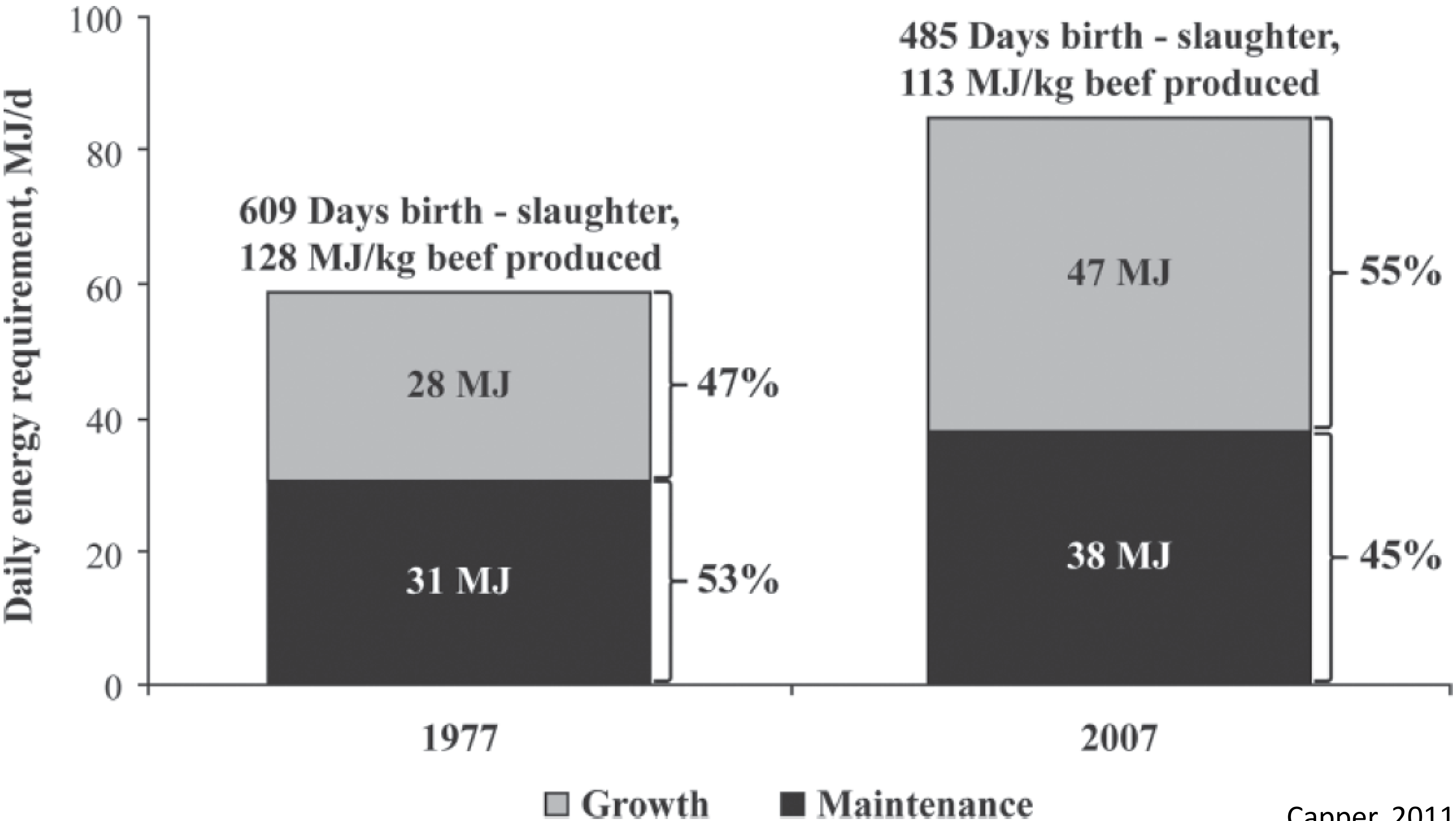



Az állati termékelőállítás hatékonysága az USA-ban

	1925	1950	1975	1990
Húsmarha értékesített tömeg/tehén	119	168	261	283
Tejelő marha laktációs tej/tehén	2266	2874	5680	7574
Sertés értékesített tömeg/koca	865	1314	1542	1893
Broiler csirke 1 kg tömeghez felhasznált takarmány	4.0	3.3	2.1	1.9
Tojás /év	112	174	232	250

