Euroopa Maaelu Arengu Põllumajandusfond: Euroopa investeeringud maapiirkondadesse

Tõhus ja soodne sigade valmissööt

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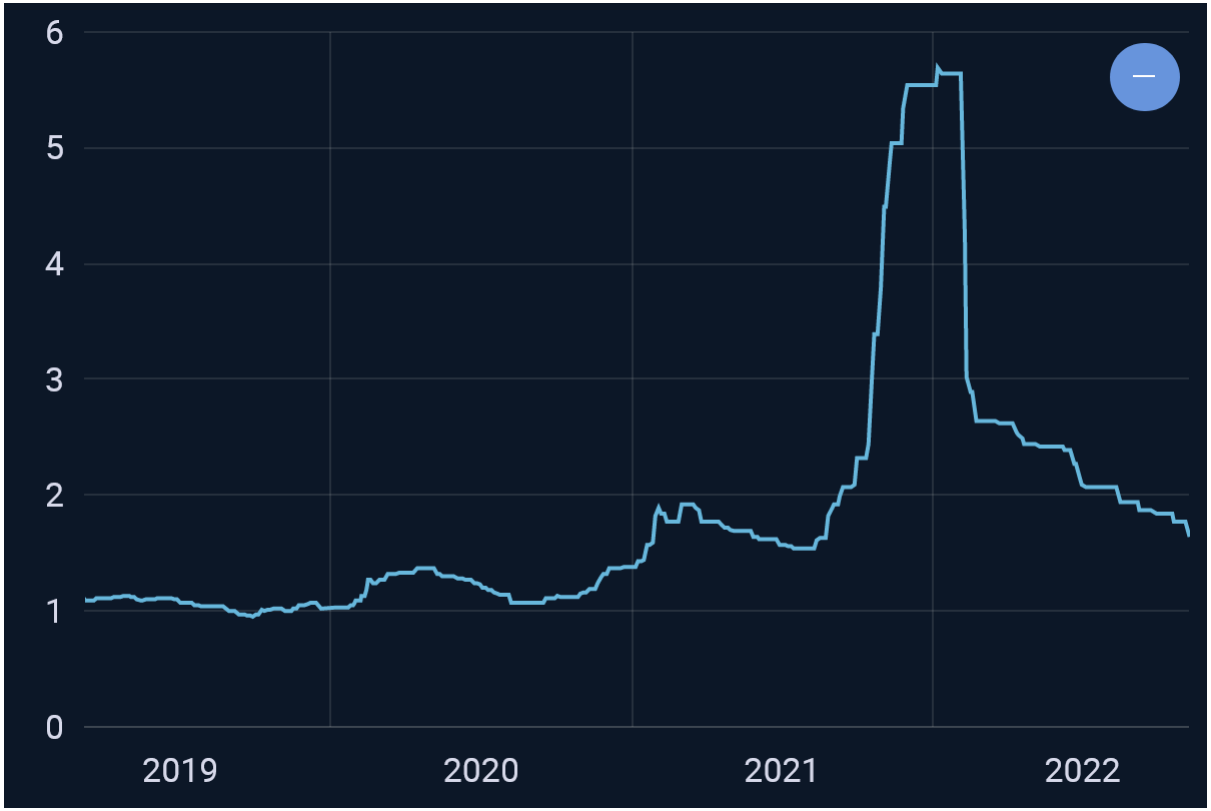
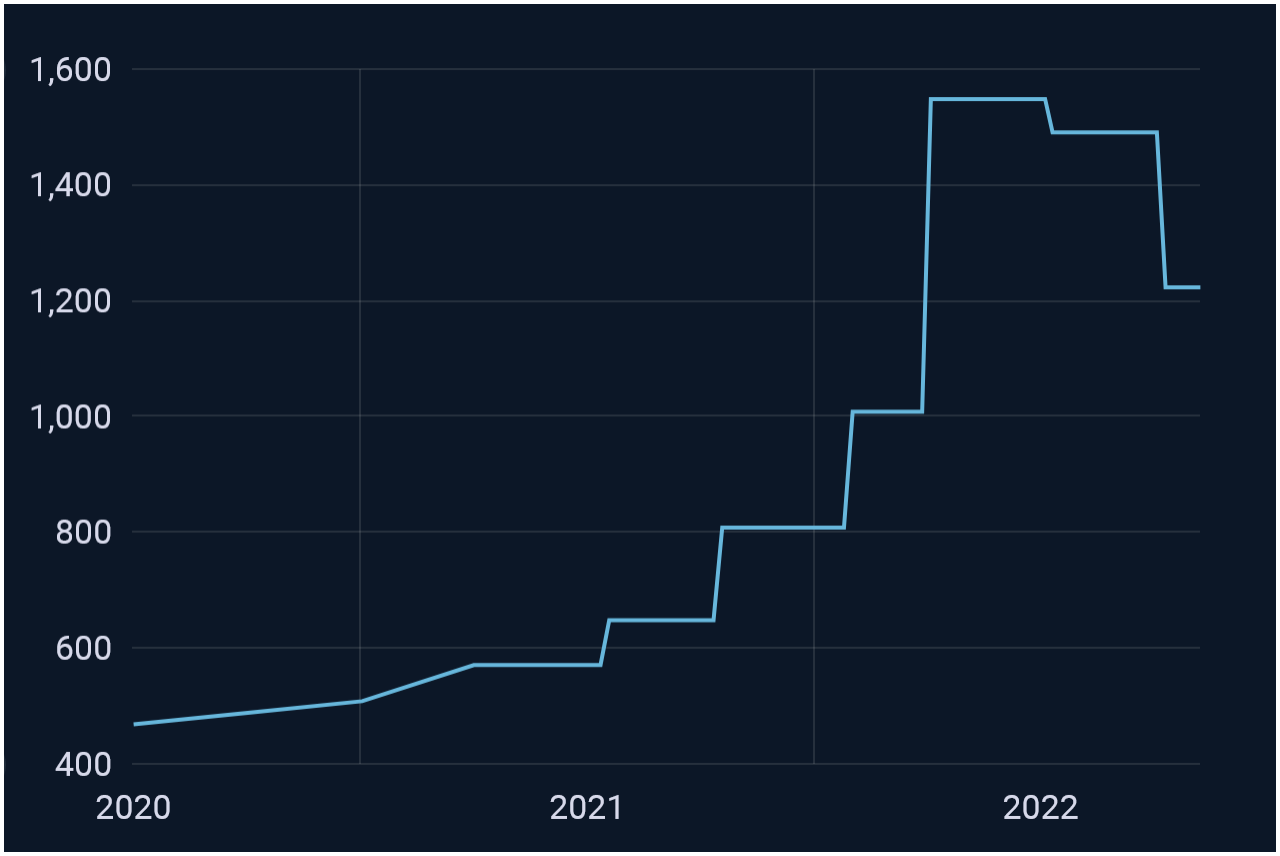
Pärnu, november 2022

