SPN annual plenary project meeting 2022

Niels Bastian Kristensen

Skejby, November 17, 2022

STØTTET AF
Mælkeafgiftsfonden
SEGES INNOVATION

Annual plenary project meeting

Sunde og produktive nykælvere

Agro Food Park 15, 8200 Aarhus N
Meeting room 3
November 17, 2022, 1030 – 1600 h

Participants, Institution:

Bekzod Khakimov, KU
Paraskevi Tsermoula, KU

Mogens Larsen, AU
Milani Bhagya Samarasinghe, AU

Ditte Kalms, SEGES
Thorben Krüger, SEGES
Mogens Vestergaard, SEGES/AU
Niels Bastian Kristensen, SEGES

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Agenda

Time approx.	Topic	Presenters
1030	Who we are and why we are here	All
1045	The SPN project, a brief introduction	Niels
1100	Status and data WP3	Bekzod & Paraskevi
1130	Status and data WP2	Mogens L
1200	Lunch	
1245	Status and data WP1	Niels
1315	SPN post doc, idea and plan	Bhagya
1330	The twin problem & calves	Ditte, Thorben & Niels
1345	DKC trial 2023	Niels
1400	WP coordination 2023	All
1500	Project dissemination	All
1545	Any other business	

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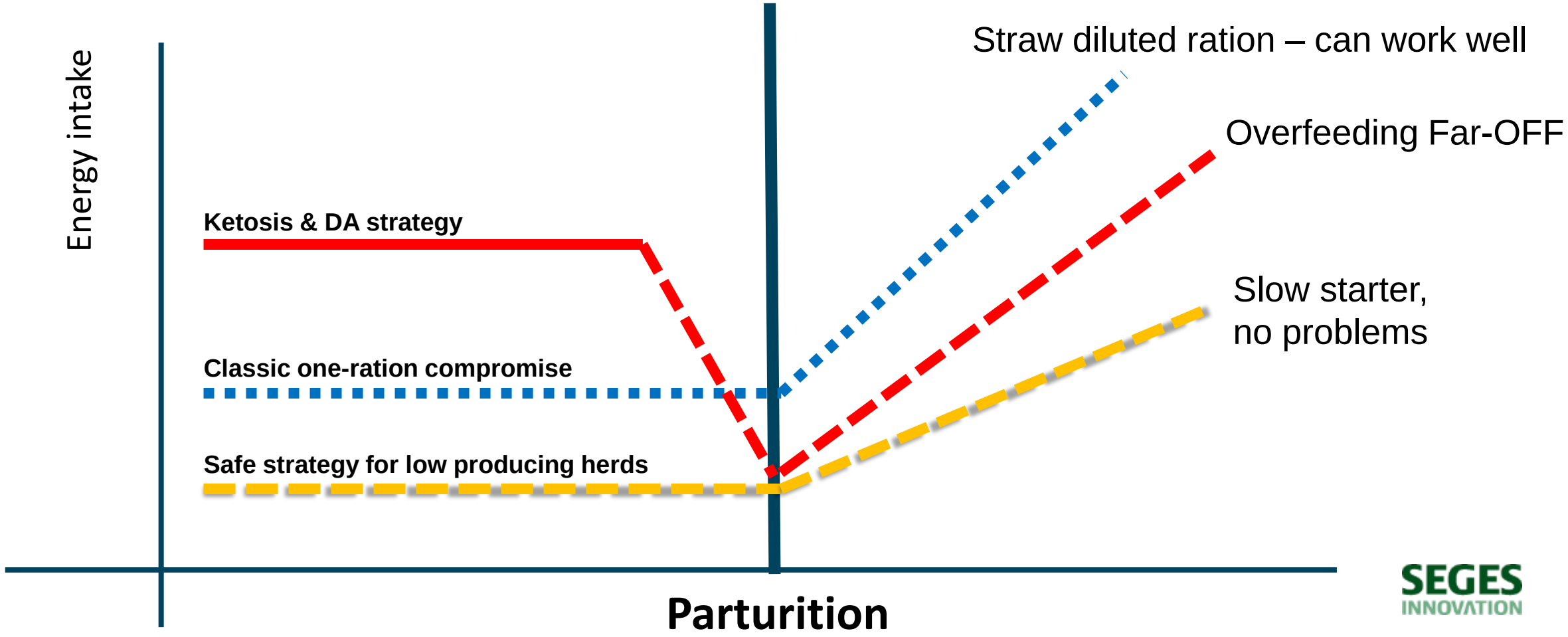
Dry cow feeding map – all evaluations of nutrition related transition cow problems STARTS HERE!



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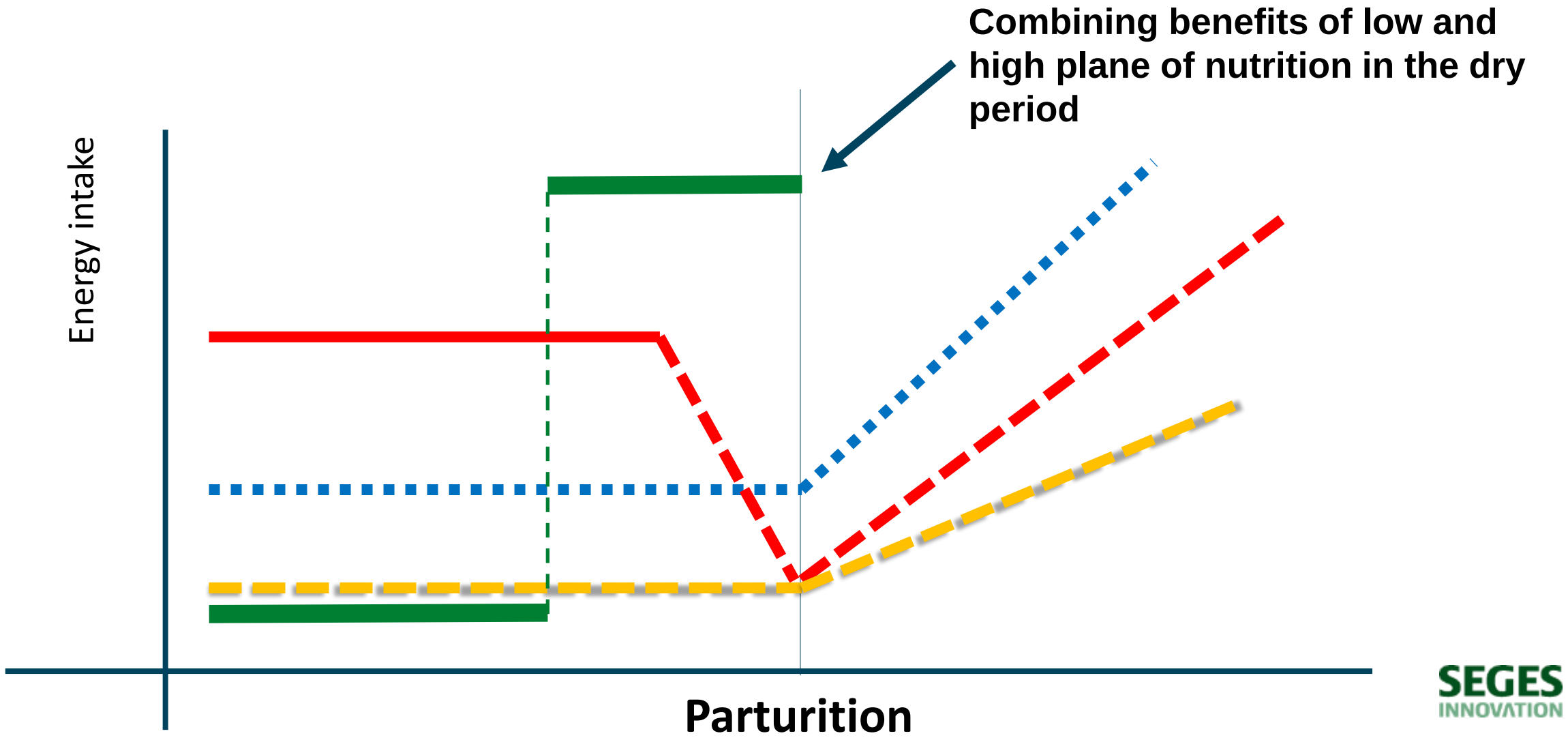
Phase feeding is cutting the Gordian knot (intake problem of dry cows)



The fundamental phase feeding recipe is simple, however, DETAILS and PRACTICALITIES MATTERS

Far-OFF

Ration-controlled low plane of nutrition

Ketogenic grass based ration

Simple mineral supplementation

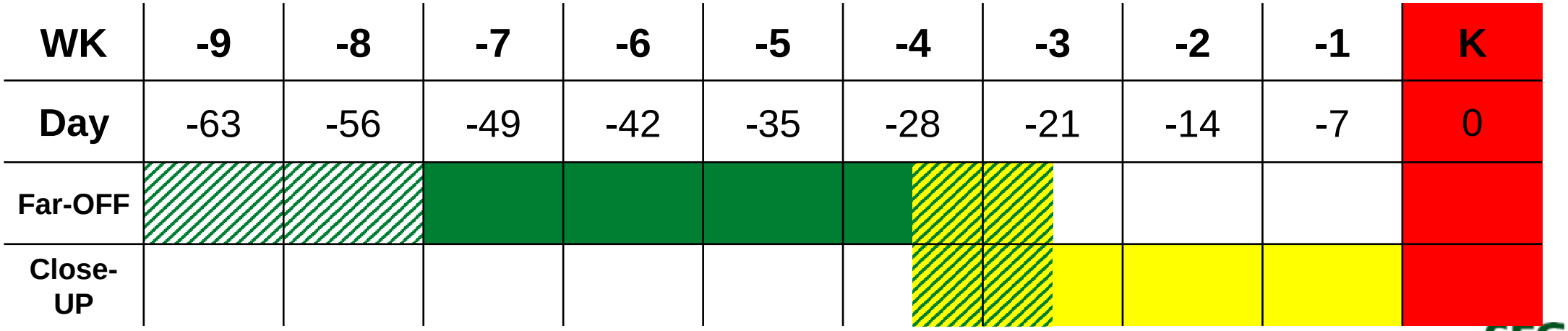
Close-UP

High plane of nutrition – typical corn silage based

High AAT (+1000 g/dag)

Need milk fever prevention e.g. by acidification, negative DCAD

Supplement Mg, Na and vitamin E



From dry off to calving

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WP 1 trials 2021-2022

20221-1: DKC Low density diet until calving compared with traditional phase feeding, diffferent acidification strategies.

2021-2: Effect of light in Close-UP period

2022-1: Grass fiber and delayed transition to lactation TMR

2022-2: Extra AAT in Close-UP period and 2 vs 3 wk Close-UP

2022-3: Small attempts to feed-compensate twinpregnant cows

2022-4: In preparation, fresh cow concentrate

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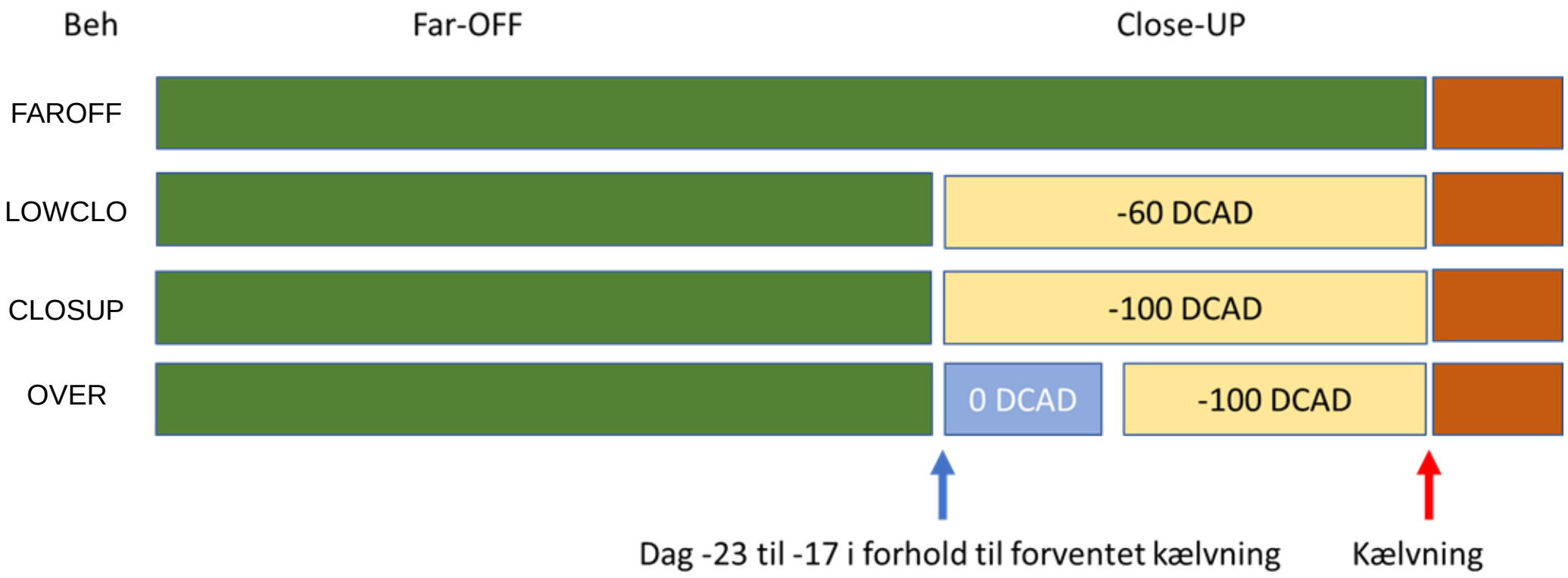
Treatments 2021



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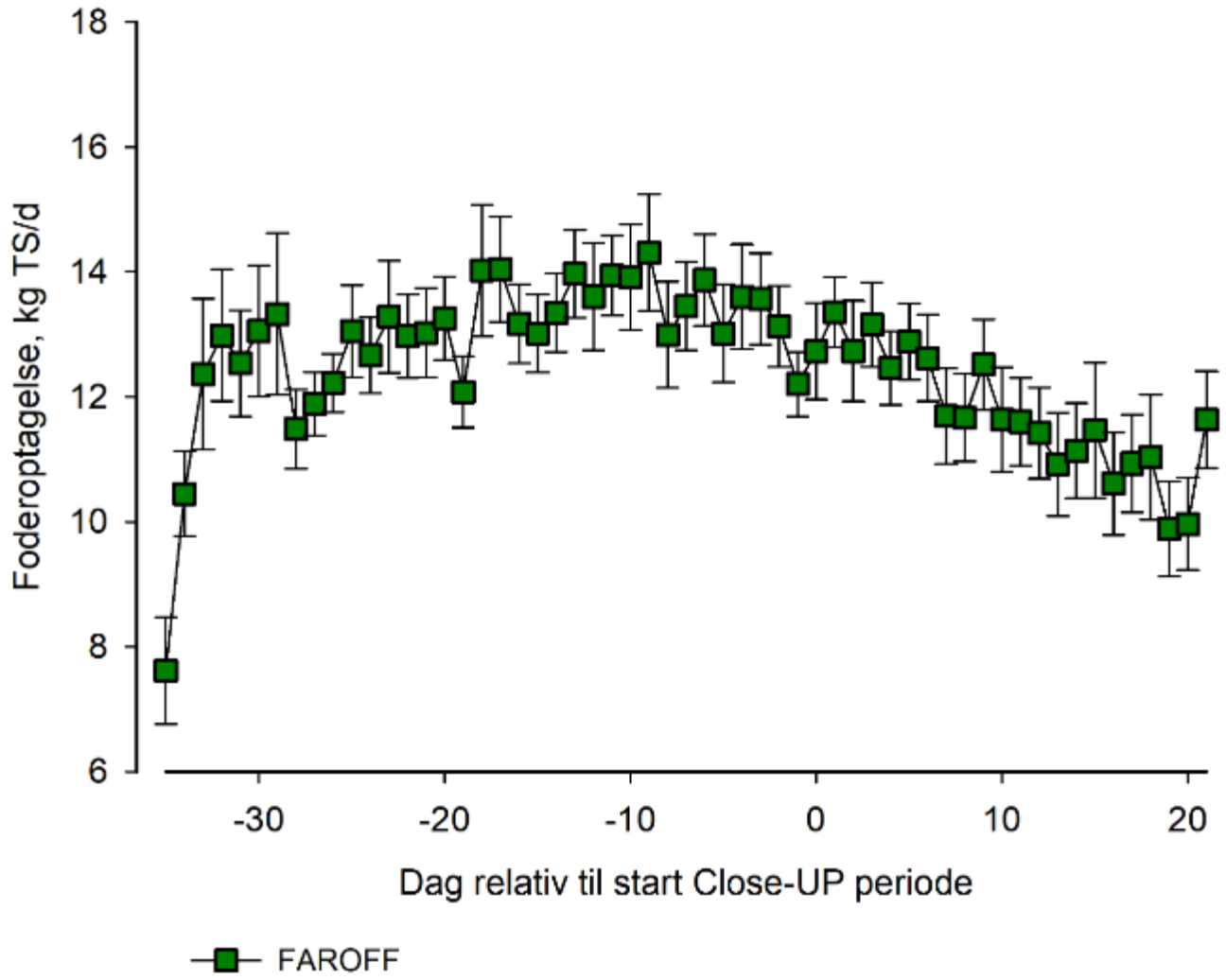
Feed intake (kg DM/d) relative to start Close-UP period



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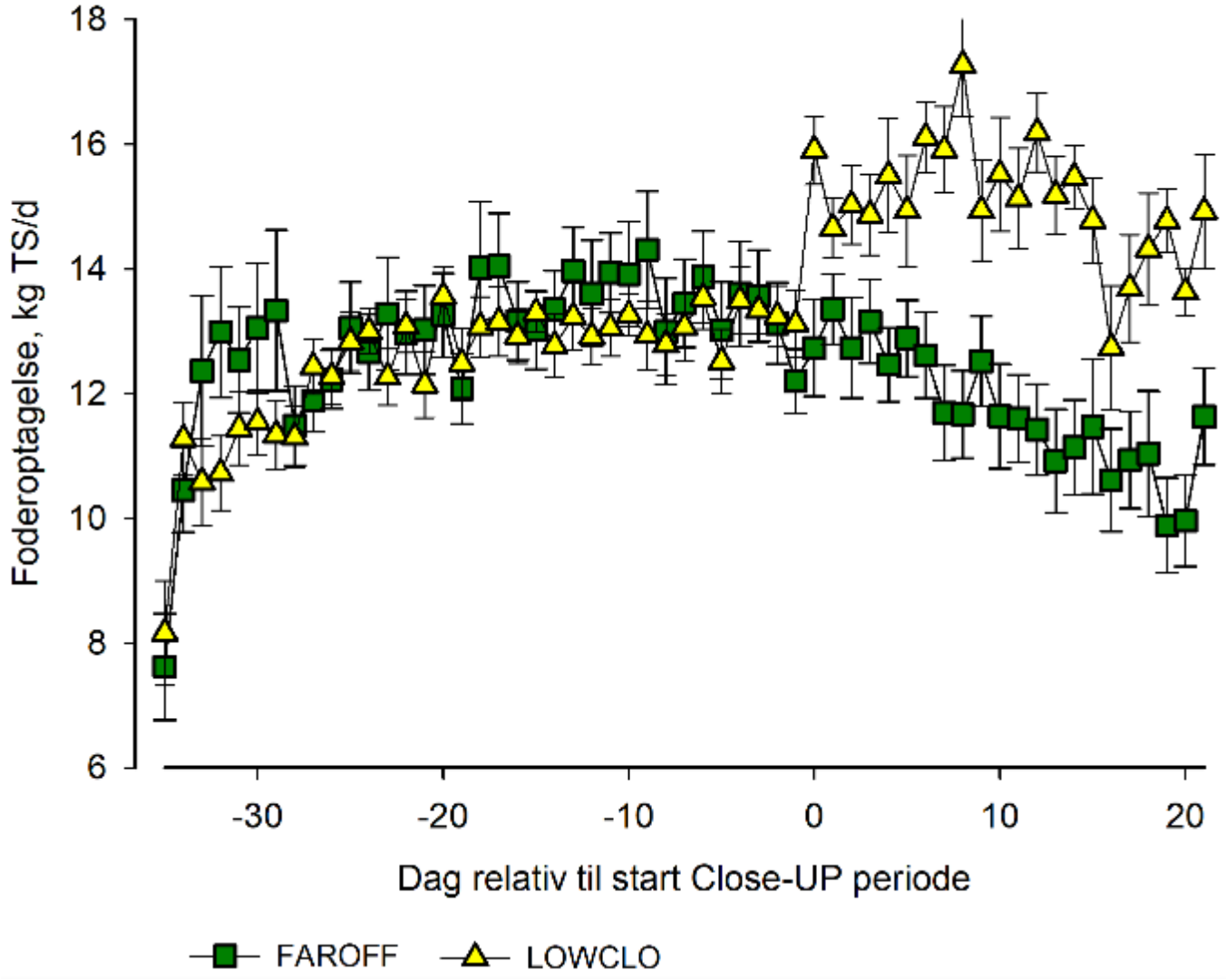