Environmental impact of beef production in the United States



Capper, 2011

1 milliárd kg marhahús előállításához felhasznált erőforrások mennyiségének változása az USA-ban

Megnevezés	2007/1977
Állatlétszám	69,9%
Takarmányfelhasználás	81,4%
Vízfelhasználás	87,9%
Földterület lekötés	67,0%
Trágyatermelés	81,9%
CH_4 kibocsájtás	82,3%
N_2O	88,0%
C lábnyom	83,7%

Capper, 2011

„Víz-, energiatakarékos, környezetbarát élelmiszerelőállítás”

DE-MÉK

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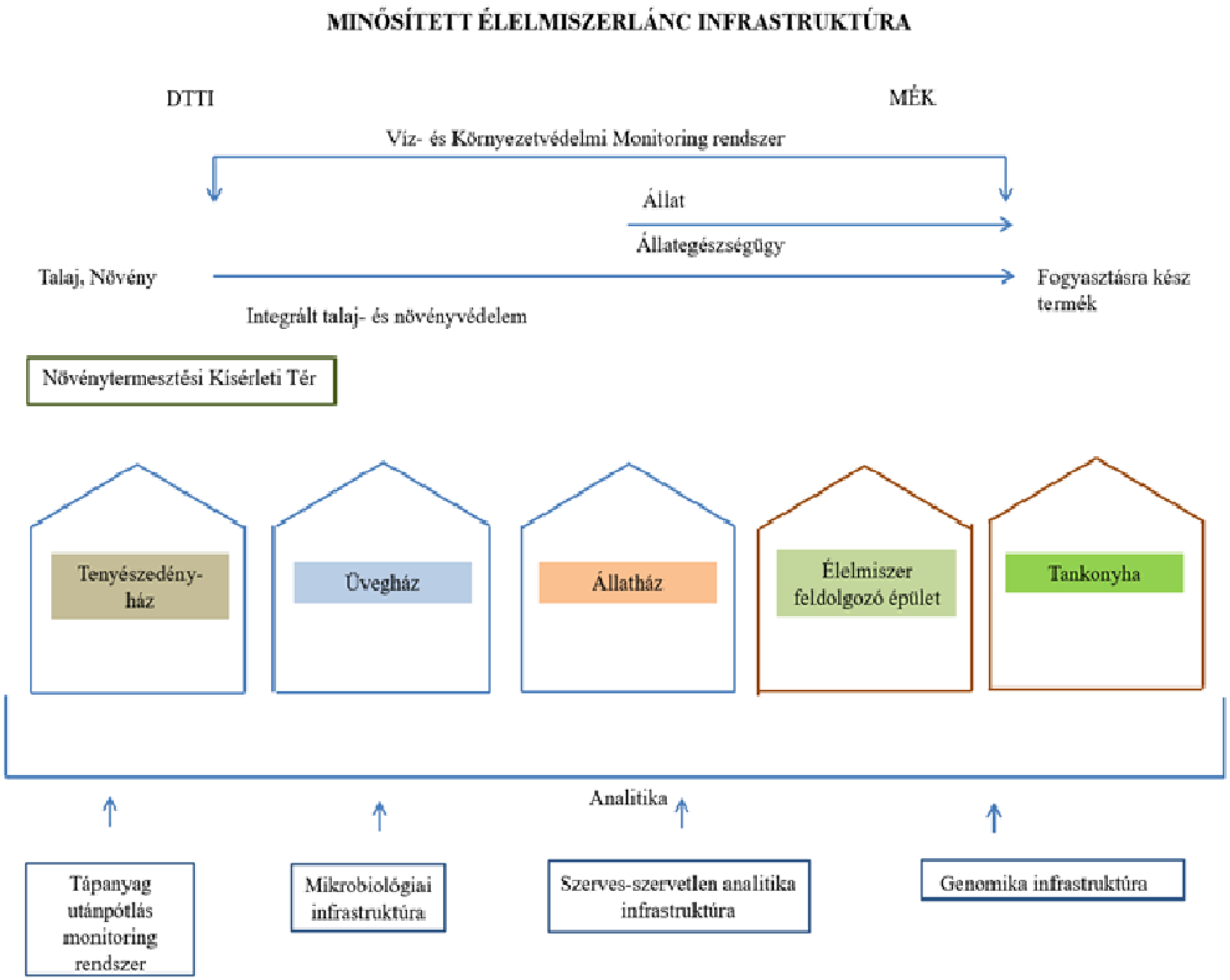
NYOMONKÖVETÉS Talajtól az asztalig

