

Study 1 Appendix: Winter feeding trial, January to May 2007

Table 3: (i) Health status models: treatments 1 to 4.

Group	Correlation structure	Model										
		Days	Source	Farm	Source.farm	Source.days	farm.days	source.farm.days	sex	base	Trend	
Health status												
White blood Cells												
	WBC	UN	x	x							x	No
	Lymph	Pow	x	x							x	No
	Mono ^a	Pow	x	x							x	No
	Eso	Sph	x	x								No
	Baso ^a	sph	x	x	x		x		x		x	No
	Neut	lin	x								x	No
Red blood cells												
	RBC	Linl	x	x	x	x	x		x		x	No
	Hg	Linl	x	x	x		x		x		x	No
	PCV	Lin	x	x	x	x	x		x	x	x	No
	MCV	Pow	x	x	x	x	x		x	x	x	No
	MCH	UN	x		x				x		x	No
	MCHC	Pow	x								x	No
Platelets												
	Platelet	Sph	x	x	x	x	x		x	x	x	No
Other												
	TP	un	x	x	x	x			x		x	No
	GGT	Sph	x		x				x		x	
	CPK ^b	un	x	x			x					

ALB	sph	x	x	x			x			x
AST	sph	x	x							x

a: The response variable was log transformed.

b: No baseline measurement was taken.

(ii) Energy Status models: treatments 1 to 4 (awaiting insulin results)

Group	Correlation structure	Model									
		Days	Source	Farm	Source.farm	Source.days	farm.days	source.farm.days	sex	base	Trend
Energy status											
Urea	un	x	x	x	x	x	x	x		x	No
Gluc	linl	x	x	x	x	x	x	x		x	No
BHB	sph	x	x	x		x	x		x	x	No
NEFA	pow	x	x	x			x			x	No
Insulin ^a	pow	x	x	x		x	x			x	No

a: The response variable was log transformed.

(iii) Nutrition models: treatments 1 to 4

Group	Correlation structure	Model									
		Days	Source	Farm	Source.farm	Source.days	farm.days	source.farm.days	sex	base	Trend
Nutrition											
Essential elements											
ca	un	x									No
fe	cs	x							x		No
k	cs	x	x	x	x			x		x	No
mg	un								x		No
na	cs	x									No
p	cs		X						x		No
b ^a	un	x									No
co ^a	un										No
Cu (minerals)	cs	x		x					x		No
Cu (biochem) ^a	pow	x	X	x	x	x			x		No
mn	un	x	X								No
mo	un	x		x					x	x	No
ni ^a	un			x							No
zn ^a	un	x	X			x			x		No
se	cs	x	X			x			x		No
s	cs	x	x	x	x				x		No
gpx ^a	un	x	x	x		x			x		No
Heavy metals											
Al ^b	un										No

cd ^a	un		x			x	No	
pb ^a	un			x	x	x	No	
hg	all results were recorded as <0.5							

a: The response variable was log transformed.

b: The response variable was transformed by using the reciprocal transformation

Table 4: (i) Health status models: treatments 2 and 5 (tx).

Group	Outcome measure	Correlation structure	Model			sex	Base
			Days	tx	tx*days		
Health Status							
White blood Cells							
	WBC	UN	x				x
	Lymph	Pow	x	x	x		x
	Mono ^a	Pow	x				x
	Eso	UN	x				x
	Baso ^a	UN	x				x
	Neut	pow	x	x	x		x
Red blood cells							
	RBC	Linl	x	x			x
	Hg	Linl	x				x
	PCV	Lin	x				x
	MCV	Pow	x	x			x
	MCH	UN	x	x			x
	MCHC	Pow	x				x
Platelets							
	Platelet	Sph	x				x
Other							
	TP	un	x	x	x		x
	GGT	sph	x	x	x		x

CPK ^b	un	x				
ALB	sph	x	x	x		x
AST	sph	x				x

a: The response variable was log transformed.

b: No baseline measurement was taken.

(ii) Energy status models: treatments 2 and 5 (tx).

Group	Outcome measure	Correlation structure	Model			sex	Base
			Days	tx	tx*days		
Energy Status							
	Urea	un	x	x	x		x
	Gluc	linl	x				x
	BHB	sph	x				x
	NEFA	pow	x				x
	Insulin ^a	pow	x	x	x		x

a: The response variable was log transformed.

(iii) Nutrition models: treatments 2 and 5 (tx).

Group	Outcome measure	Correlation structure	Model				Base
			Days	tx	tx*days	sex	
Nutrition							
Essential elements							
	ca	un	x				
	fe	cs	x				x
	k	cs	x				x
	mg	un	x				
	na	cs					
	p	cs					x
	b ^a	un	x				
	co ^a	un					
	Cu (minerals)	cs					
	Cu (biochem) ^a	pow	x				
	mn	un					
	mo	un	x				x
	ni ^a	un					
	zn ^a	un	x				x
	se	cs	x				
	s	cs	x				

Heavy metals	gpx ^a	un	x	x
	Al ^b	un		
	cd ^a	un	x	x
	pb ^a	un		x
	hg	all results were recorded as <0.5		

a: The response variable was log transformed.

b: The response variable was transformed by using the reciprocal transformation

Table 5: Comparisons of baseline measurements for treatments 1 to 4:

Group	Variable	farm	source	farm*source
Health status				
White blood cells				
	wbc	nothing signif.		
	Lymph	nothing signif.		
	Neut	nothing signif.		
	Eosinophils	nothing signif.		
	Baso	x		
	Mono		x	
Red blood cells				
	rbc	x	x	
	Hg	x	x	
	PCV	x	x	

Group	Variable	farm	source	farm*source
	MCV		x	
	MCH		x	
	MCHC	nothing signif.		
Platelets				
	PLT	nothing signif.		
Other				
	TP	x	x	
	GGT	x	x	x
	CPK	No measurement taken at time 0		
	ALB		x	
	AST		x	
Energy status				
	Urea	x	x	
	Gluc	nothing signif.		
	BHB	x	x	
	NEFA	x	x	
	Insulin		x	
Nutrition				
Essential elements				
	Ca	x		
	Fe		x	
	K	nothing signif.		
	Mg	nothing signif.		
	Na		x	

Group	Variable	farm	source	farm*source
	P	x	x	
	B	nothing signif.		
	Co	nothing signif.		
	Cu (minerals)	nothing signif.		
	Cu (biochem)		x	
	Mn	nothing signif.		
	Mo		x	
	Ni	nothing signif.		
	Zn	nothing signif.		
	Se		x	
	S		x	
	GPx		x	
Heavy metals				
	Al	nothing signif.		
	cd	nothing signif.		
	pb	nothing signif.		
	hg	all below 0.5		
Growth				
	igf		x	
	t3	nothing signif.		
	t4		x	
	weight		x	