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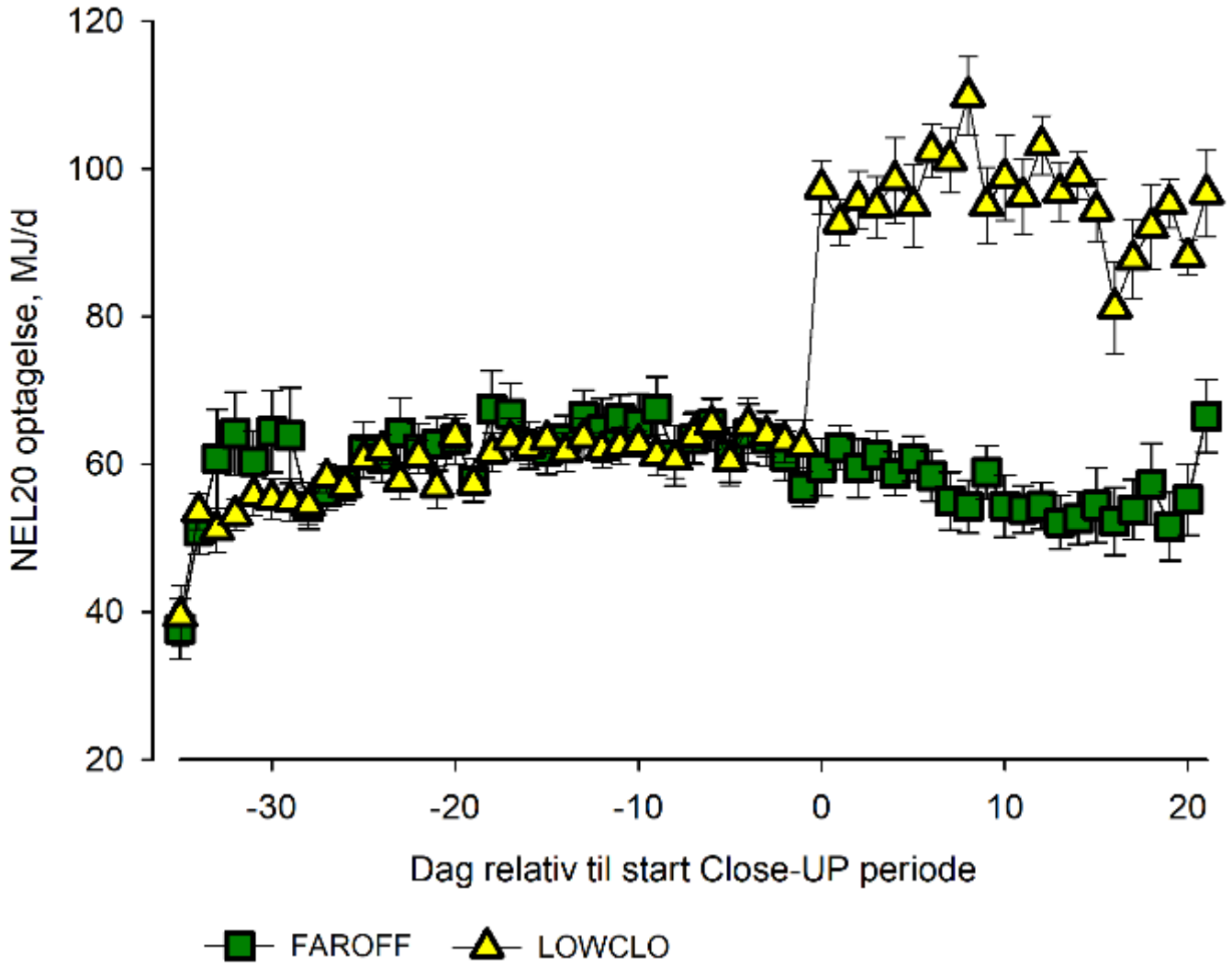
NEL20 (NorFor) intake MJ/d



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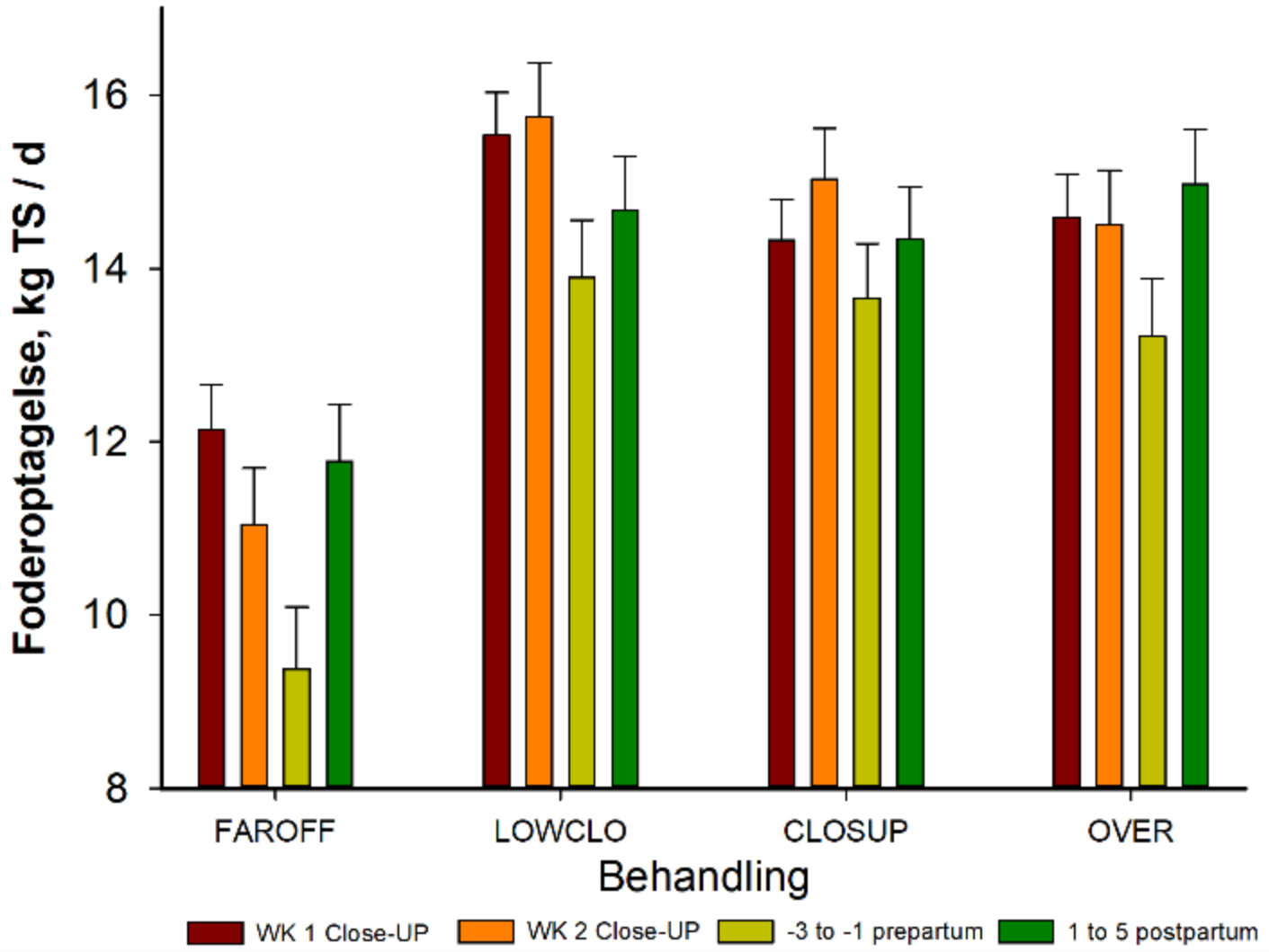
Feed intake (kg DM/d) Close-UP and fresh



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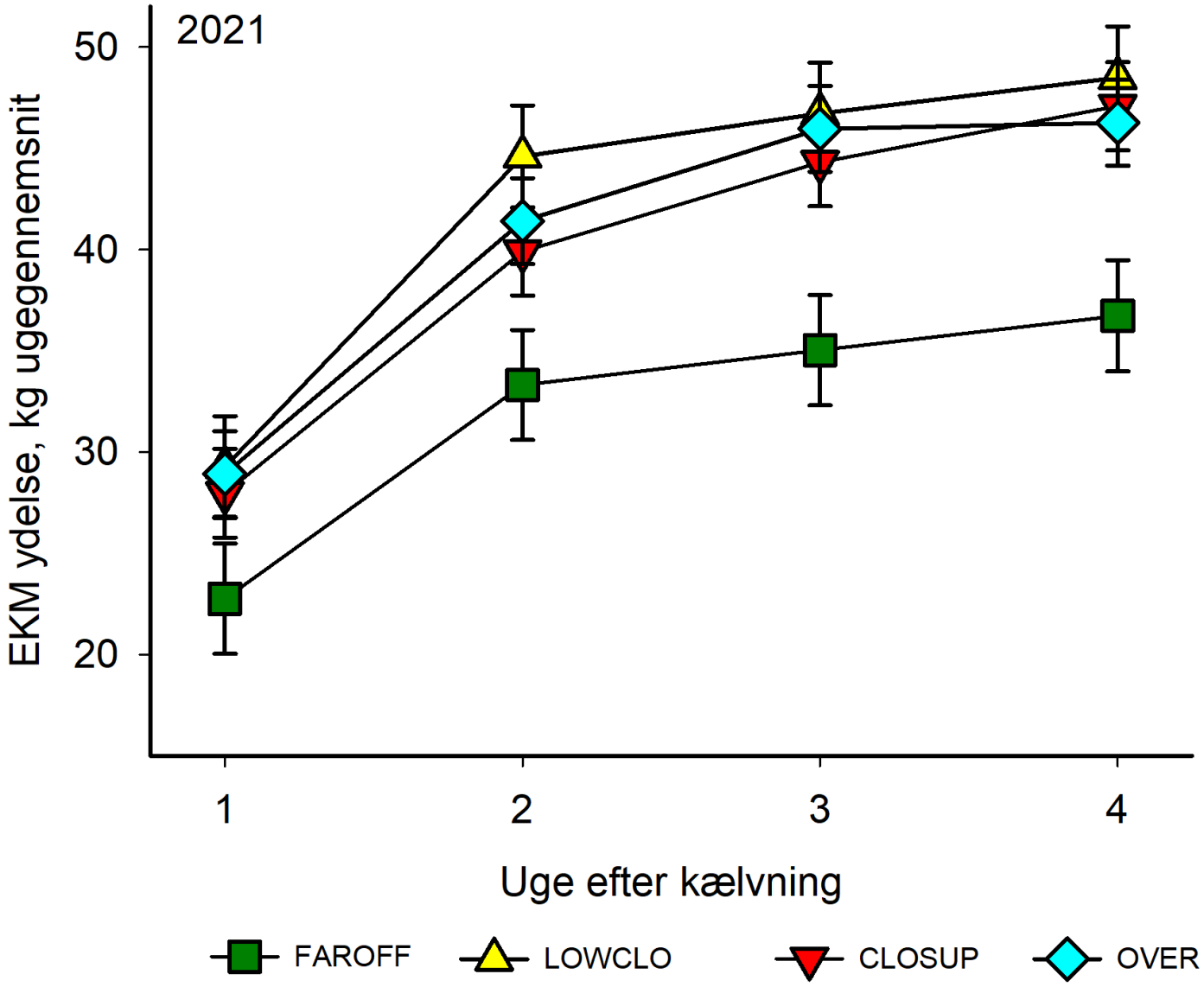
2021 opstart



Why do we often hear about insufficient volume and quality of colostrum in the fall? Can we compensate with artificial light

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With LEDs we can provide +1000 lux at relatively low cost

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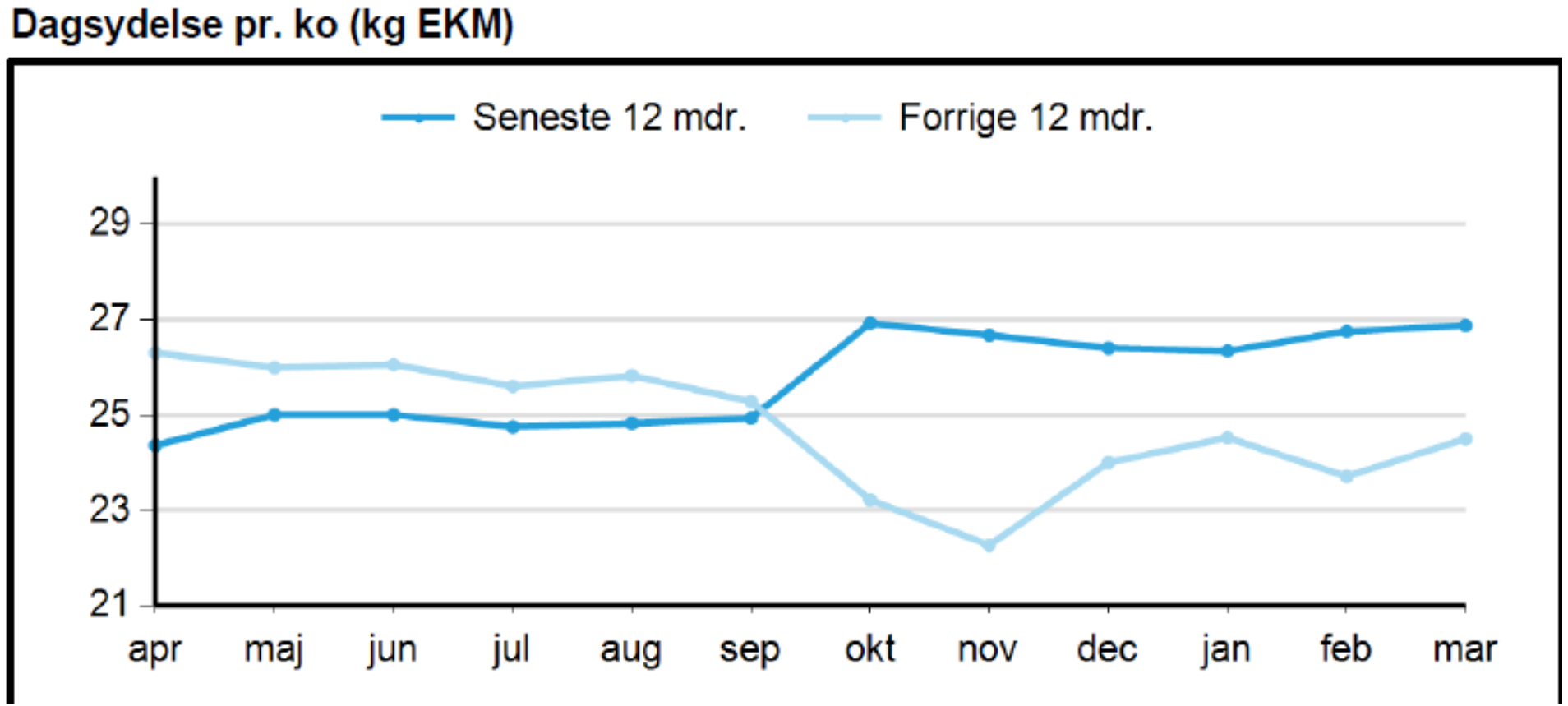
Example from herd suffering from fall induced yield depression



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Trial initiated fall 2021

Cross over experiment with two herds with complete separate housing of Far-OFF and Close-UP cows

Control – Light – Control – Light

Light – Control – Light – Control

Data from 63 calvings

Reponse parameters: Colostrum volume, colostrum quality, milk in early lactation

VERY LITTLE IF ANY RESPONSE

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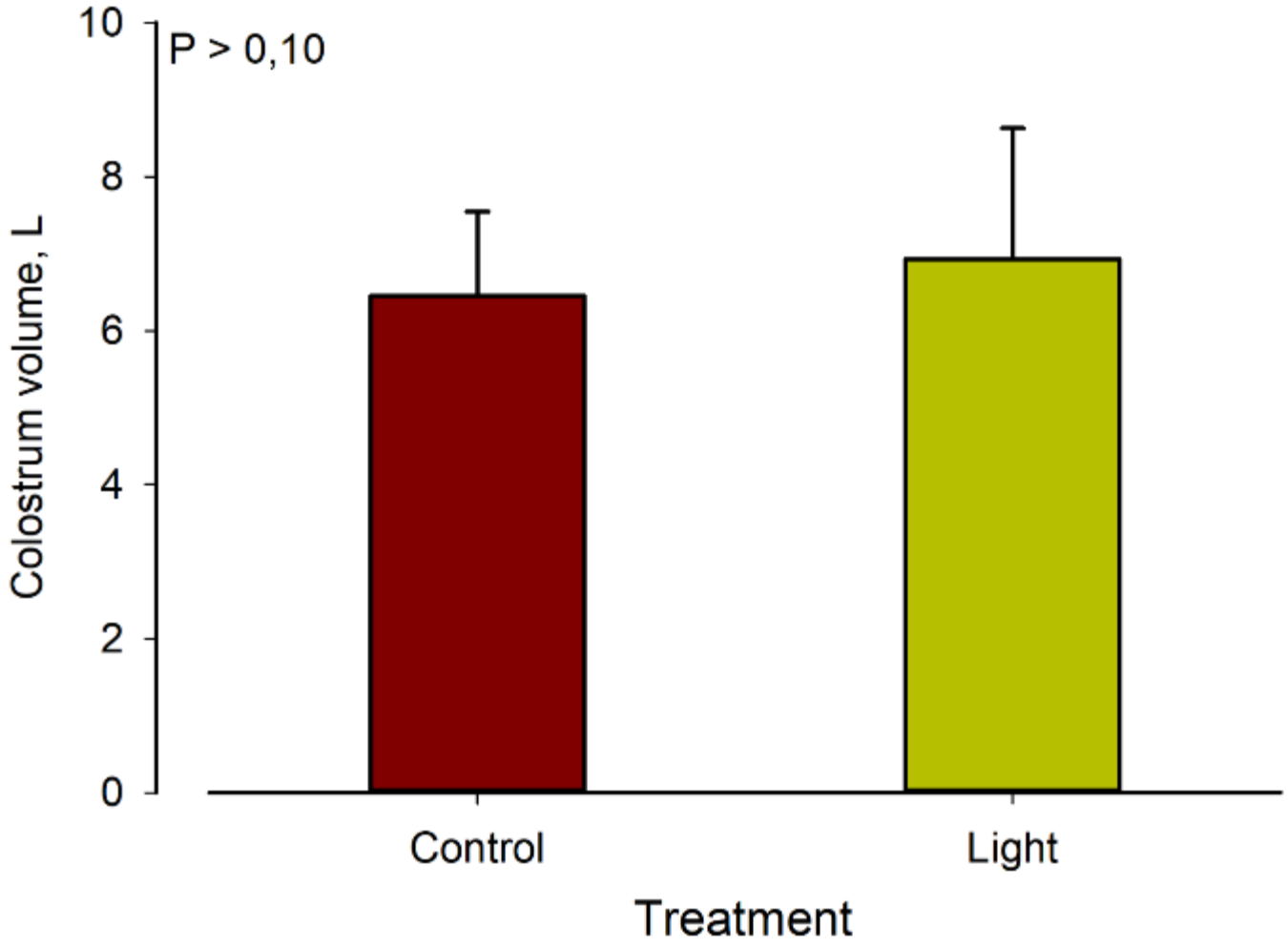