Víz, energia, környezeti kibocsájtás, fizikai, gazdasági


MINŐSÍTETT ÉLELMISZERLÁNC INFRASTRUKTÚRA
DTTI
MÉK
Víz- és Környezetvédelmi Monitoring rendszer
Állat
Állategészségügy
Talaj, Növény
Fogyasztásra kész termék
Integrált talaj- és növényvédelem
Növénytermesztési Kísérleti Tér
Tenyészedény-ház
Üvegház
Állatház
Élelmiszer feldolgozó épület
Tankonyha
Analitika
Tápanyag utánpótlás monitoring rendszer
Mikrobiológiai infrastruktúra
Szerves-szervetlen analitika infrastruktúra
Genomika infrastruktúra


Allflex
982
000
028
847
982 000 018 461 262
1118


e.Tag by Destron
91593
98512000
PADLOCK RANCH
B
0001

Moow rumen bolus is designed to provide continuous and reliable measurement of the pH level and temperature of the rumen.
The detector measures the CO_2 and NH_3 concentration in the stable to provide the perfect environment.
All data is transmitted automatically first to the Base Station and then to a cloud-based system which allows farmers, vets and scientists to process the information and deal with unexpected issues.

pH level

Continuous reliable monitoring of the rumen pH level.

temperature

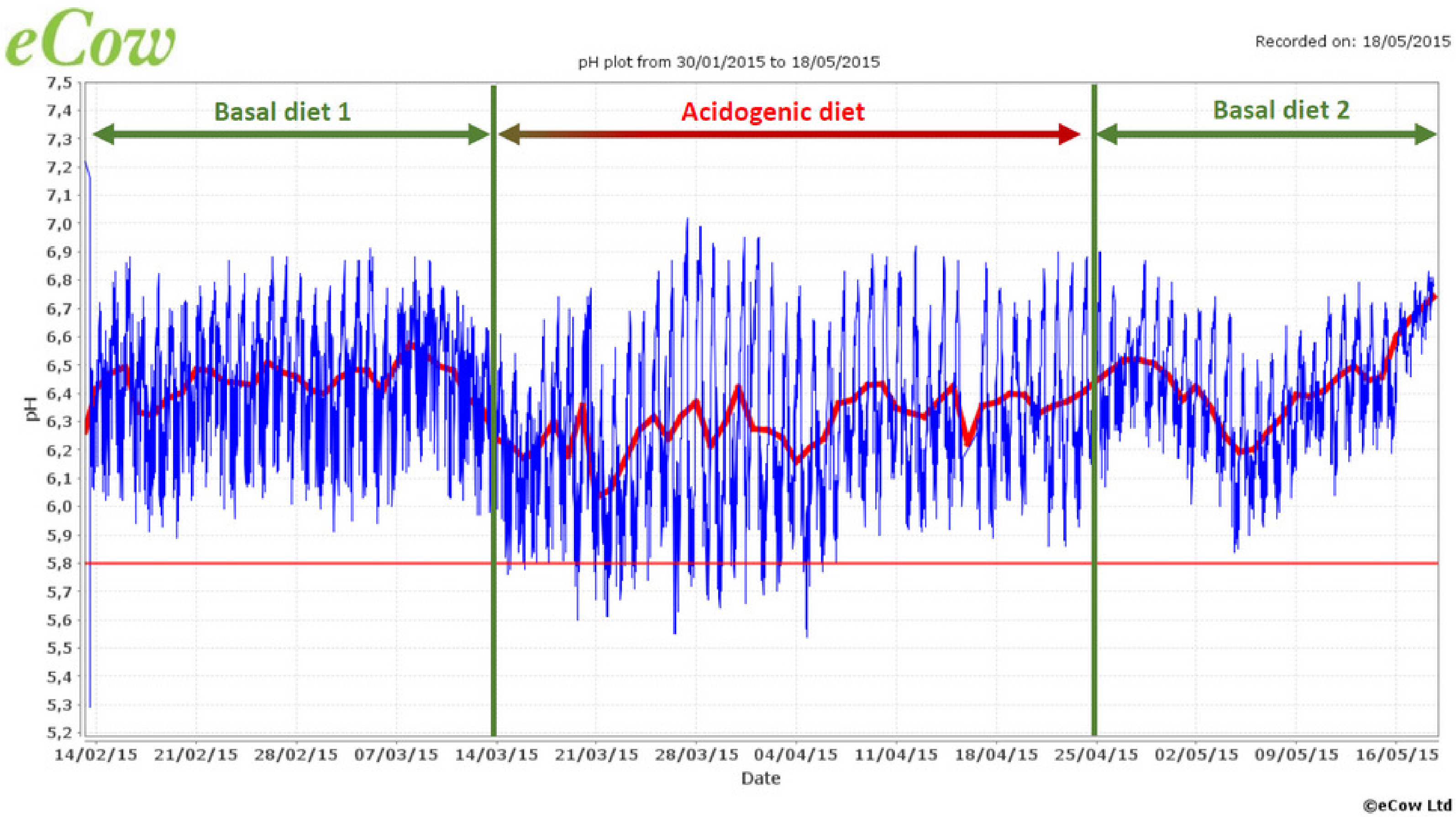
Measuring the rumen temperature.