Juttu tuleb söötade kokkuhoiu ja optimeerimise kohtadest segase (mõistusevastase) söödaturu ajal ja veidi seakatku levikust söötade kaudu

Lüsiin HCl hind, €/kg



MCP hind, €/t



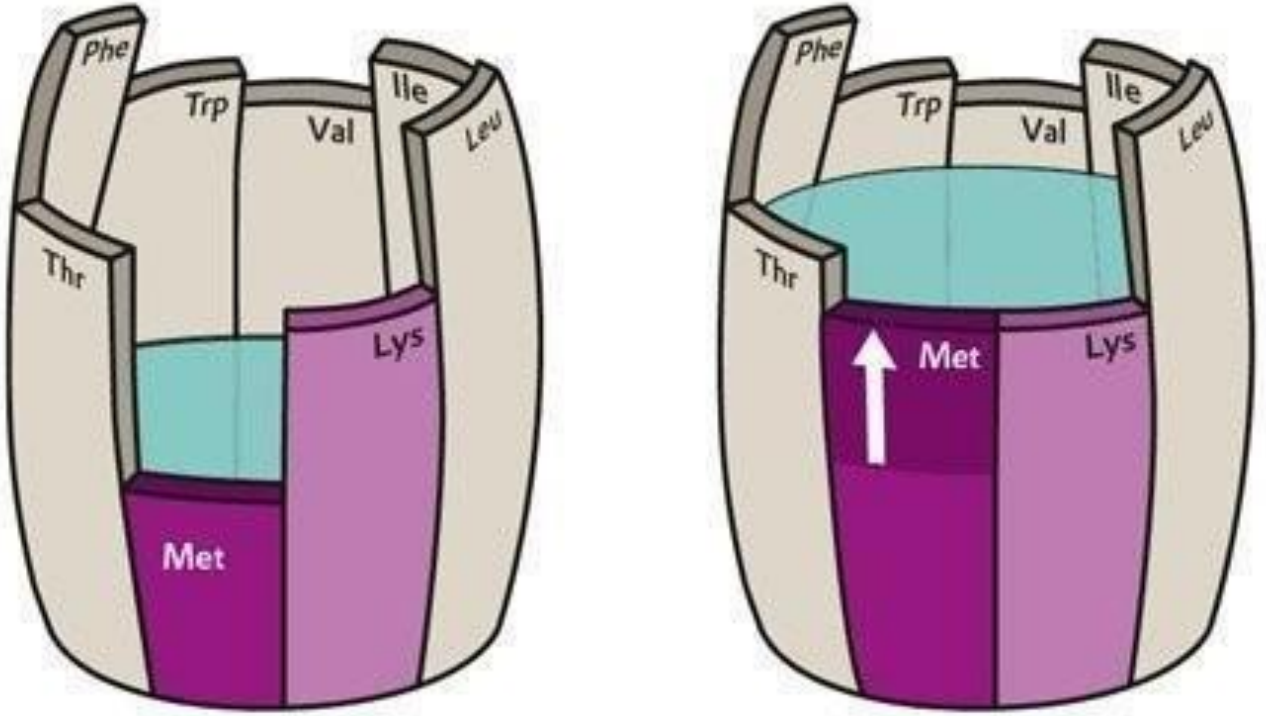
Vitamiin E hind, €/kg

Searümba kokkuostu hind

Kuidas minimiseerida sööda hinda

- Sööt peab vastama looma tarbele, ka normidele
- Mis söödad on meil üldse saadaval
- Kuidas valida valmissööda komponente
- Kuidas saaksime katta puudujäävad toitained
- Kuidas koostada minimaalse hinnaga valmissööt