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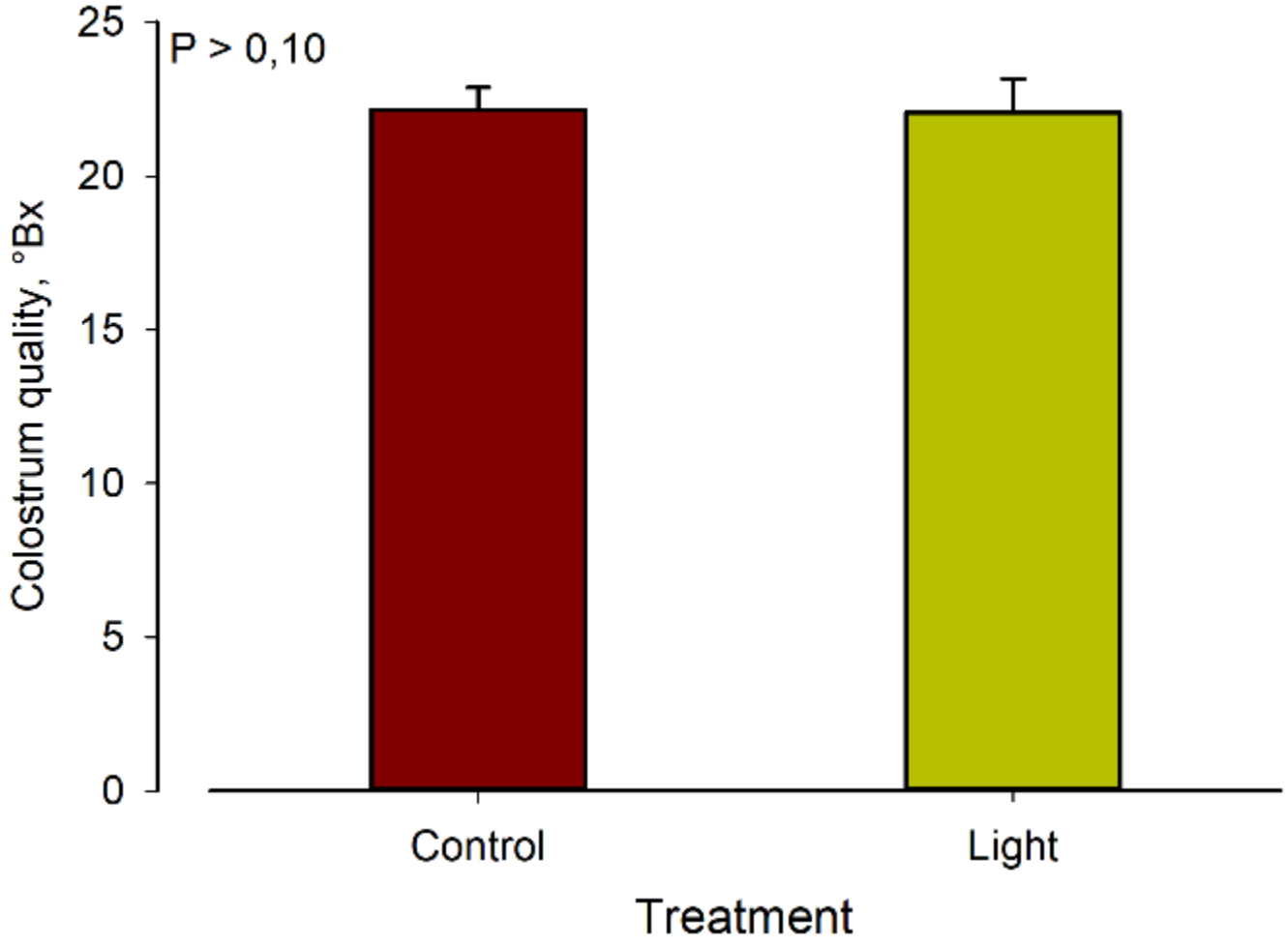

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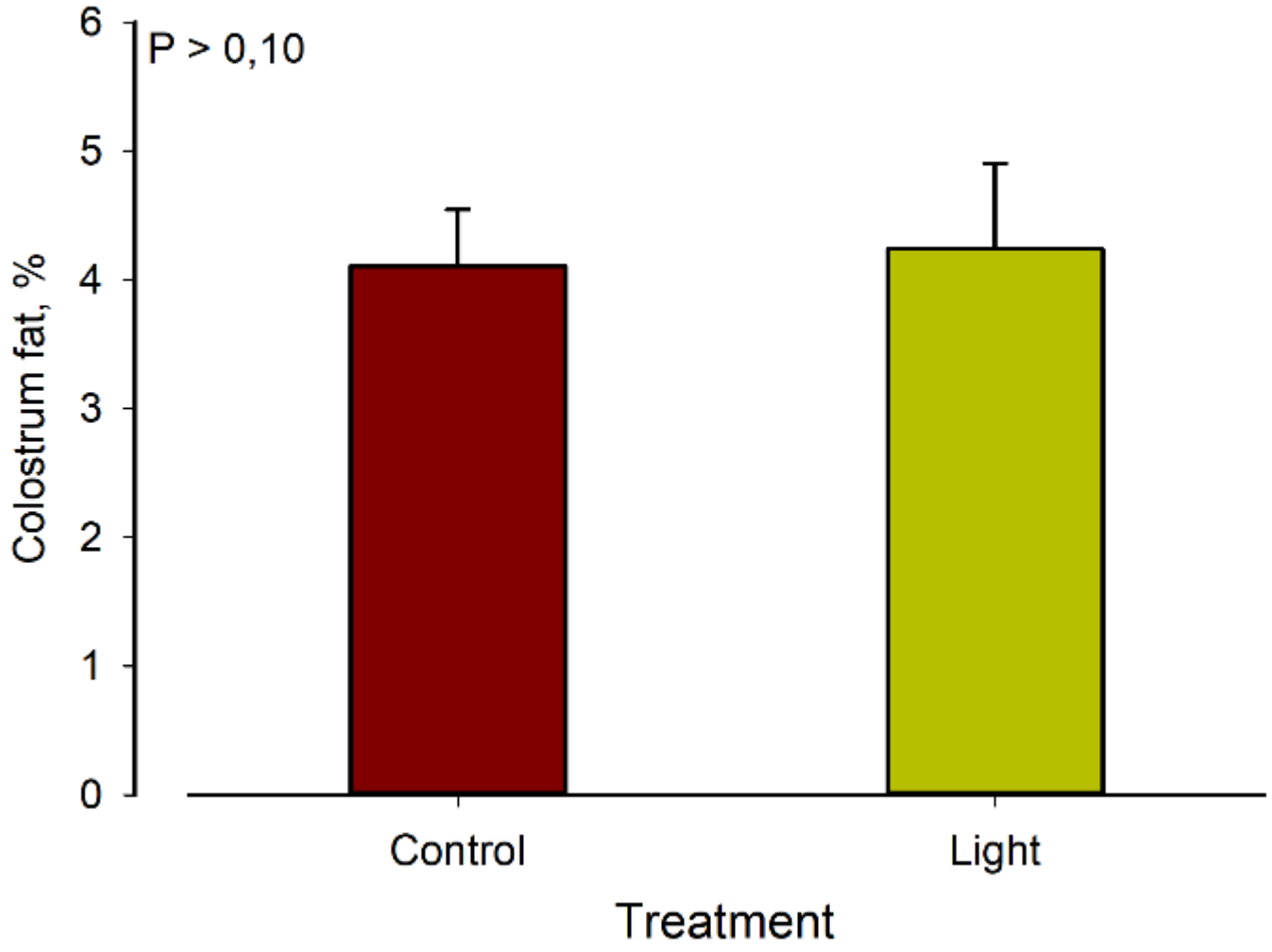

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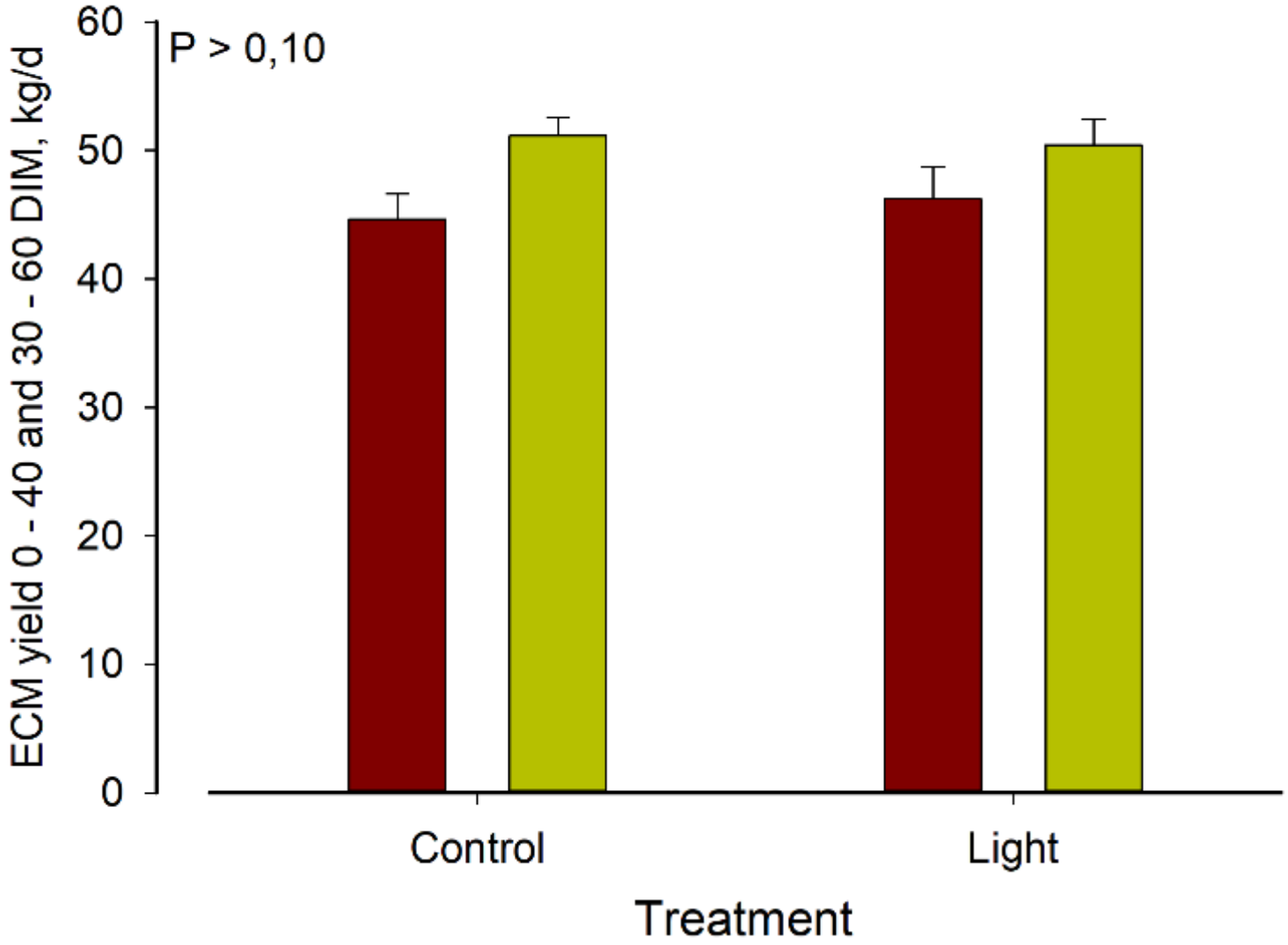
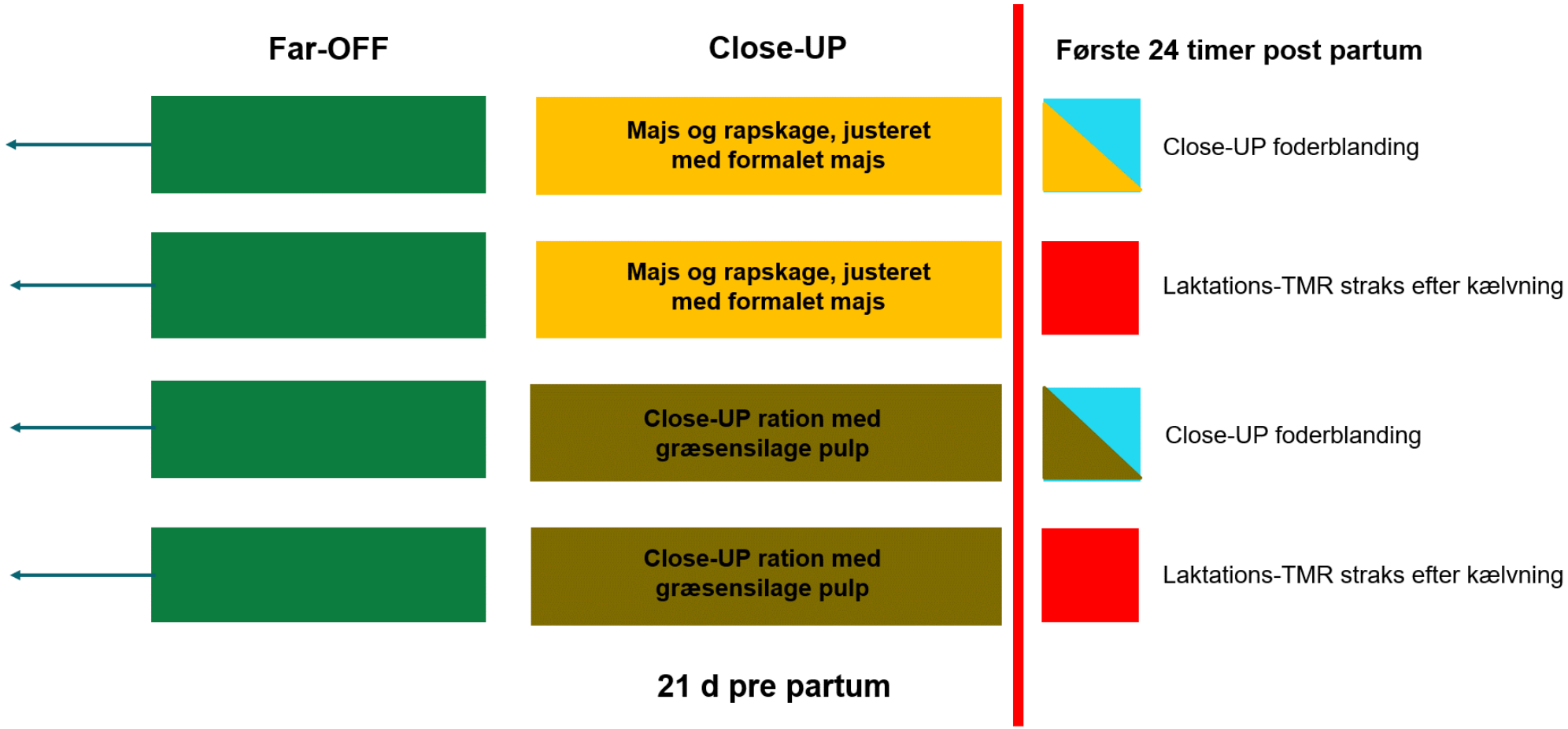

P > 0,10
ECM yield 0 - 40 and 30 - 60 DIM, kg/d
60
50
40
30
20
10
0
Control
Light
Treatment