wireless

Wireless data transmission to the Base Station with local or cloud storage.

battery

Low energy consumption resulting in long battery life.


eCow
Recorded on: 18/05/2015
pH plot from 30/01/2015 to 18/05/2015
Basal diet 1
Acidogenic diet
Basal diet 2
pH
7,5
7,4
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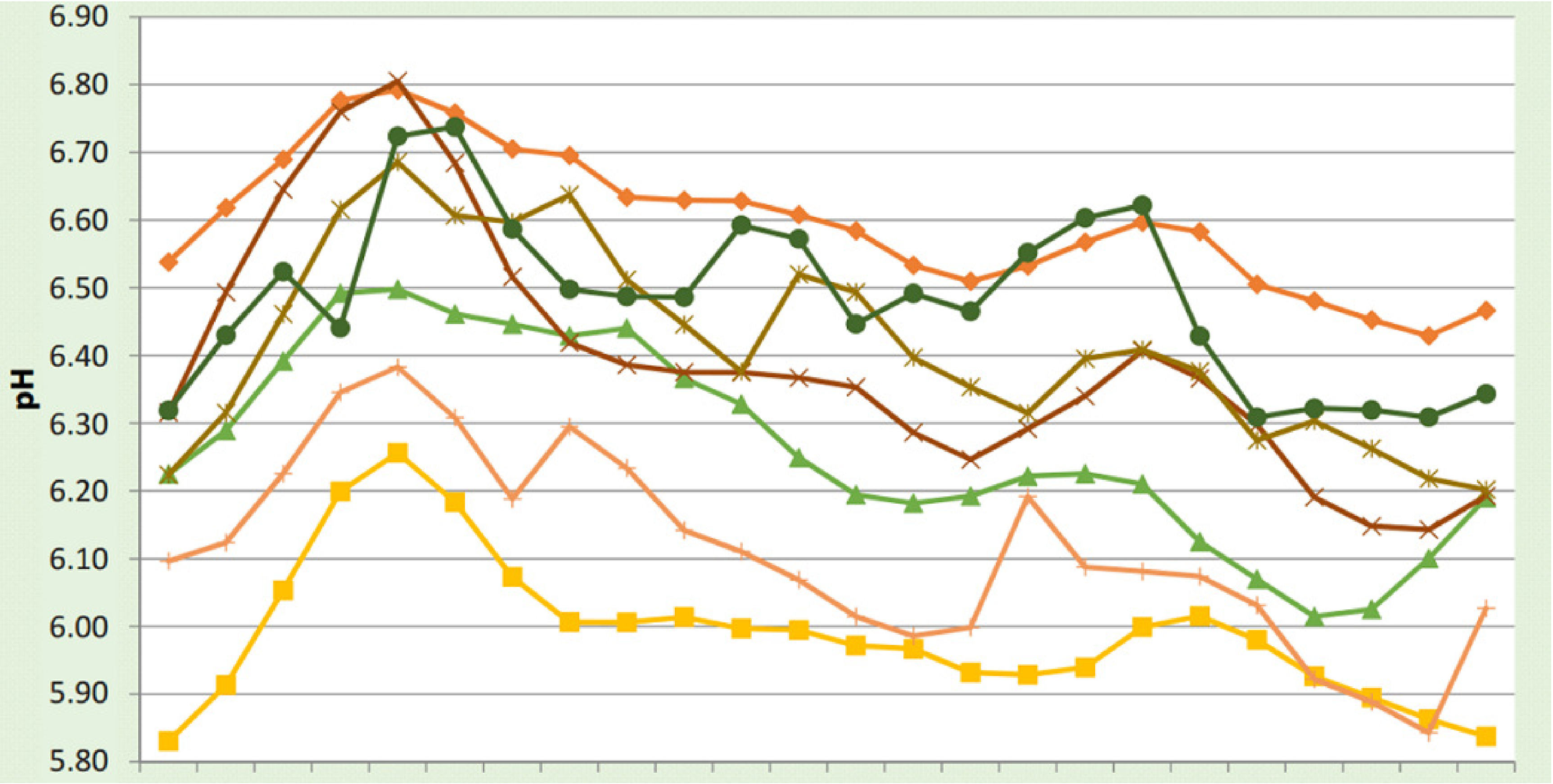
16/05/15
Date
©eCow Ltd