Liebigi tünn



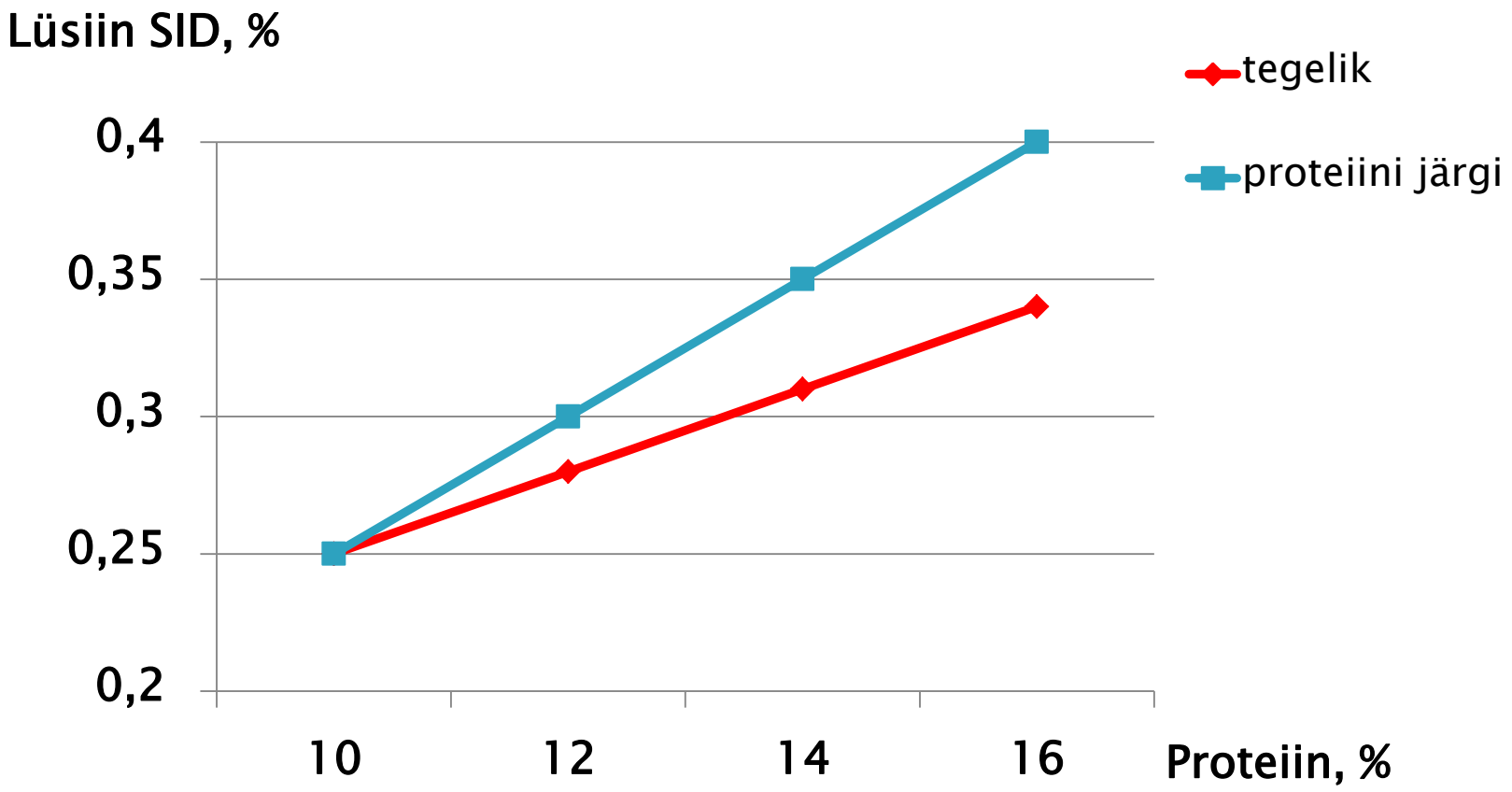
1.Fosfor – kallis toitaine

- Fosfaati lisatakse 0,5-1%
- 1% maksab 1600€*0,01=16€
- Me saaksime kokku hoidu 0,5% ehk ca 6-7€ valmissööda tonni kohta