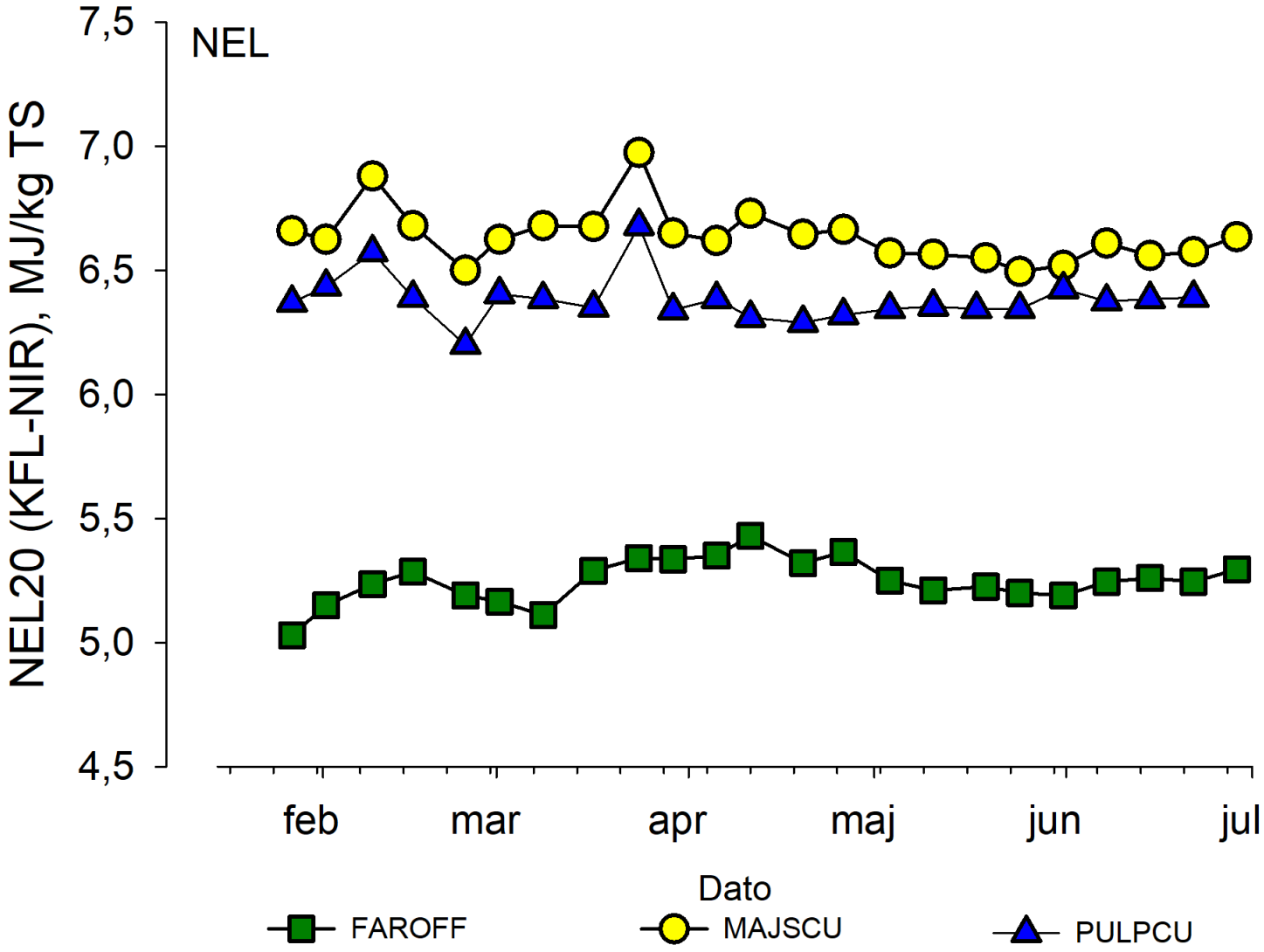
2022-1 - DKC

Forsøgsbehandlinger 2022 – del 1



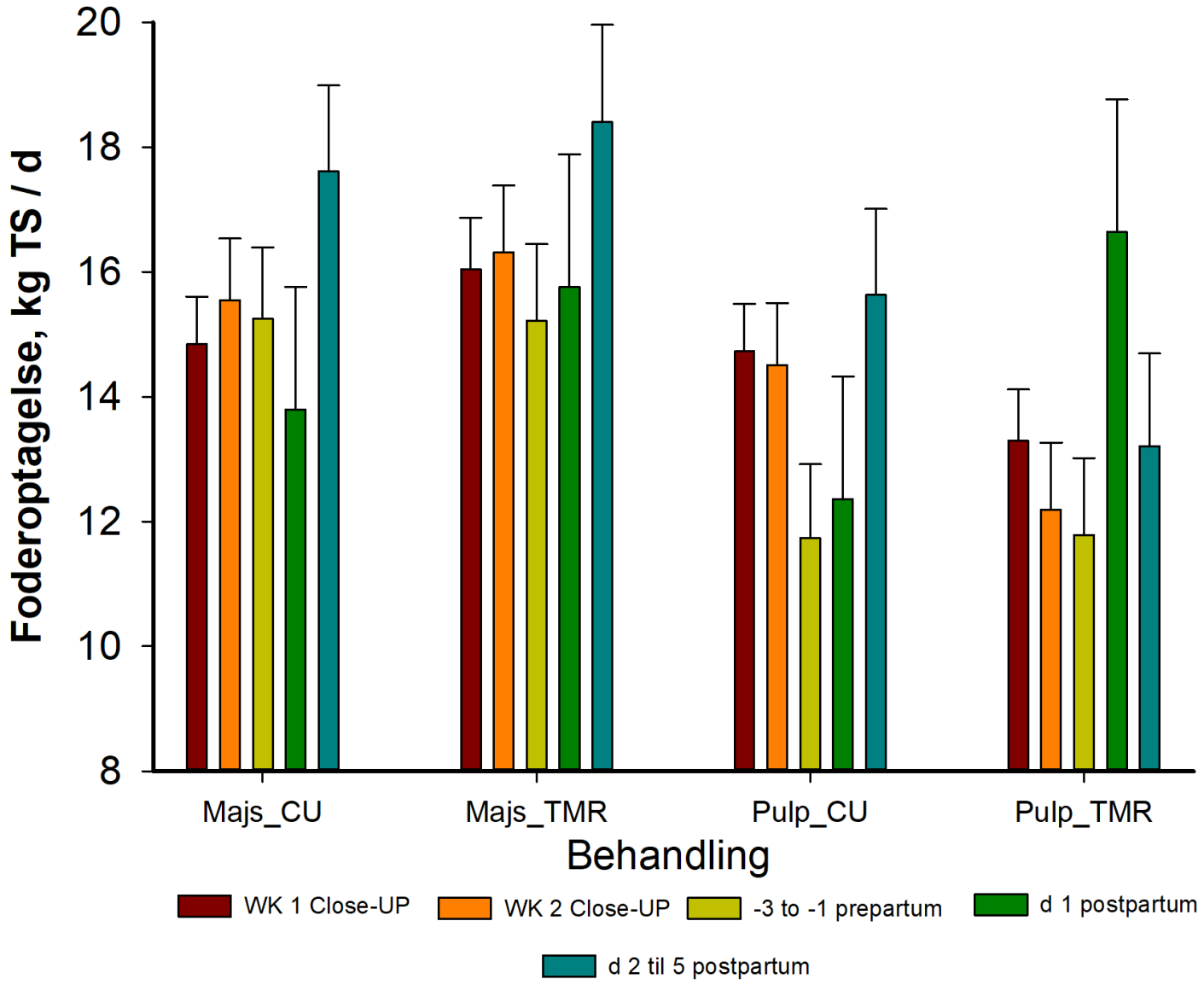
SEGES INNOVATION

Rations sampled two times per week



SEGES INNOVATION

Grass fiber and 24 h delayed TMR



Twinning = 0
Milk fever = 0

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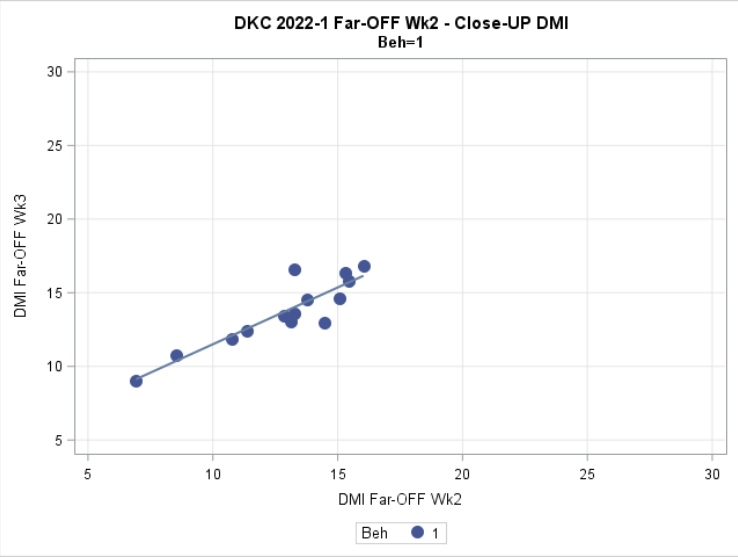
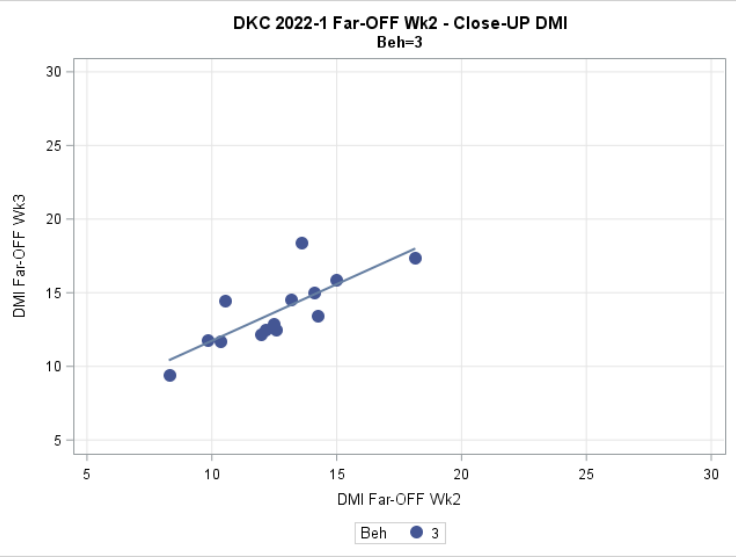
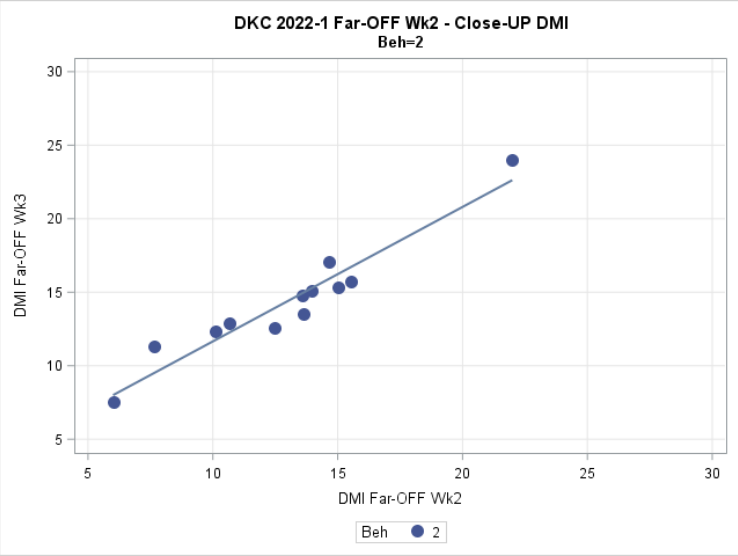
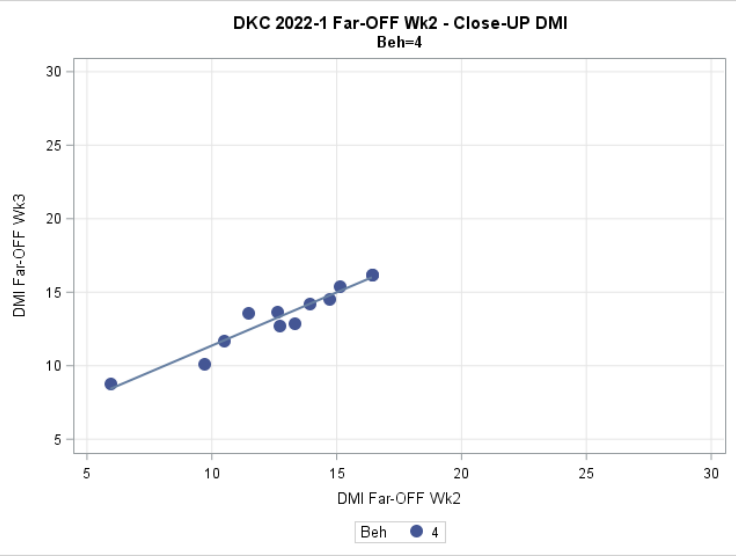
Feed intake consistent week to week within phase