6.90
6.80
6.70
6.60
6.50
6.40
6.30
6.20
6.10
6.00
5.90
5.80
pH

US 20110181399A1

(19) **United States**

(12) **Patent Application Publication**

(10) **Pub. No.: US 2011/0181399 A1**

(43) **Pub. Date: Jul. 28, 2011**

Pollack et al.

(54) **ENERGY HARVESTING WITH RFID TAGS**

(75) Inventors: **Richard Stephen Pollack**, Boulder, CO (US); **Joseph Michael Letkomiller**, Thornton, CO (US); **Wade W. Webster**, Woodinville, WA (US)

(73) Assignee: **DVM SYSTEMS, LLC**, Greeley, CO (US)

(21) Appl. No.: **13/015,564**

(22) Filed: **Jan. 27, 2011**

Related U.S. Application Data

(60) Provisional application No. 61/299,312, filed on Jan. 28, 2010, provisional application No. 61/299,314, filed on Jan. 28, 2010.

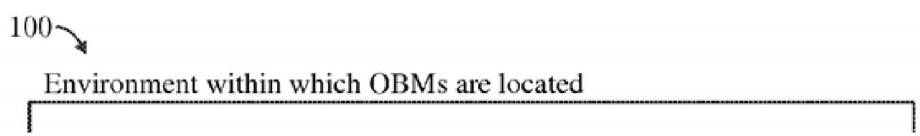
Publication Classification

(51) **Int. Cl.**
H04Q 5/22 (2006.01)

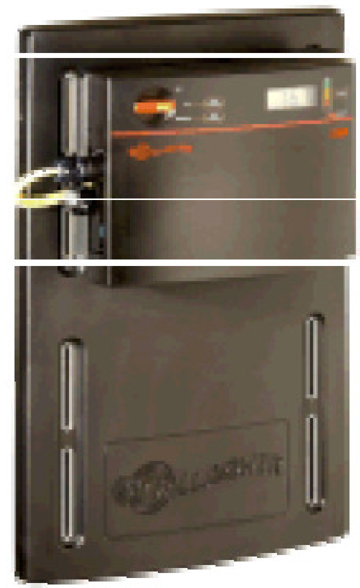
(52) **U.S. Cl.** **340/10.33**; 340/10.1