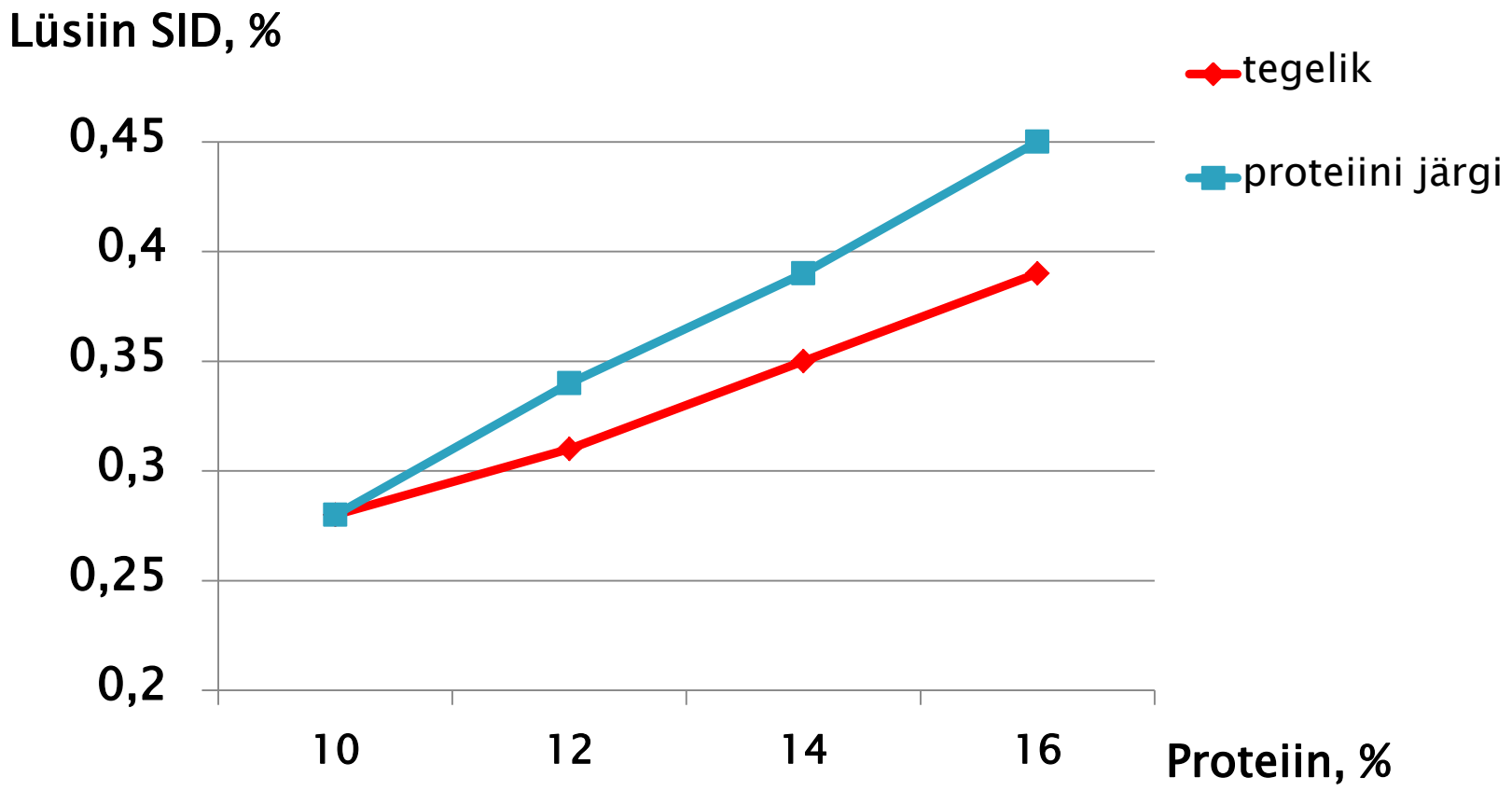
2.Teravilja proteiini kvaliteet

- Kui palju võib vähendada sojat (täiendsööta), kui nisus on kõrge proteiinisisaldus