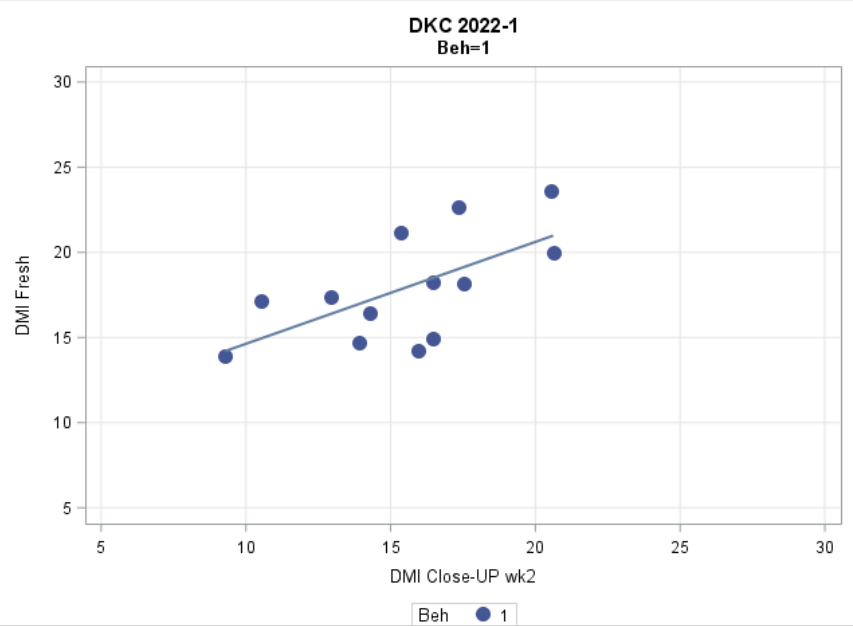


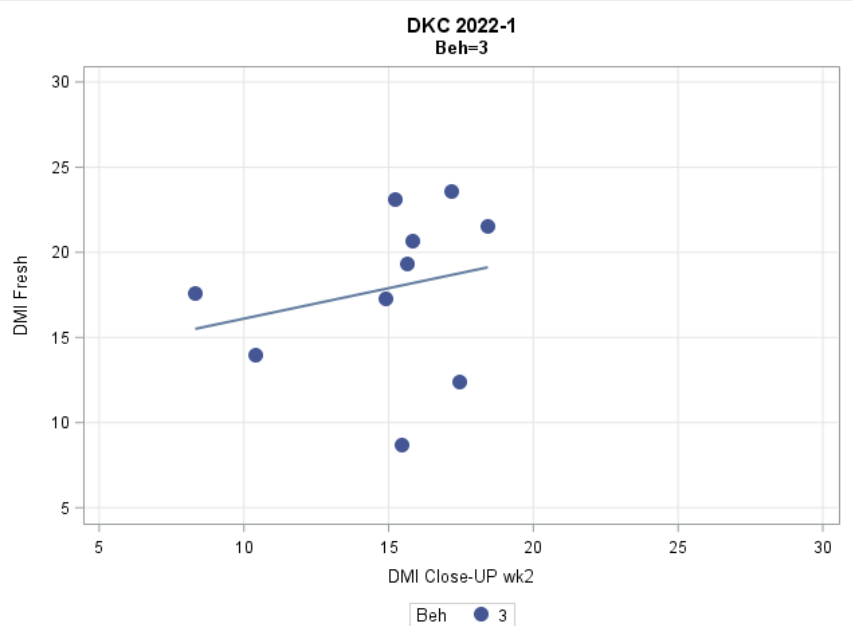


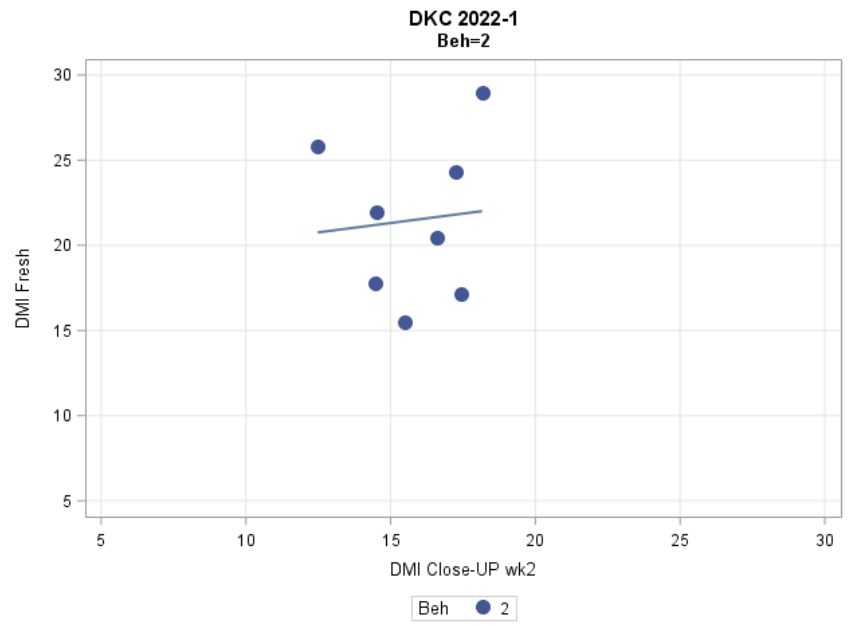


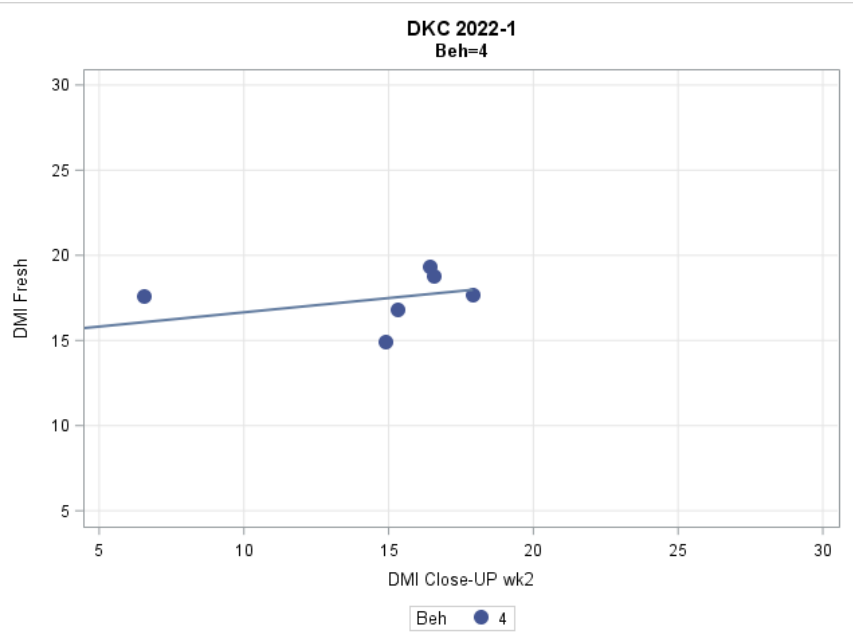
SEGES INNOVATION

Noisy data Close-UP wk2 – Fresh-DMI



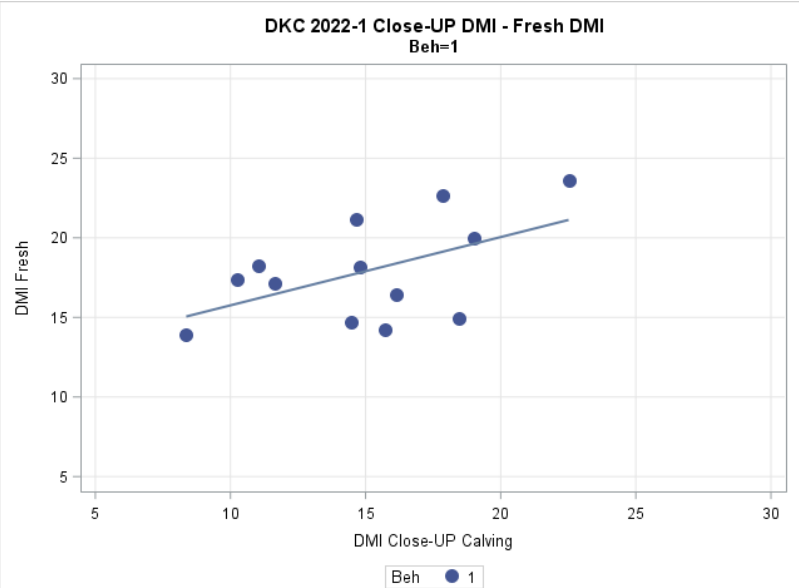


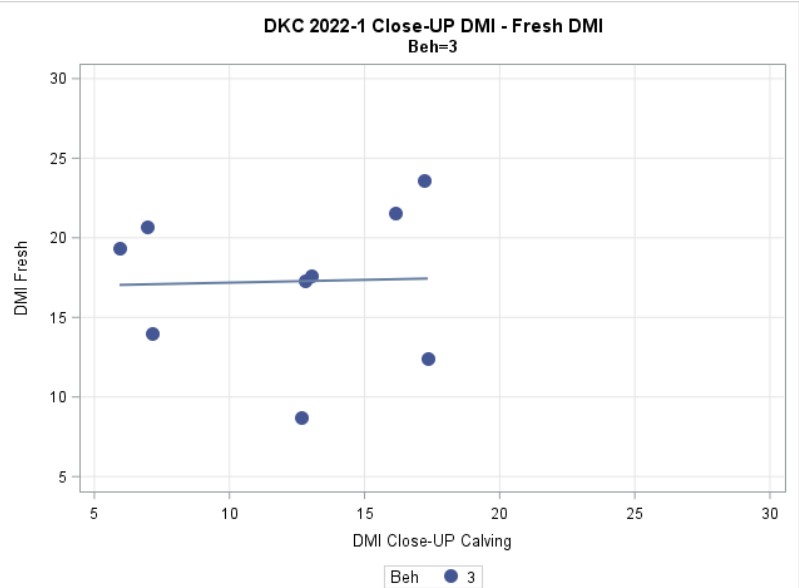


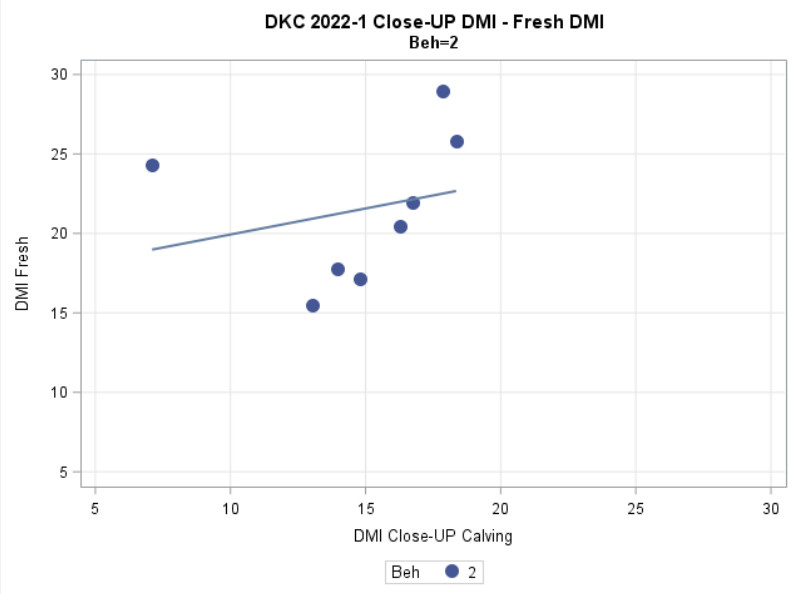


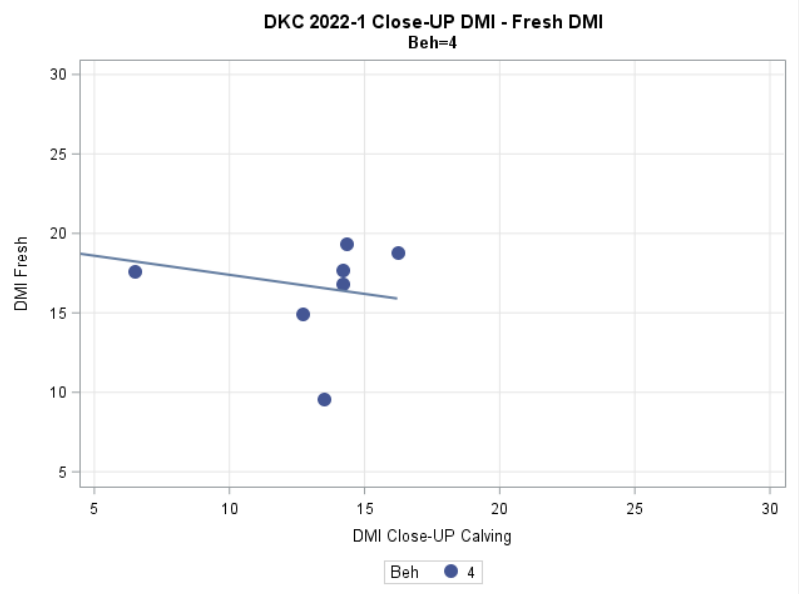
SEGES INNOVATION

Phase shift or calving break correlations

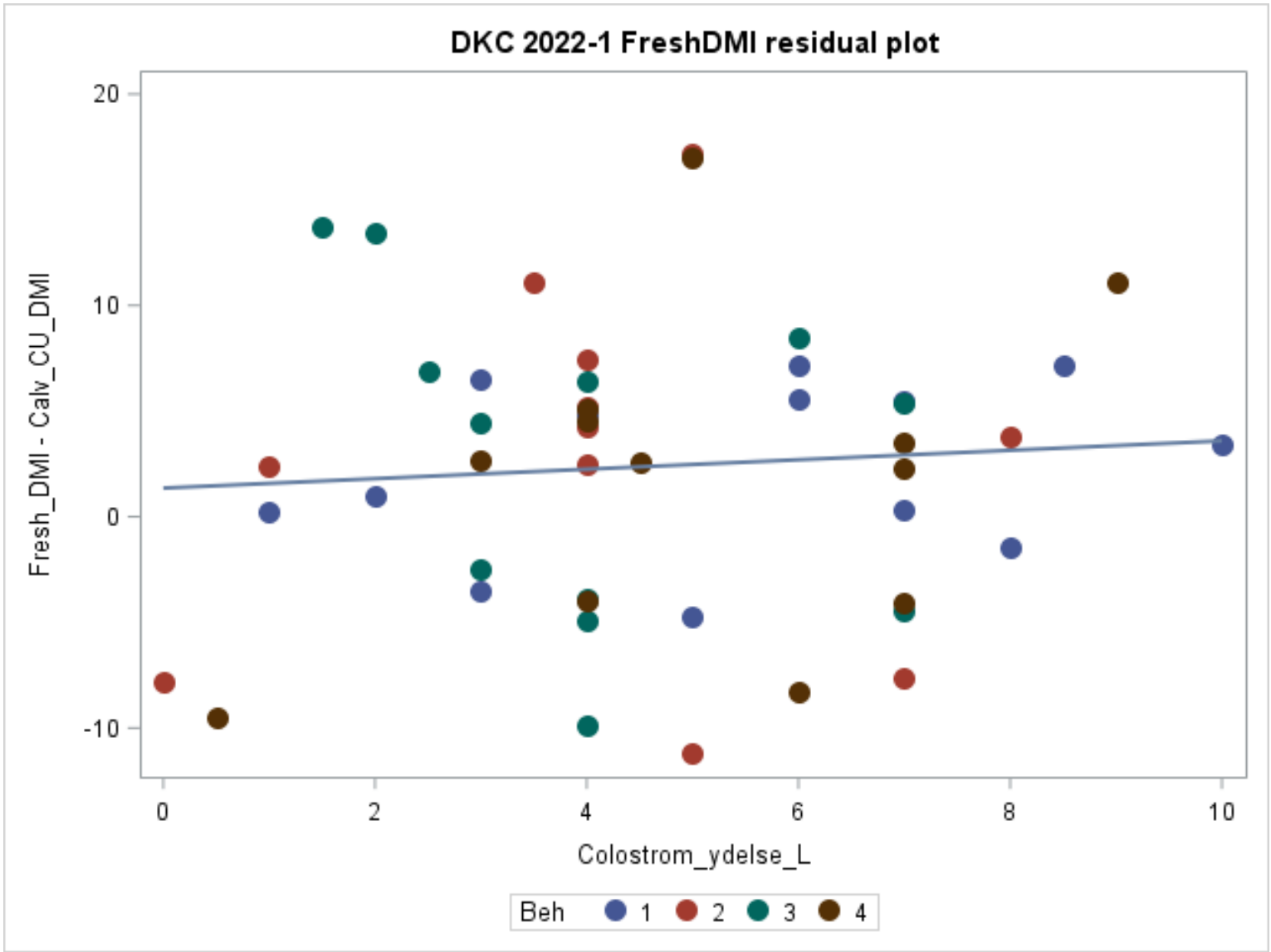






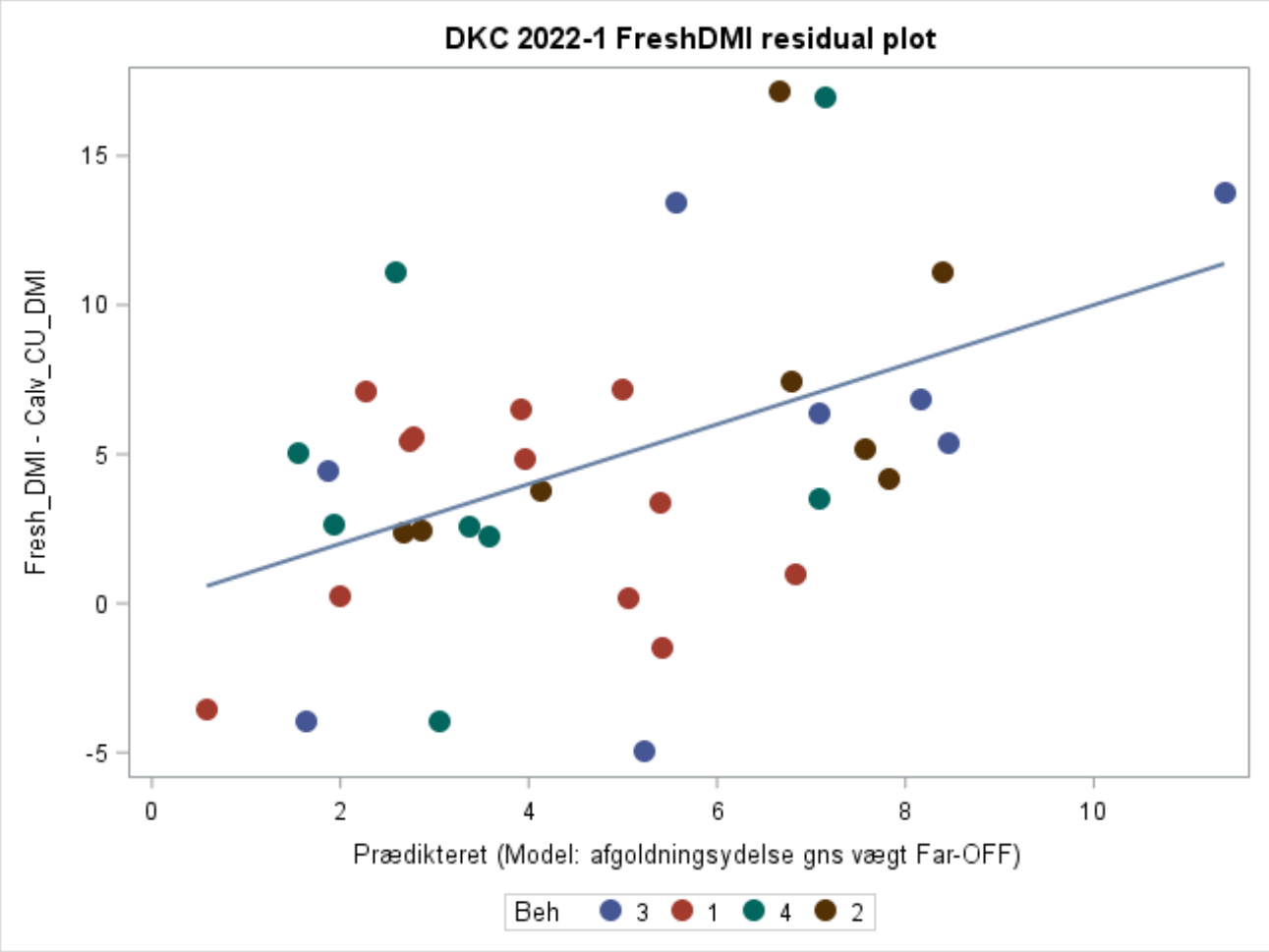


SEGES INNOVATION



SEGES INNOVATION

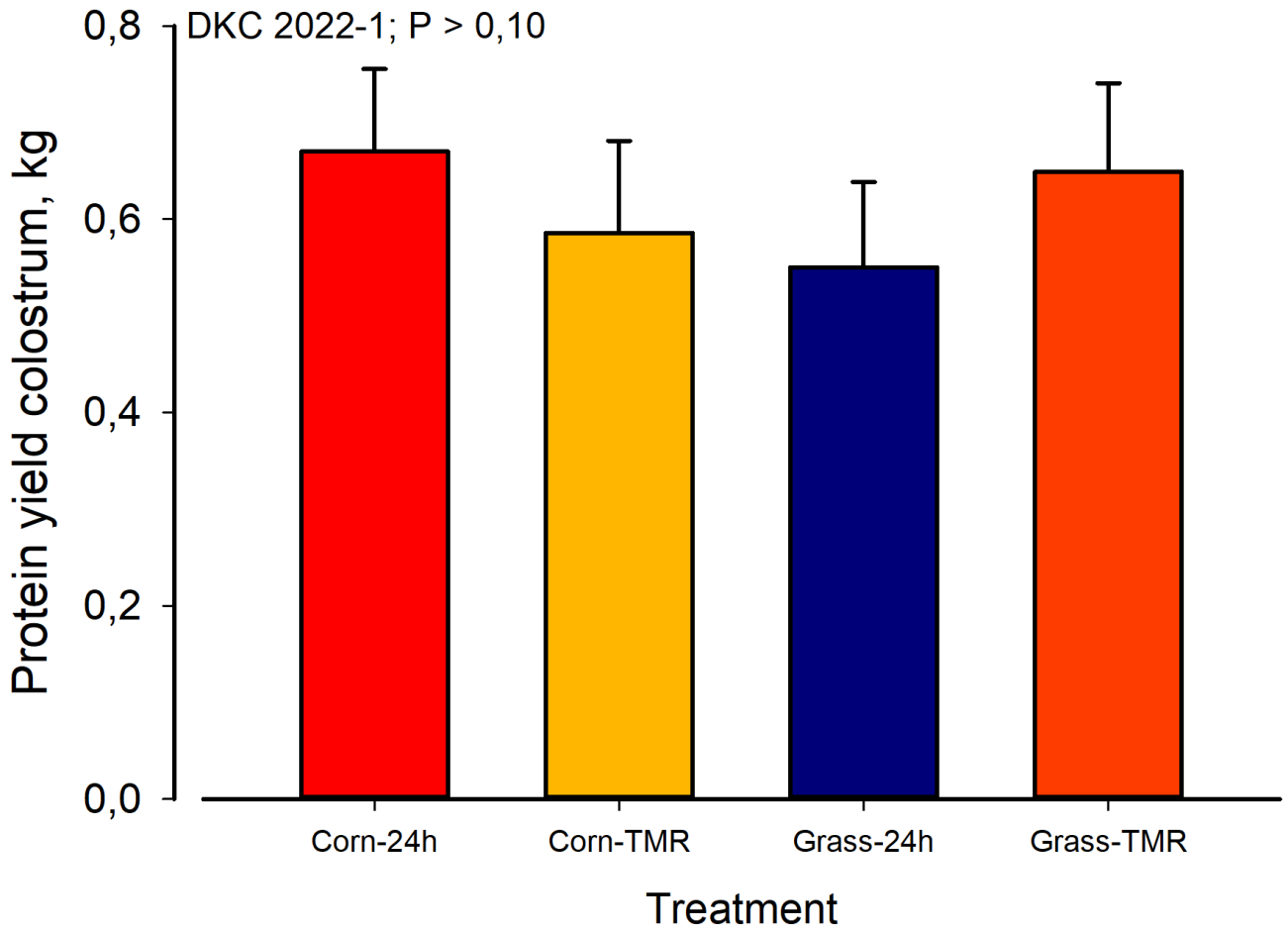
Last EKM and weight - Fresh DMI – Close-UP calving DMI



Solution for Fixed Effects					
Effect	Estimate	Standard Error	DF	t Value	Pr > |t|
Intercept	-30.2485	13.9350	33	-2.17	0.0372
afgoldekm	0.4131	0.1425	33	2.90	0.0066
meanvaegt_faroff	0.03209	0.01648	33	1.95	0.0600