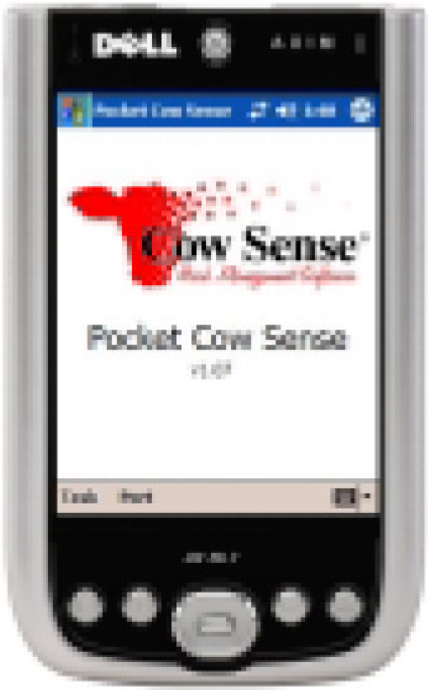
(57) **ABSTRACT**

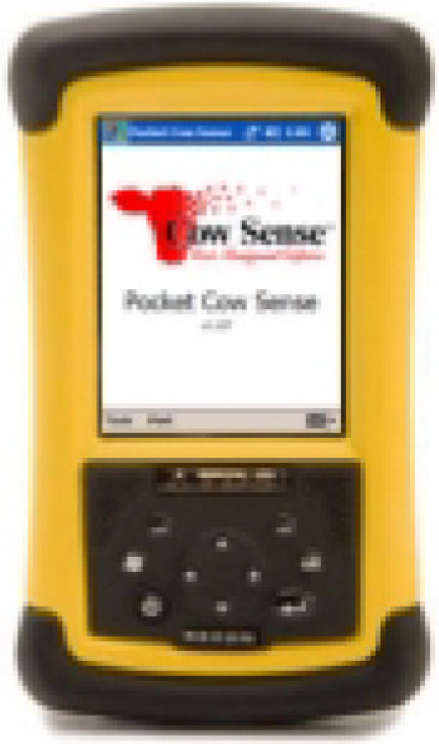
RFID tags, such as those in boluses for ruminant animals, comprise RFID tags may be provided with energy harvesting (EH) capability so that they may collect energy from the environment, either deliberately radiated (such as RF) or gathered from existing sources (i.e., motion, heat, etc.). The energy collected by the RFID tag allows for independent (stand-alone) operation of the tag, such as for logging of temperature in one hour intervals, then transmitting the temperature readings (and ID) periodically (such as six times per day) to a reader (or equivalent, such as an active receiver) using an active RF transmitter (radio) or passive RFID techniques.