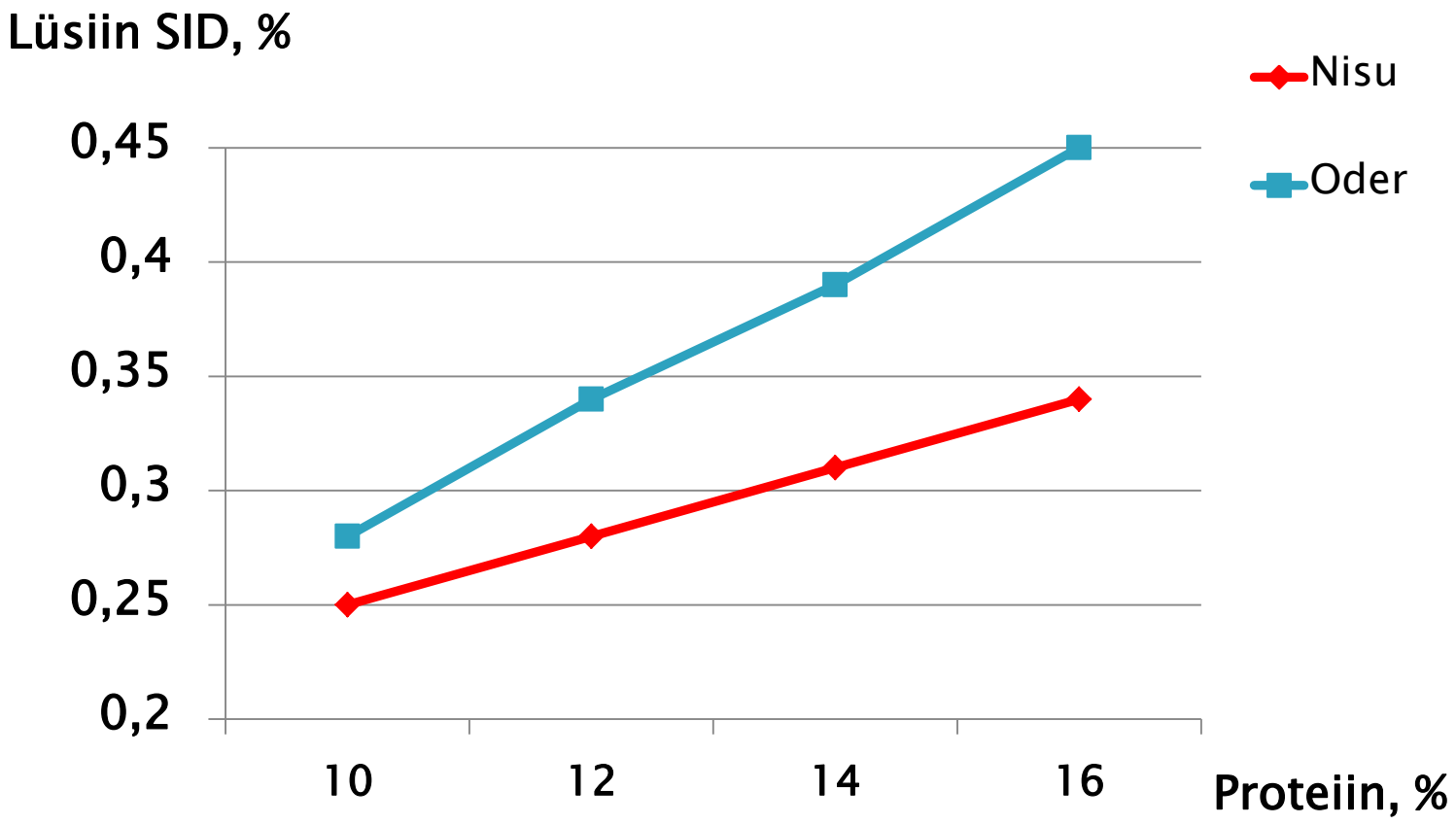
Nisu lüsiin vs proteiin



Odra lüsiin vs proteiin



Nisu ja odra lüsiin vs proteiin

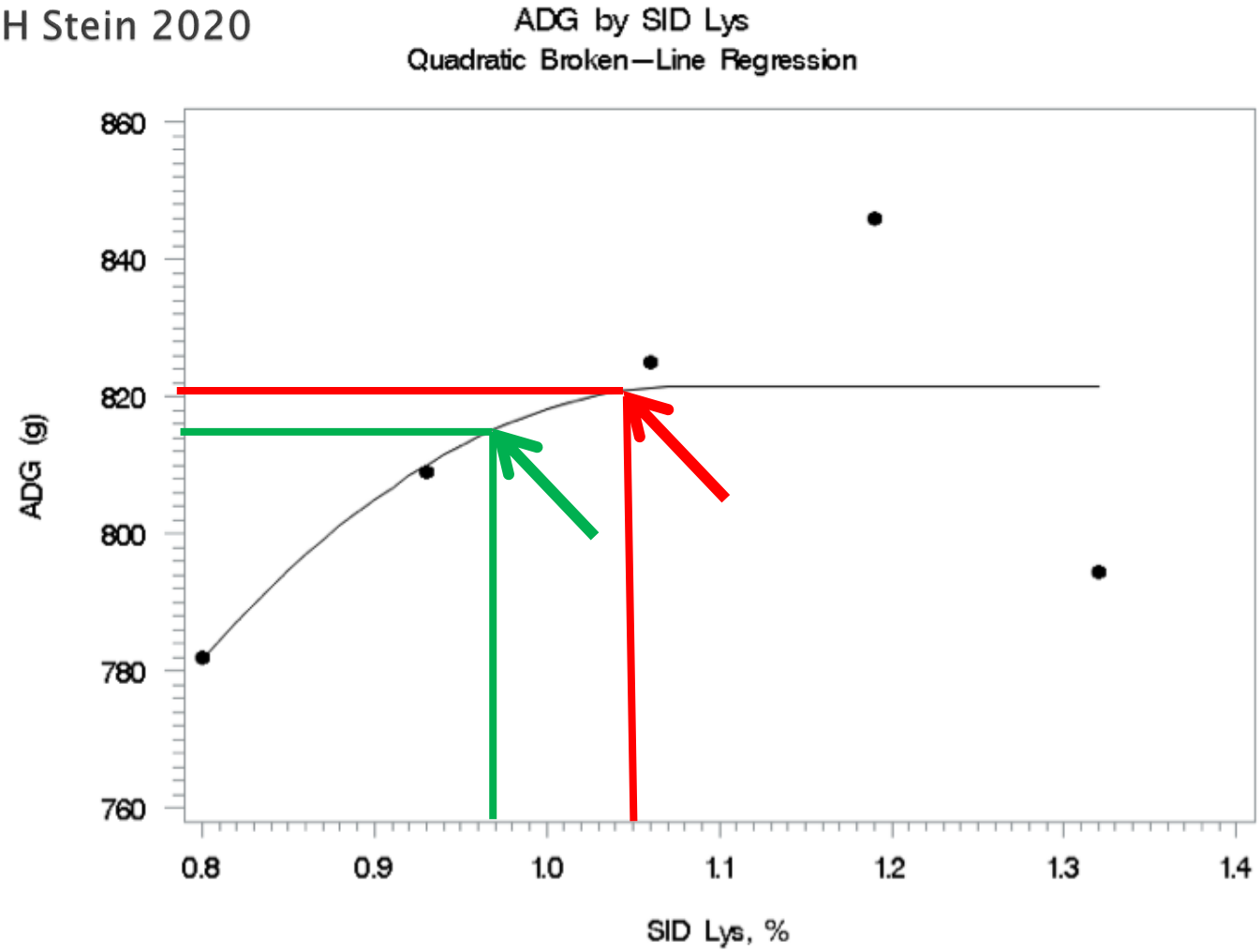


Järeldus:

- Me ei saa proportsionaalselt vähendada (suurendada) soja või täiendsööda kogust, kui teravilja proteiin on kõrgem või madalam
- Tuleb arvestada aminohappeid tervikuna
- Võime kaotada lüsiini arvelt 1-2€/tonn sööda hinnast, aga pigem palju enam kui lüsiinitarve on täitmata