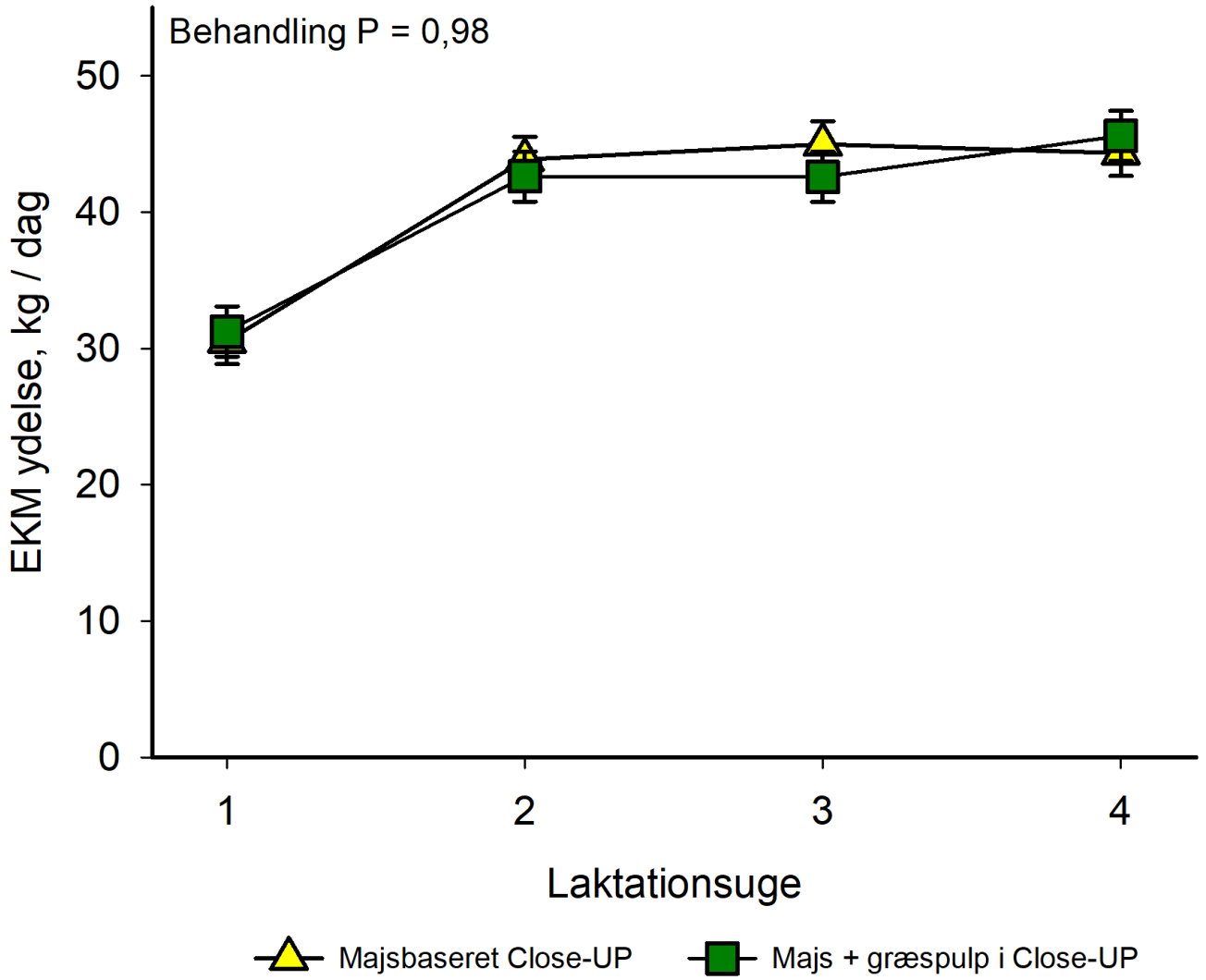
SEGES INNOVATION

No effect on colostrum volume or quality



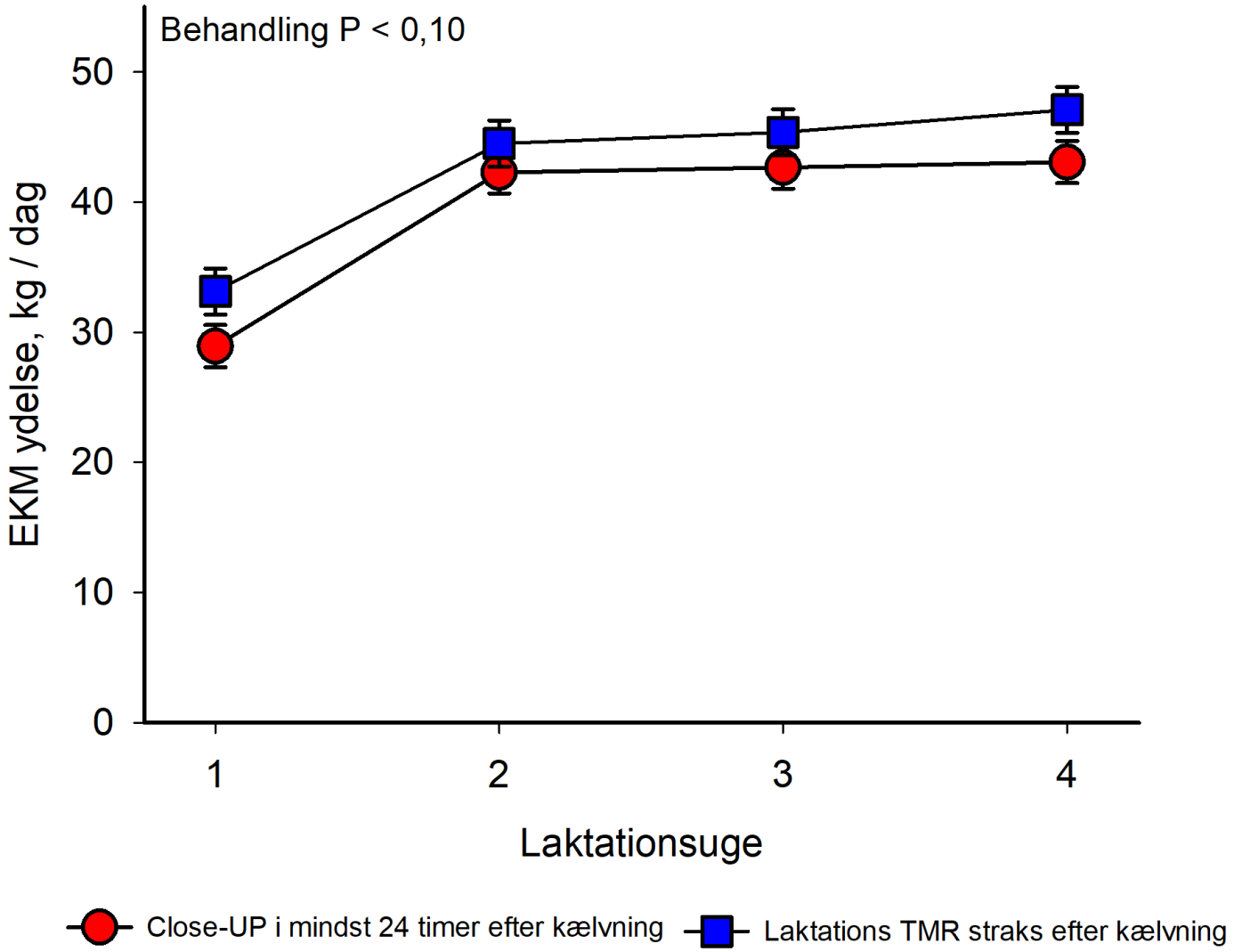
SEGES INNOVATION

No effect of grass fiber on production 0-30 DIM



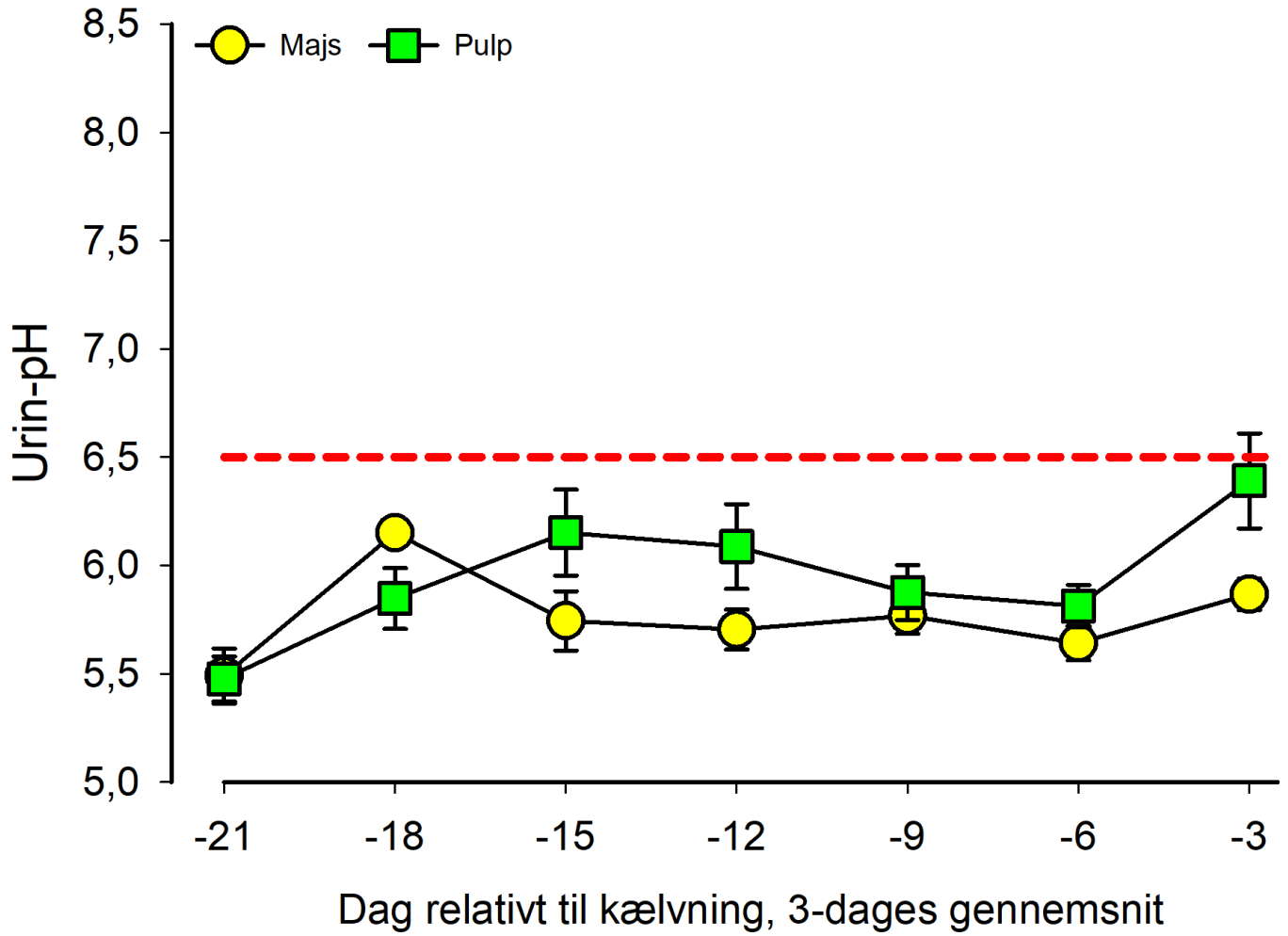
SEGES INNOVATION

Maybe effect of feeding first 24 h post partum



SEGES INNOVATION

Acidification



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Conclusions 2022-1

Possible to use grass fiber in Close-UP ration and maintain acidification and colostrum properties

Fill of grass fiber appears to depress feed intake of some cows in Close-UP period

Feeding first 24 h post partum tend to affect milk yield 0-30 DIM

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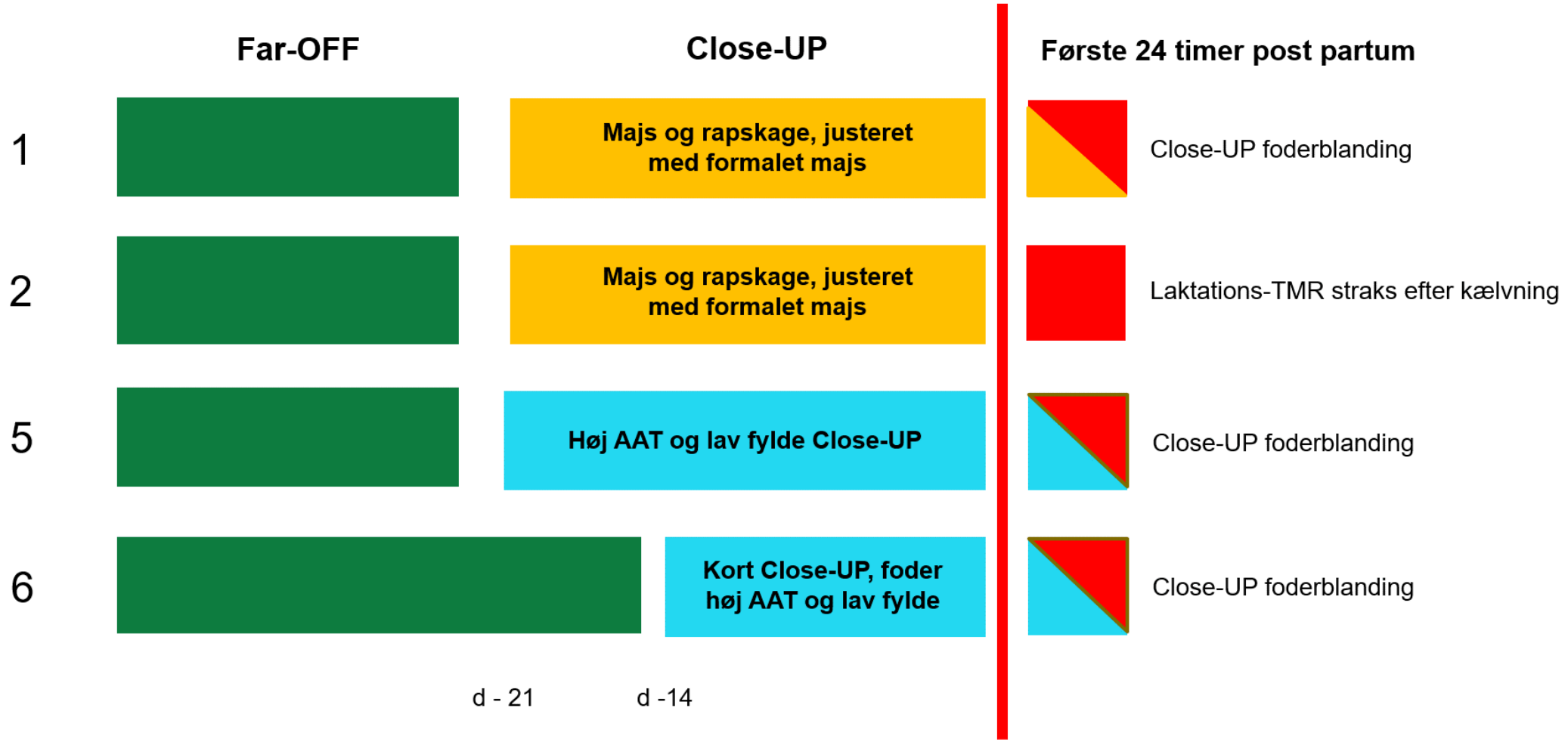
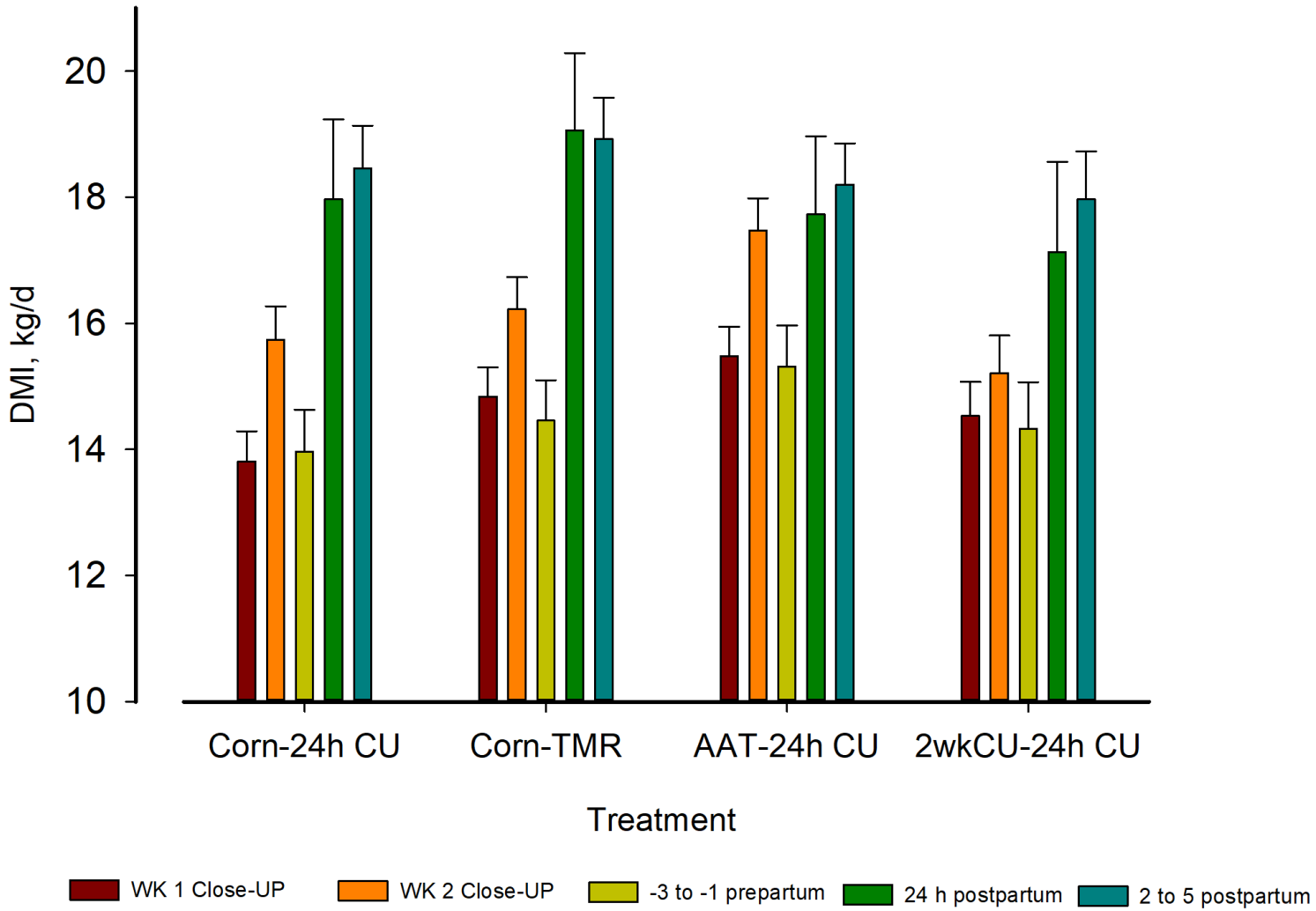
2022-2 DKC

