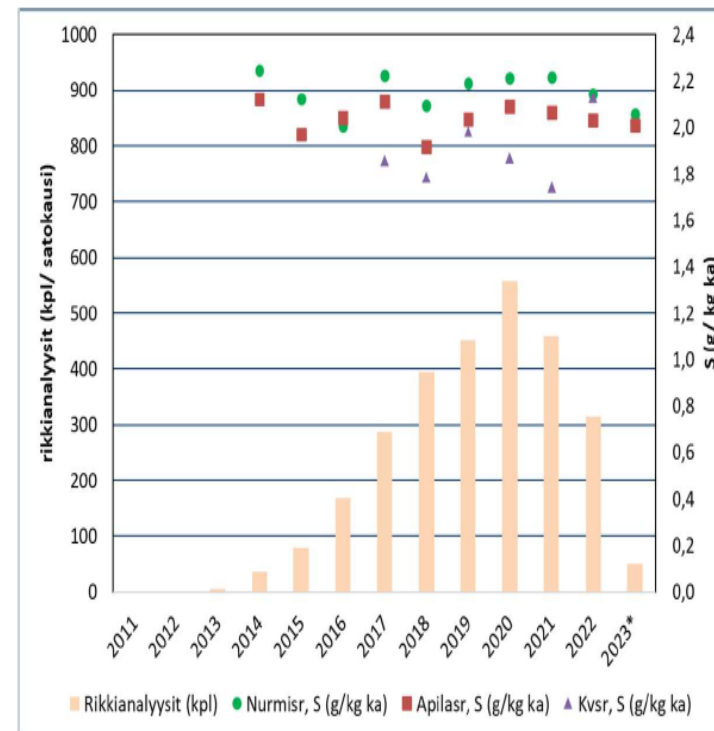
*1.8.-29.11.2023

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SÄILÖREHUNÄYTTEIDEN KESKIMÄÄRÄINEN RIKKIPITOISUUS SATOKAUSITTAIN 2011-2023*



*1.8.-22.9.2023

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Type of silage storage and additive by ensiling style

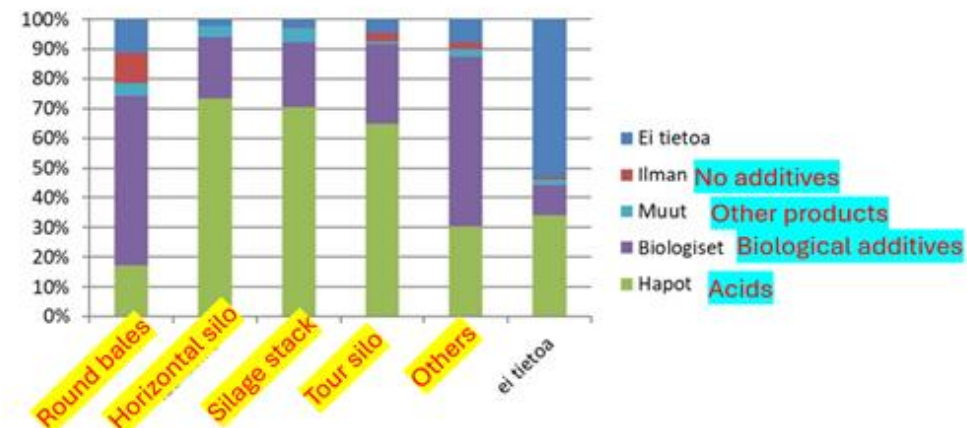
- Silage is stored in Finland:
 - 47% in horizontal silos
 - 41% in bales
 - 8% in stacks
 - 4% others



- Formic acid is the most used additive in Finnish silage making
 - >65% of all the horizontal silo, stack and tour silo samples
 - Round bales are an exception >50% of bale silage samples with biological additives.

SÄILÖNTÄAINEET SÄILÖTYYPEITTÄIN SÄILÖREHUNÄYTTEISSÄ 2023*

5.12.2023



*1.8.-29.11.2023

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Source: Valio Artturi