3.Aminohapete ja juurdekasvu graafik ei ole lineaarne

Hans.H Stein 2020



Aminohapete vajaduste suhted muutuvad kasvufaasides

Amino acid	Pig weight range, kg					
	4 to 25	25 to 40	40 to 60	60 to 80	80 to 100	100 to 130
Lysine	100	100	100	100	100	100
Threonine	62	61	61	62	63	64
Methionine	28	28	28	28	28	28
Methionine + cysteine	58	56	56	56	57	58
Tryptophan [b]	16.5	16.5	16.5	16.5	16.5	16.5
Isoleucine[c]	52	52	52	52	52	52
Valine	65	65	65	65	65	65
Arginine	42	40	38	36	34	34
Histidine	32	32	32	32	32	32
Leucine	100	100	100	100	100	100
Phenylalanine	60	60	60	60	60	60
Phenylalanine + tyrosine	94	94	94	94	94	95

4.Hetkel kallimate söödakomponentide asendamine soodsamatega

Energia- ja proteiinisisaldused

Söötade keemilise koostise ja … tabelid, Tartu 2004

	ME, MJ	Proteiin, %
Oder	12,5	10,8
Nisu	13,6	12,6
Rukis	13,2	9,5
Tritikale	12,5	12
Kaer	13,4	10,9
Mais	13,7	8,2
Hernes	13,4	21,5
Põlduba	12,4	24,5
Sojasr	13,7	45

Teraviljade maks lisamismäärad

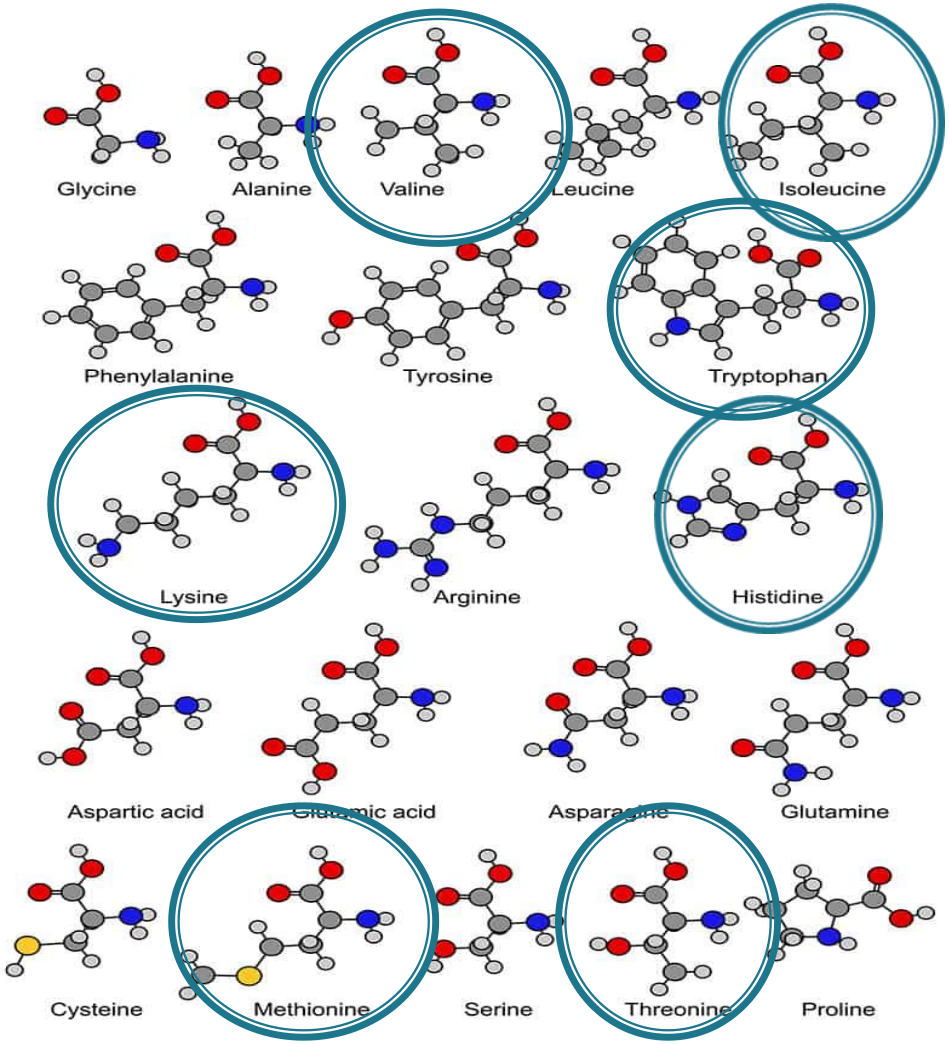
	Starter	Kes-nuum	Tiine e	Im em	
Oder	25%	95%	90%	85%	95-100
Nisu	45%	95%	90%	40%	100-110
Rukis	10%	35%-50%	20%	10%	100-105
Tritikale	25%	95%	25%	40%	95-105
Kaer	0%-5%	40%	90%	0%-15%	80-85

The influence of dietary inclusion of peas, faba bean and lupin as a replacement for soybean meal on pig performance and carcass traits L. Degola and D. Jonkus