Forsøgsbehandlinger 2022 – del 2



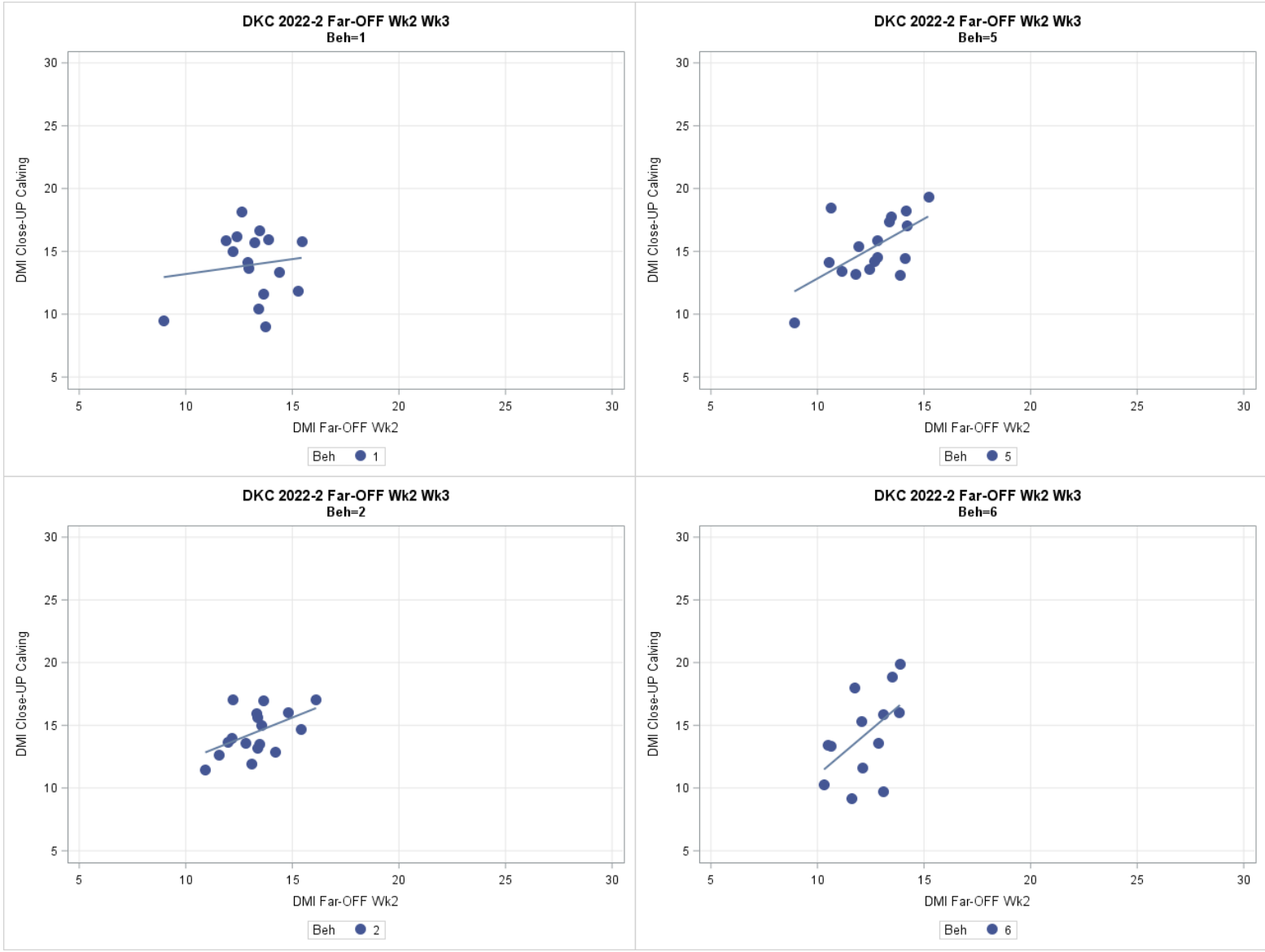
-100 CAB

DKC 2022-2



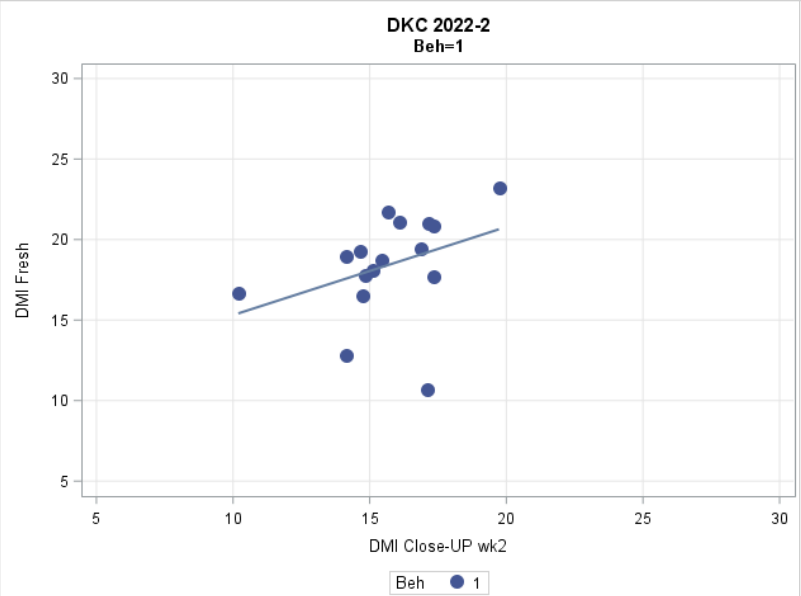
SEGES INNOVATION

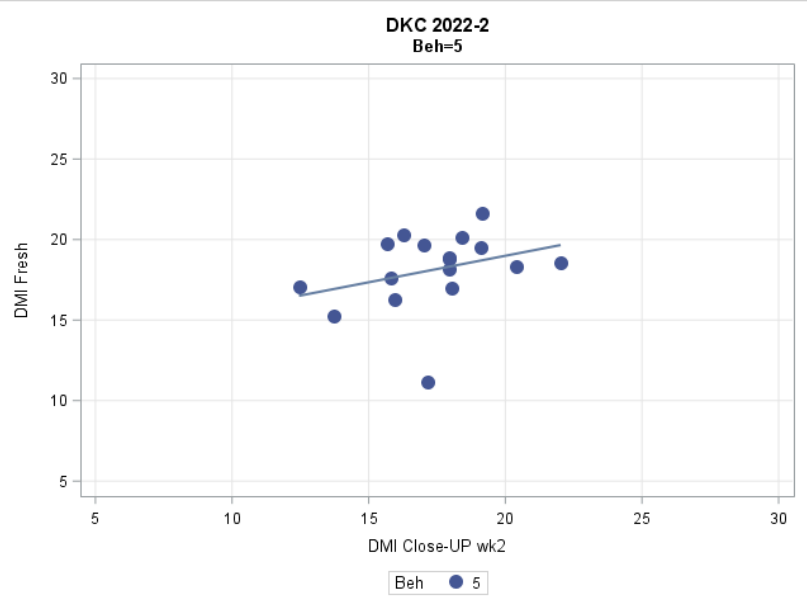
DKC 2022-2 DMI Far-OFF wk 2 wk 3

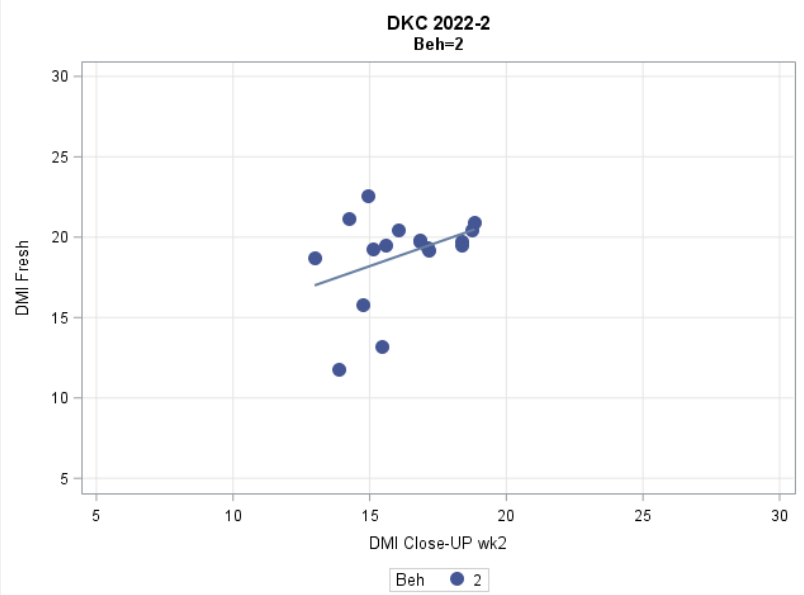


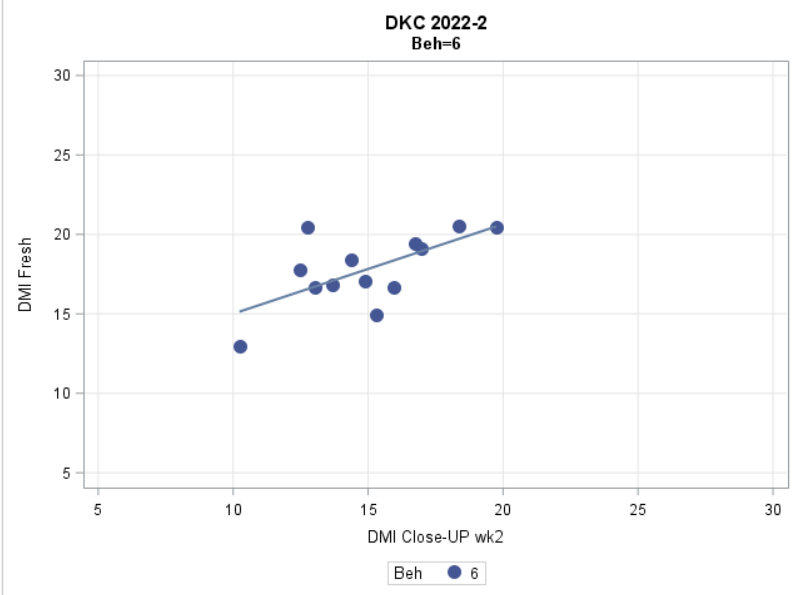
SEGES INNOVATION

DKC 2022-2 DMI Close-UP - Fresh



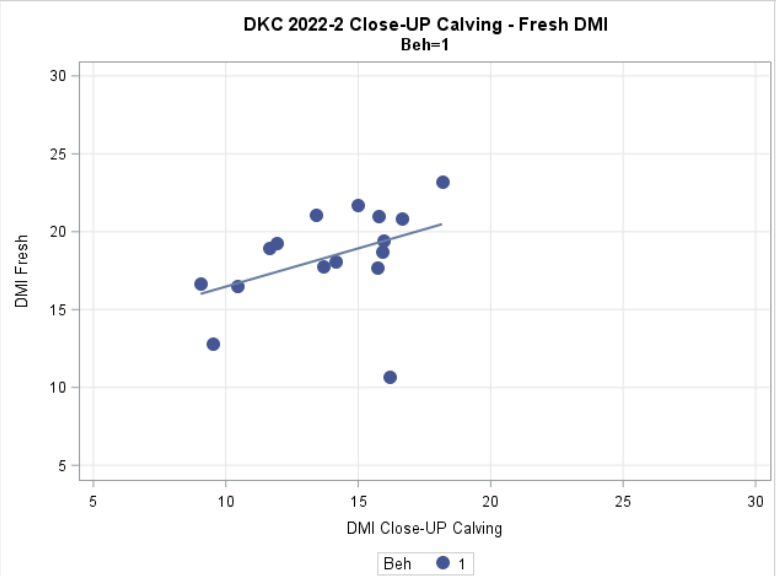


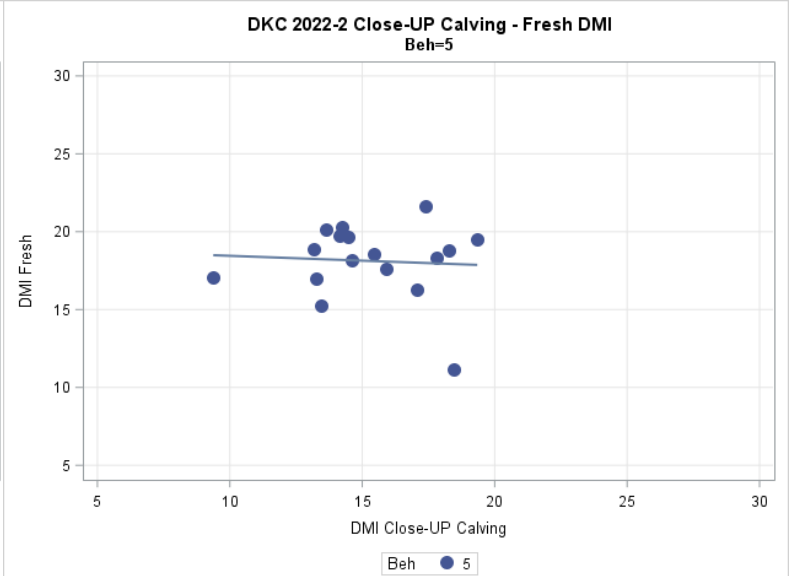


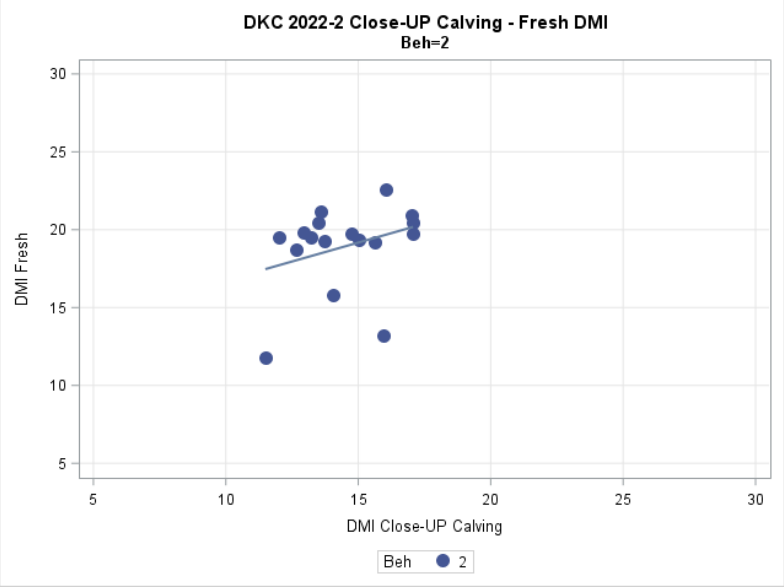


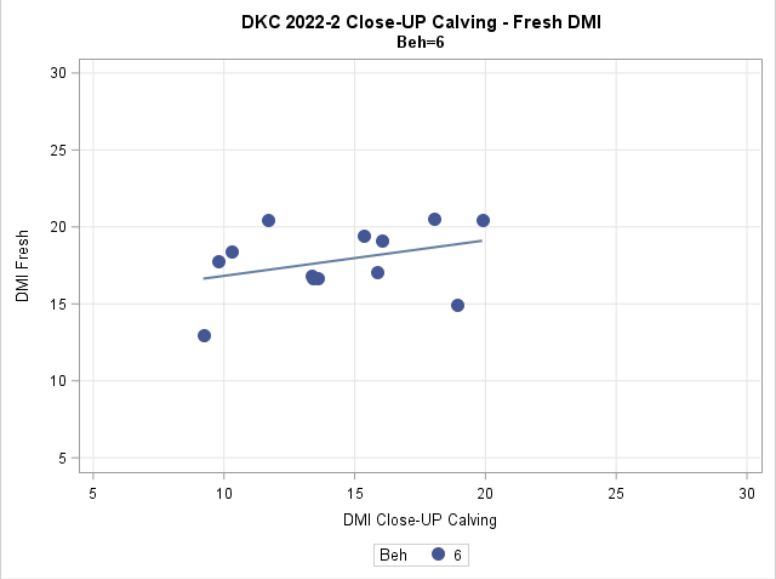
SEGES INNOVATION

DKC 2022-2 DMI Close-UP calving - Fresh



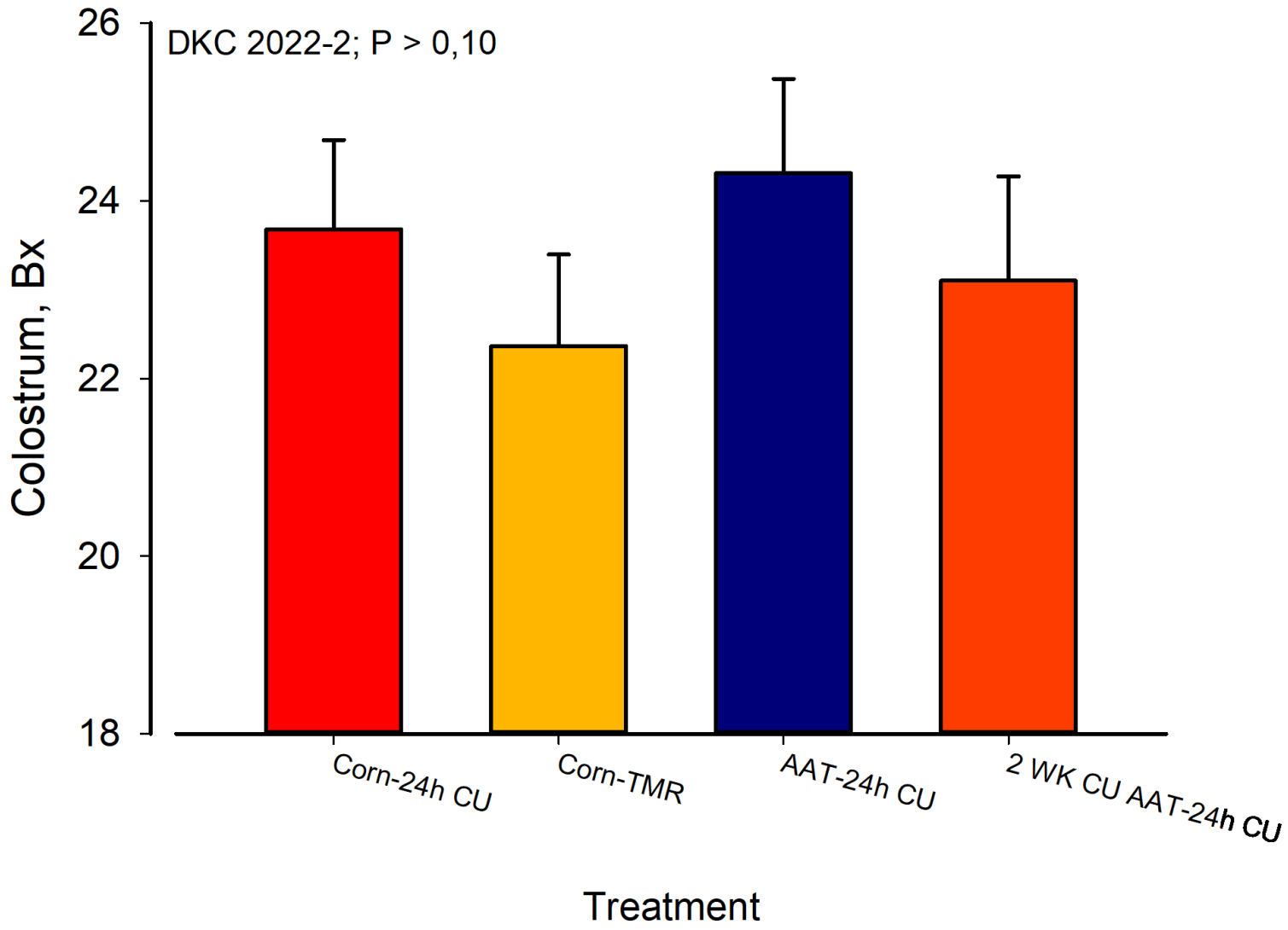






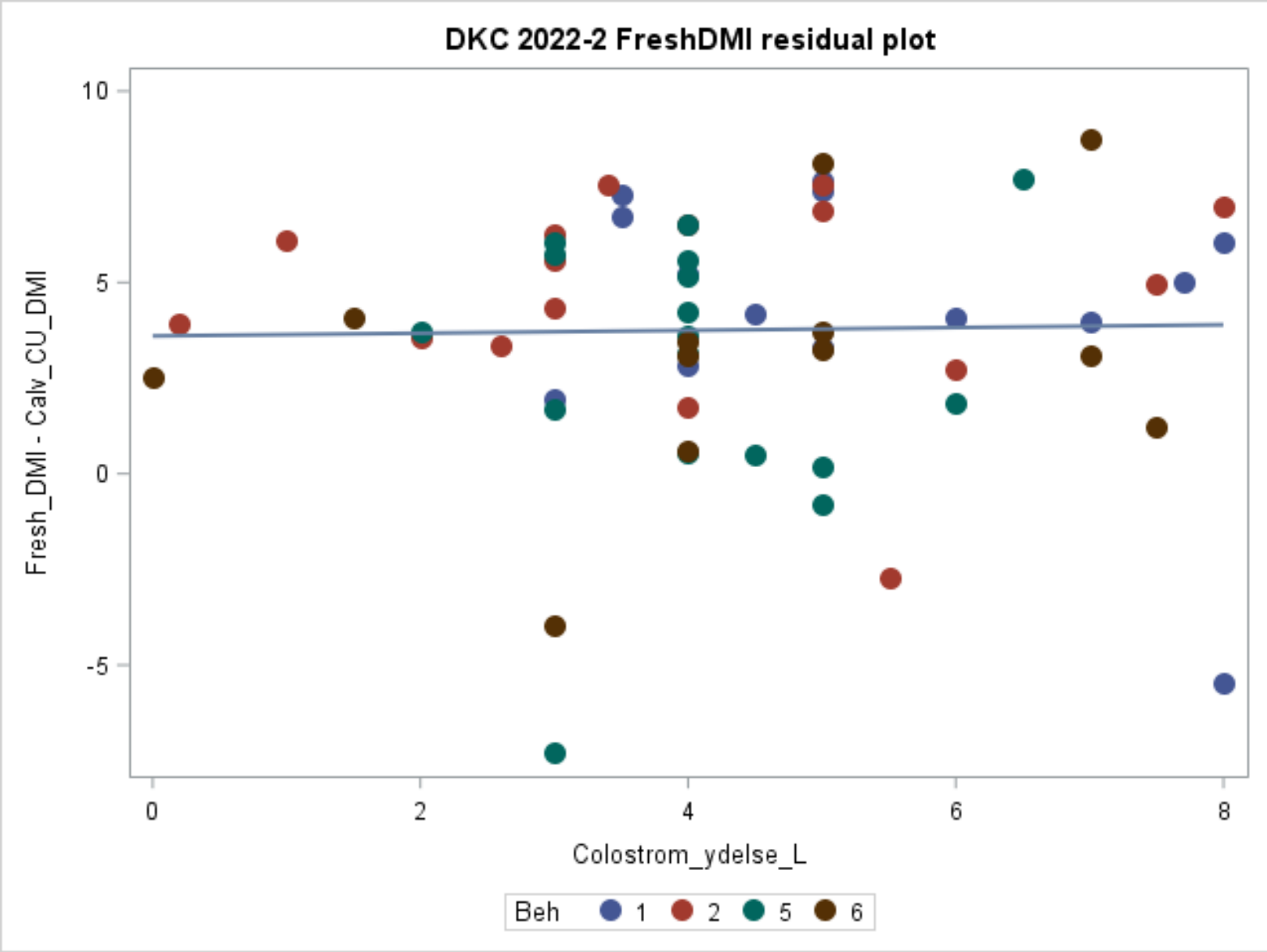
SEGES INNOVATION

DKC 2022-2

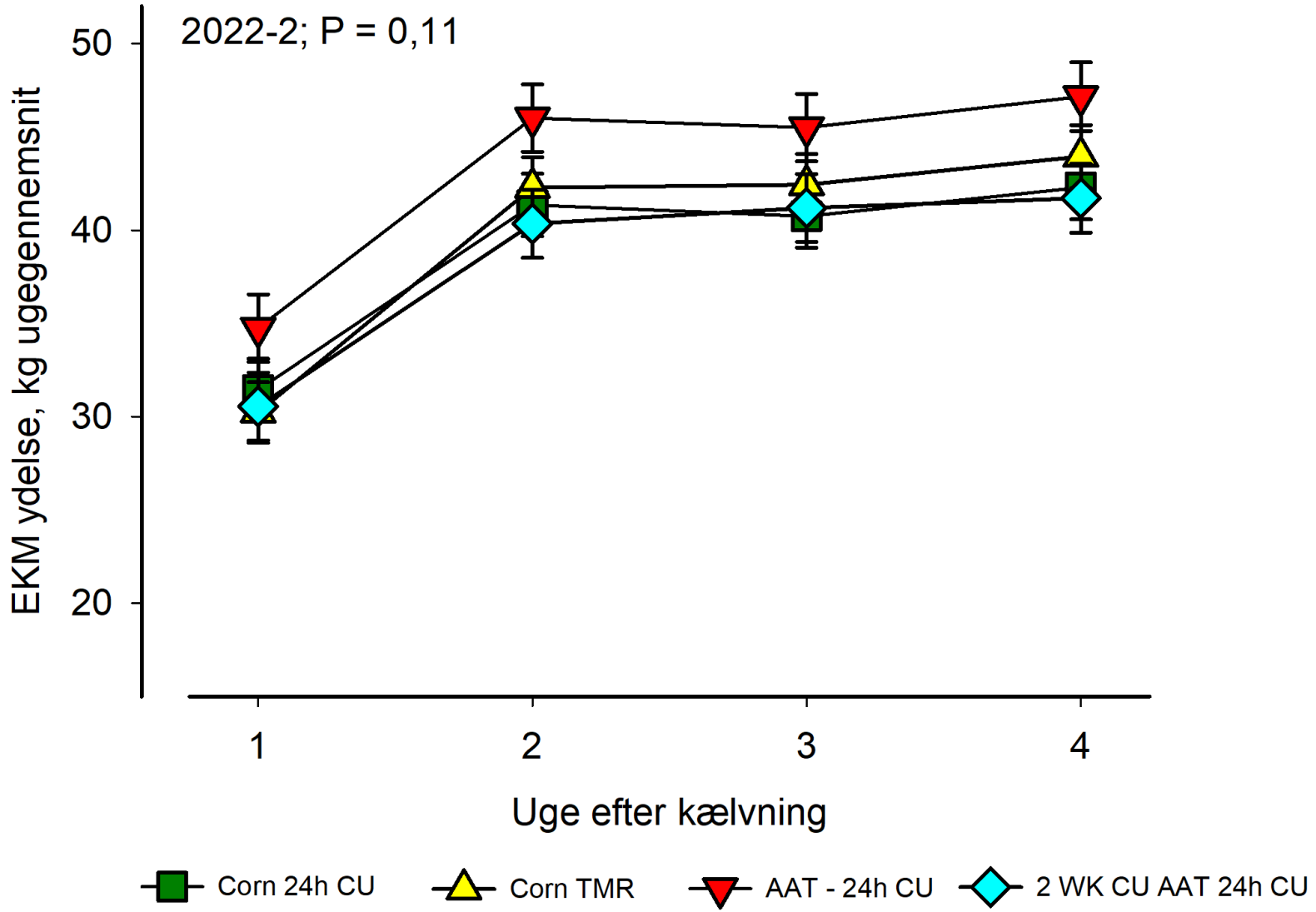


SEGES INNOVATION

DKC 2022-2

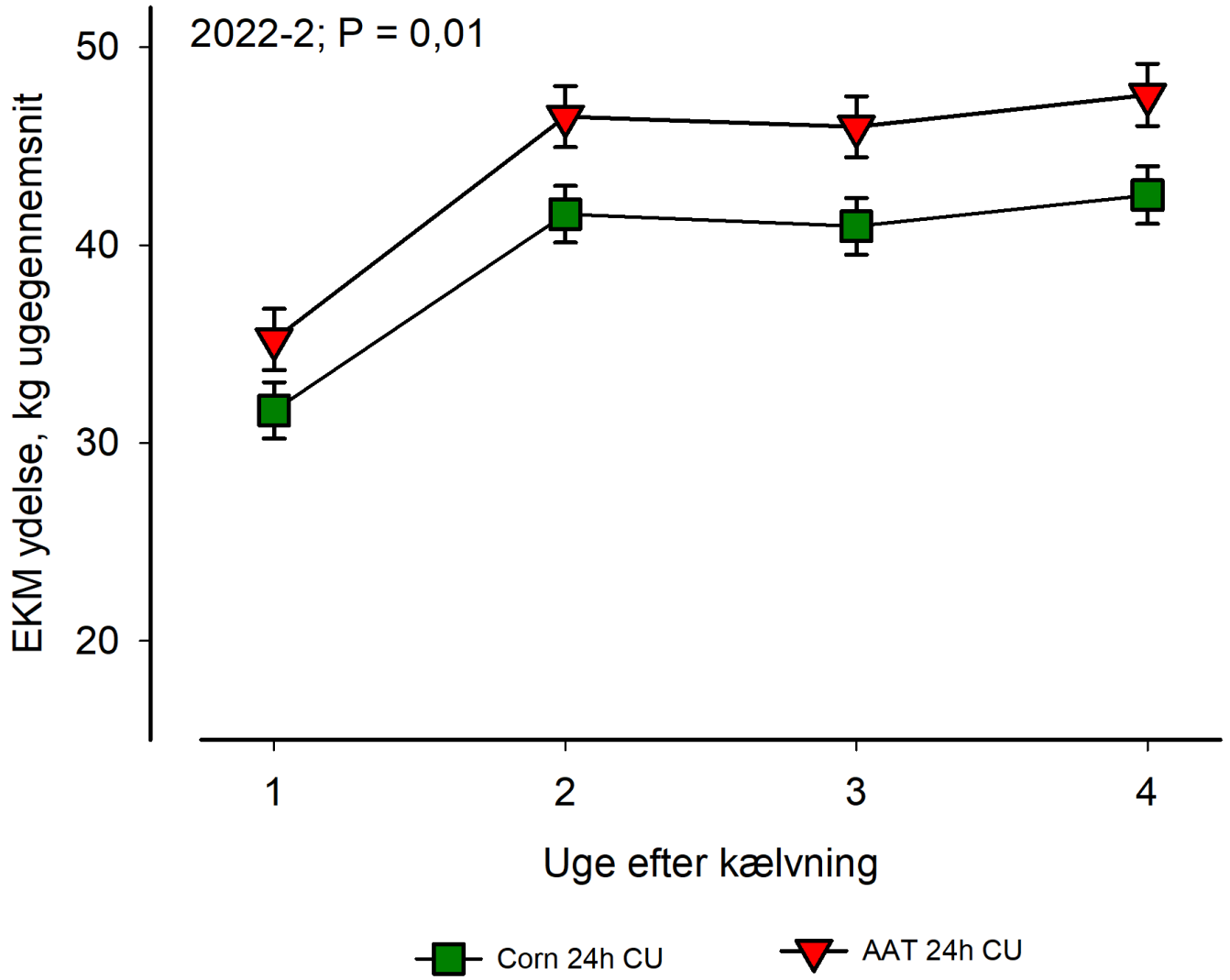

DKC 2022-2 FreshDMI residual plot
Fresh_DMI - Calv_CU_DMI
10
5
0
-5
0
2
4
6
8
Colostrom_ydelse_L
Beh
1
2
5
6

DKC 2022-2

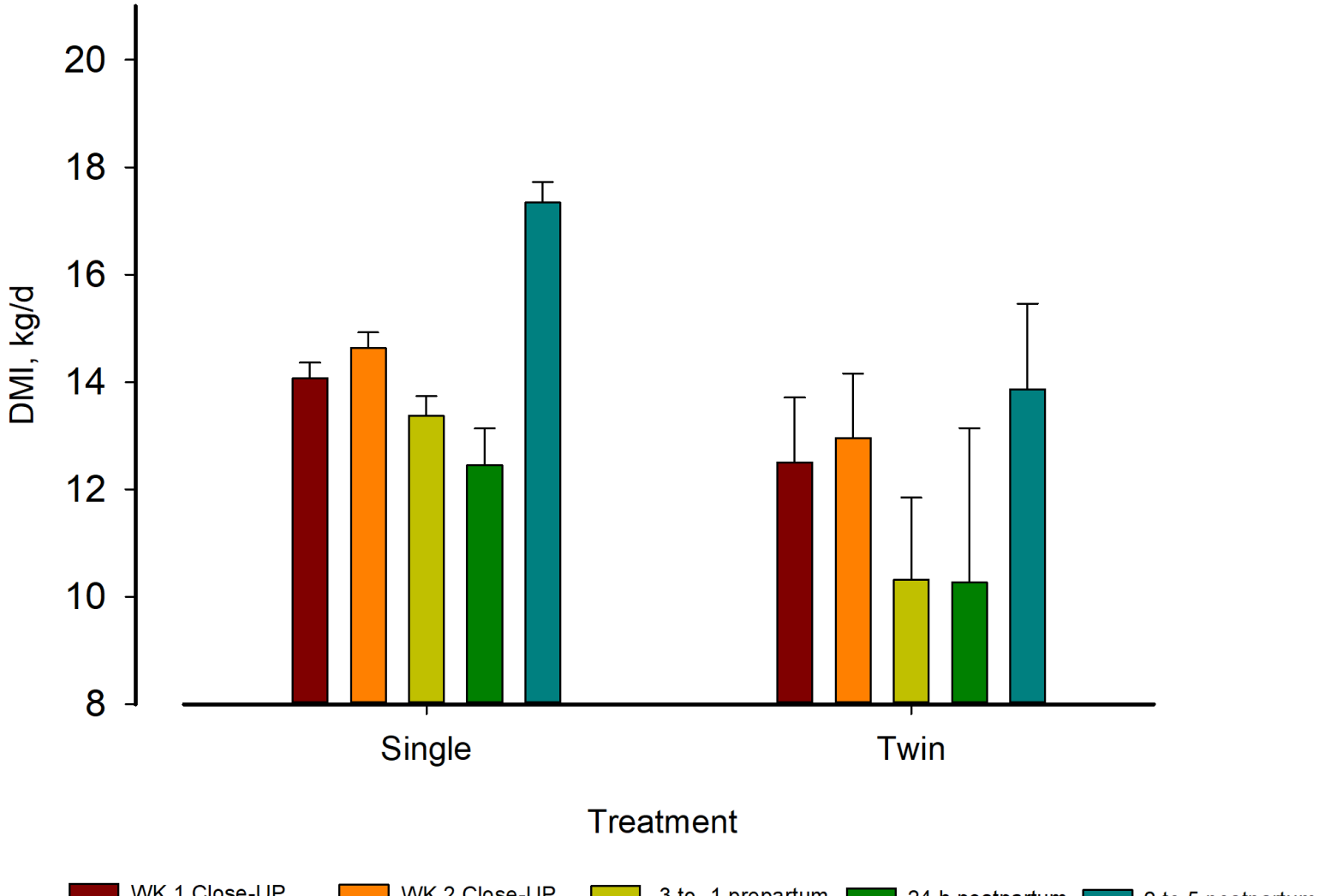


SEGES INNOVATION

Maybe positive effect of high AAT level

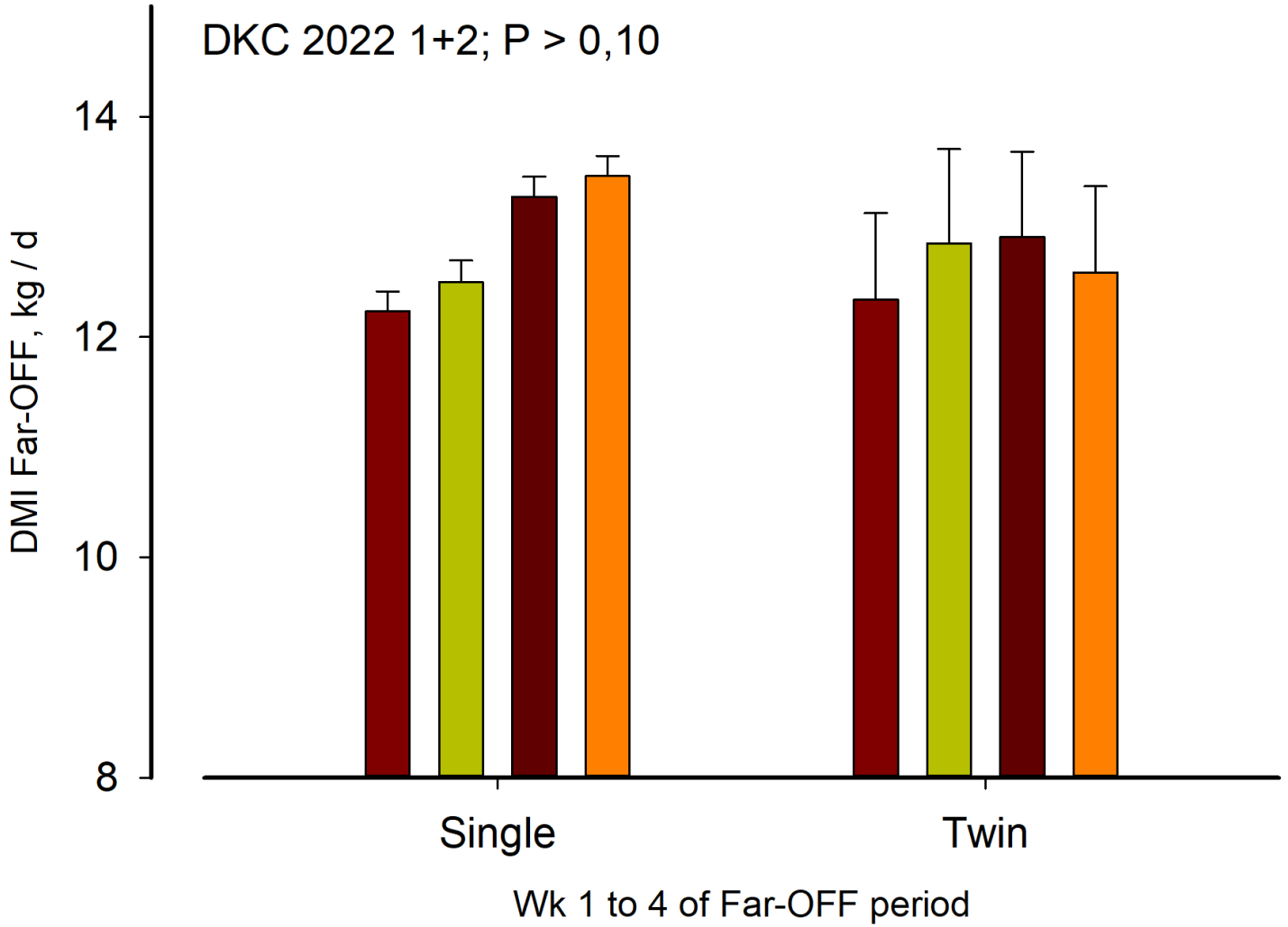


Twin pregnancy challenge

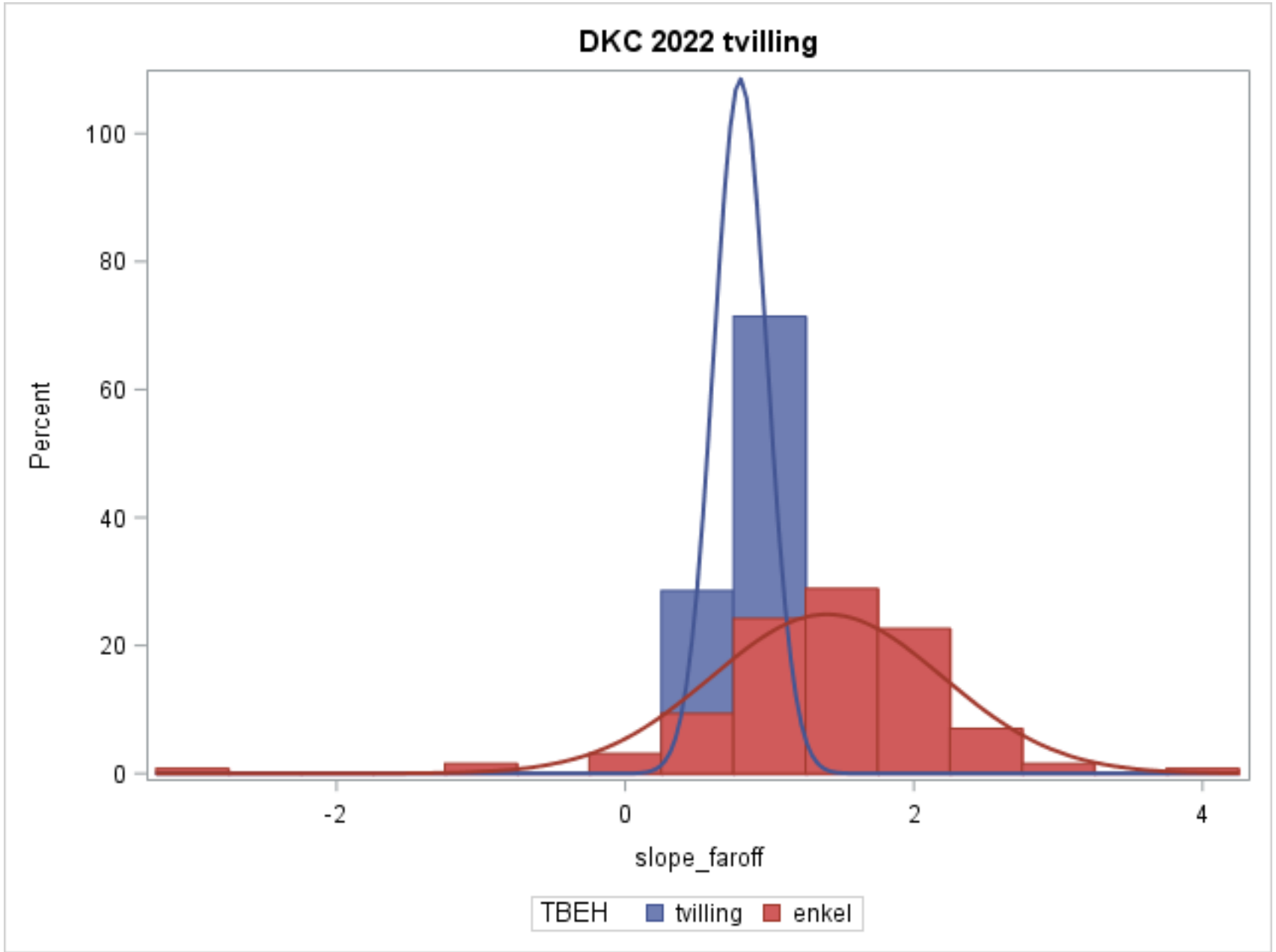


SEGES INNOVATION

Far-OFF twins



SEGES INNOVATION



SEGES INNOVATION

Rute Far-OFF køer, motionsbehandling, rute 2 km

Motivationsdrevet motionsprogram for Far-OFF goldkøer

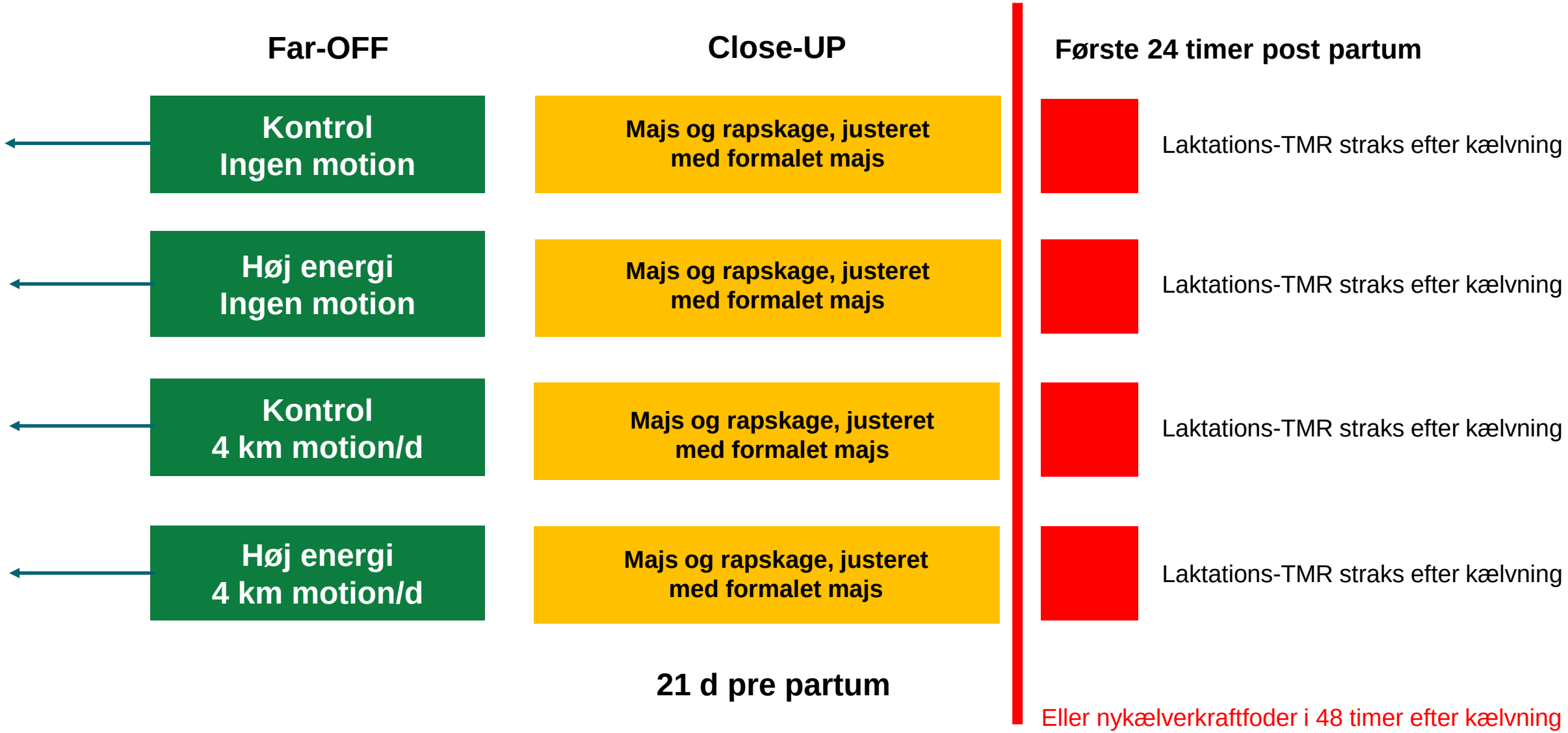
Indhegnet vej til kraftfodertrug

Bredde 4 m

Køer tildeles 1 kg kraftfoder/ko – fast klokkeslæt f.eks. Kl. 0930, porten åbnes fast tidspunkt der f.eks. afpasses med at man går fra malkestald til kaffe. (kontrolkøer får evt. blandet kraftfoderet i fuldfoder for at undgå automat.

Ingen vand eller andet foder på vejen (dog frisk græs i vist omfang). Vi skal sikre at køerne vil hjem igen.

Forsøgsbehandlinger 2023 – køer fra den ældste ende af



Forsøgsbehandlinger 2023 – resten af køerne, unge