Table 3. Effect of dietary treatment on performance of pigs

Dietary treatment	In growing period			In finishing period		
	ADG, g	ADFI, g	G:F, g g^{-1}	ADG, g	ADFI, g	G:F, g g^{-1}
Soybean meal	555	1,848	0.300	897	2,560	0.351
Pea						
15%	550	1,970	0.279	892	2,900	0.347
28%	554	1,831	0.303	915	2,980	0.335
Faba bean						
20%	545	1,975	0.275	867	2,630	0.330
25%	540	1,995	0.270	828	2,580	0.321
Lupine seed meal						
12%	528	2,000	0.264	853	2,680	0.318
15%	450	2,011	0.223	726	2,440	0.298
SEM	37	69	0.0246	64	178	0.0168
P-value						
Soybean meal vs. pea	0.39	0.17	0.48	0.26	0.13	0.15
Soybean meal vs. faba bean	0.02	0.82	0.21	0.06	0.11	0.09
Soybean meal vs. lupine seed meal	0.01	0.57	0.02	0.04	0.36	0.07

5.Proteiini kulu vähendamine aminohapete abil



6.Valmisööda optimeerimine simpleks meetodiga

7.Sööda peenestamine

INSTITUTION: PIG RESEARCH CENTRE AUTHORS: DORTHE K. RASMUSSEN MARIE LYBYE ANDERSSON LISBETH JØRGENSEN PUBLISHED: SEPTEMBER 27, 2012

Grinding	Fine (2.5 mm sieve)	Coarse (5.5 mm sieve)
Above 2 mm, %	0.3	13.5
1-2 mm, %	27.1	37.4
Below 1 mm, %	72.6	49.1

Average of 9 samples of each type of grinding.

INSTITUTION: PIG RESEARCH CENTRE AUTHORS: DORTHE K. RASMUSSEN MARIE LYBYE ANDERSSON LISBETH JØRGENSEN PUBLISHED: SEPTEMBER 27, 2012

Factor	Grinding		Xylanase			Effect of grinding	Effect af BS3 Xylanase	Effect of Porzyme 9302
Level	Fine	Coarse	None	BS3 Xylanase	Porzyme 9302			
Daily gain, g/day	561	543	544	560	553	* 1)	* 1)	NS2)
FCR, FUgp/day	0.99	0.98	0.97	0.99	0.98	NS2)	NS2)	NS2)
FCR, FUgp/kg gain	1.76	1.81	1.80	1.77	1.78	* 1)	* 1)	NS2)

1) Significant ($p<0.05$).

2) Not significant.

Sigade Aafrika katku levik söödaga

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Berl Münch Tierärztl Wochenschr (135)
DOI 10.2376/1439-0299-2022-3
1–9

ISSN 1439-0299

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Eingegangen: 11.02.2022
Angenommen: 04.08.2022
Veröffentlicht: 20.10.2022

https://www.vetline.de/berliner-und-muenchener-tieraerztliche-wochenschrift-open-access

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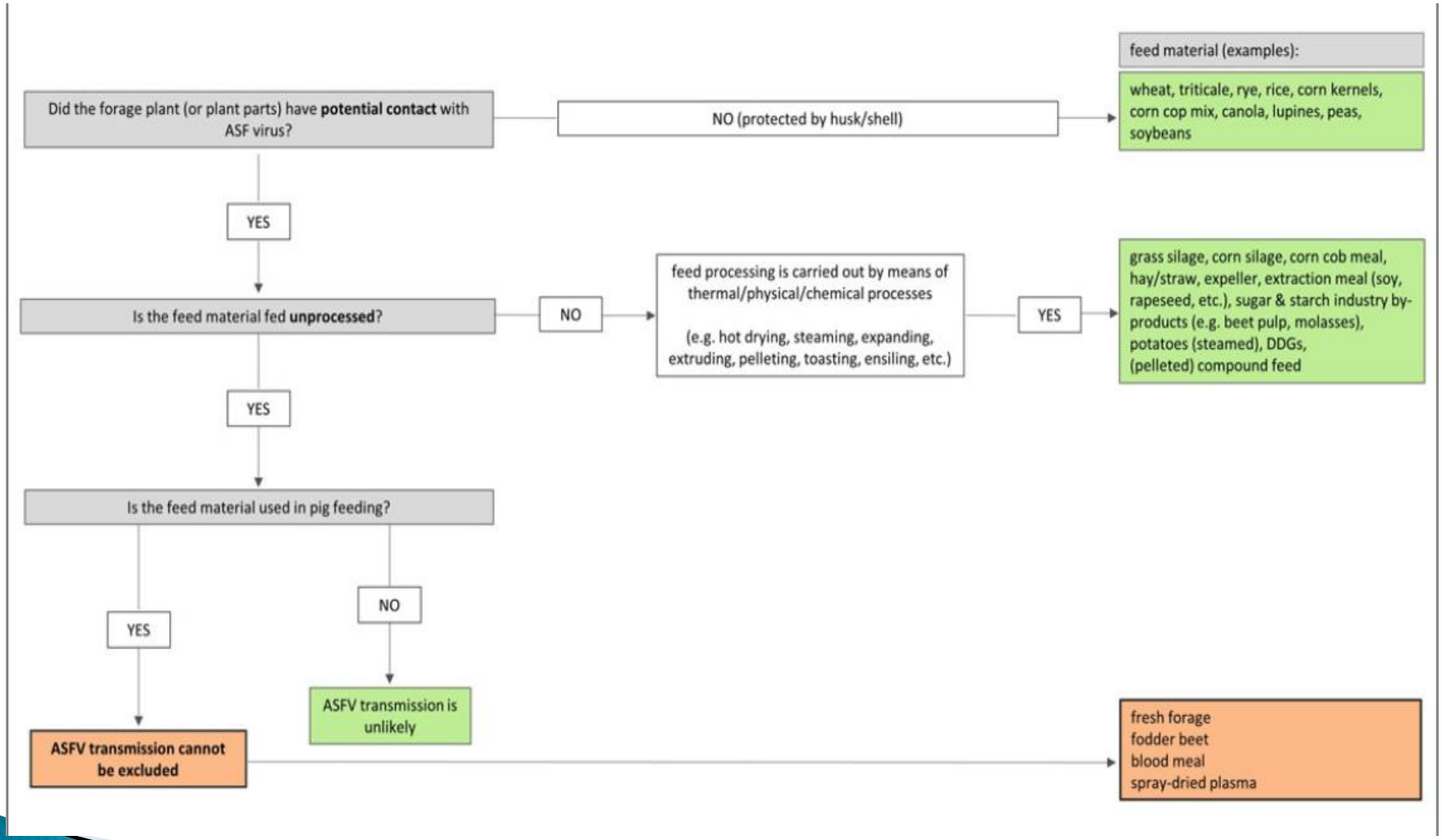
Literature review and qualitative risk assessment on the role of feed materials in African Swine Fever Virus transmission

Literaturübersicht und qualitative Risikobewertung zur Rolle von Futtermitteln bei der Übertragung des Virus der Afrikanischen Schweinepest

Janine Kowalczyk[1*], Naomi N. Barak[1*], Oliver Riede[1], Anna-Maria Engel[1], Felicitas Koch[1], Markus Spolders[1], Sandra Blome[2], Robert Pieper[1*]
* corresponded equally

TABLE 1: *Assessment of the probability of ASFV transmission from feed material to domestic pigs through protective seed coverings mechanisms, feed processing and storage conditions using risk factors*

Feed material	Protective seed coverings	Processing	Storage conditions	ASFV transmission risk factor	Probability of ASFV transmission
Forages and roughages					
forages (alfalfa, clover, grass, green corn)	No (3)	–/D (3/1)	Few, days, OT (3)	2	cannot be excluded
roughages (hay, straw)	No (3)	D (1)	Several month, OT/ RT (1)	1	Unlikely[1]
silage	No (3)	S (2)	At least 90 days; OT (1)	2	Cannot be excluded*
Grain and grain by-products					
grains	Partly (2)	D/CP/S (1)	RT (1)	1	Unlikely[3]
corn	Yes (1)	D (1)	RT[2] (1)	1	Unlikely
Corn cob meal	Partly (2)	S (2)	RT (1)	1,5	Unlikely
DDGS	Partly (2)	H & D (1+)	RT (1)	1	(Very) Unlikely
expeller, extraction meals	Yes (1)	H & CP (1+)	RT (1)	1	(Very) Unlikely[4]
Tubers und roots					
fodder beet	No (3)	S (2)	Several month, 4°C, 90% AH (3)	3	Likely
sugar beet pulp	No (3)	H (1+)	RT (2)	1	Unlikely
potatoes	No (3)	H & S[2] (1)	RT (1)	1,5	Unlikely
Others					
grain legumes (peas, horse beans, lupines)	Yes (1)	H (1)	RT (2)	1	Unlikely
blood and plasma products	n/a (2)	H & CP (1)	4°C (2) RT (1)[§]	2	Cannot be excluded
compound feed	Partly[5] (2)	H (1)	Several weeks, RT (1)	1	Unlikely


Did the forage plant (or plant parts) have **potential contact** with ASF virus?
NO (protected by husk/shell)
feed material (examples):
wheat, triticale, rye, rice, corn kernels, corn cop mix, canola, lupines, peas, soybeans
YES
Is the feed material fed **unprocessed**?
NO
feed processing is carried out by means of thermal/physical/chemical processes
(e.g. hot drying, steaming, expanding, extruding, pelleting, toasting, ensiling, etc.)
YES
grass silage, corn silage, corn cob meal, hay/straw, expeller, extraction meal (soy, rapeseed, etc.), sugar & starch industry by-products (e.g. beet pulp, molasses), potatoes (steamed), DDGs, (pelleted) compound feed
YES
Is the feed material used in pig feeding?
YES
NO
ASFV transmission is unlikely
ASFV transmission cannot be excluded
fresh forage
fodder beet
blood meal
spray-dried plasma

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blood and plasma products	n/a (2)	H & CP (1)	4°C (2) RT (1)[§]	2	Cannot be excluded
compound feed	Partly[5] (2)	H (1)	Several weeks, RT (1)	1	Unlikely

–: none; D: drying; S: ensiling; CP: chemical preservation; C: cooling; H: heat; n/a: not applicable; RT: room temperature (ca. 18–20 °C[ǂ]); OT: outdoor temperature (7.4–10.5°C[ǂ]); AH: air humidity

[1] A transmission is very unlikely if the feed has been stored secured from wild boar for more than six months

[2] Sealed airtight

[3] A transmission is very unlikely if grains with at least 86% dry matter was stored on a cool and dry place for at least 24 hours before feeding (Fischer et al. 2020)

[4] In the case of feed materials that have been stored at temperatures of 12–15°C during transport, transmission is very unlikely

[5] mechanical protection same as raw material (e.g. corn, grain)

* no data available

[ǂ] https://de.statista.com/statistik/daten/studie/914891/umfrage/durchschnittstemperatur-in-deutschland/

[§] Kersten et al. 2010

[§] Fischer et al. 2021

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