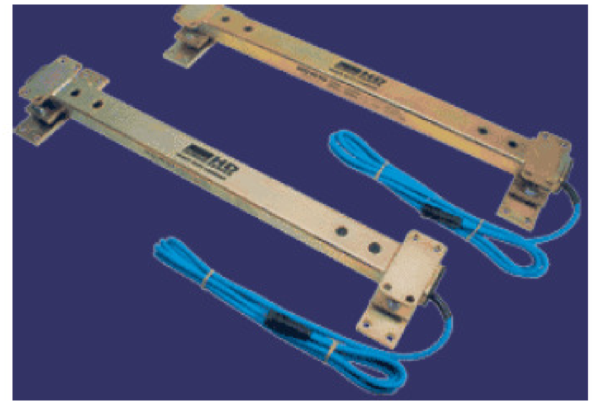

Bluetooth® Wireless




DELL
Pocket Cow Sense
Cow Sense
Pocket Cow Sense


Pocket Cow Sense
Cow Sense
Pocket Cow Sense


3000
kg

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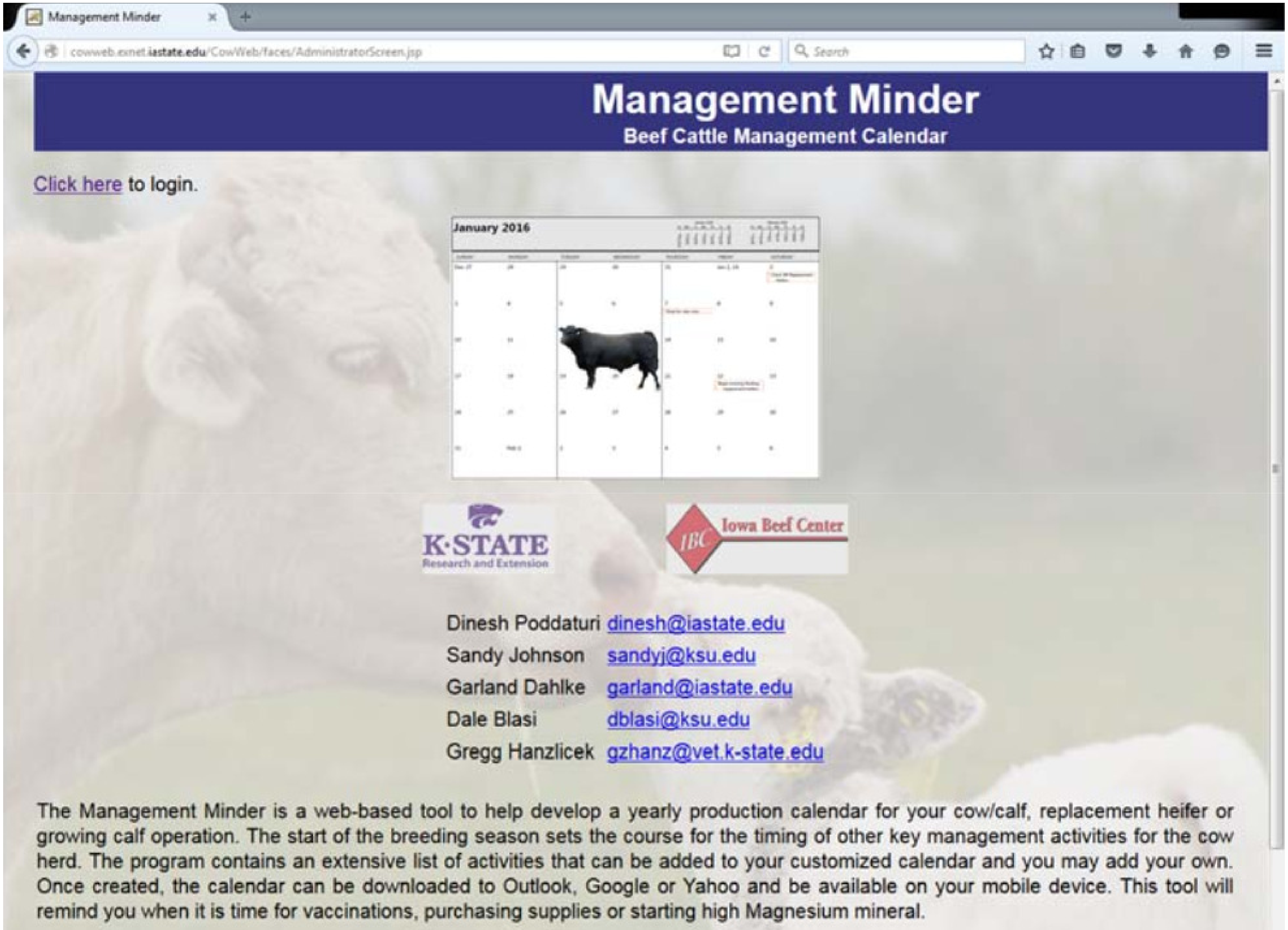
189


Management Minder
cowweb.exnet.iastate.edu/CowWeb/faces/AdministratorScreen.jsp
Management Minder
Beef Cattle Management Calendar
Click here to login.
January 2016
K-STATE
Research and Extension
Iowa Beef Center
IBC
Dinesh Poddaturi dinesh@iastate.edu
Sandy Johnson sandyj@ksu.edu
Garland Dahlke garland@iastate.edu
Dale Blasi dblasi@ksu.edu
Gregg Hanzlicek gzhanz@vet.k-state.edu
The Management Minder is a web-based tool to help develop a yearly production calendar for your cow/calf, replacement heifer or growing calf operation. The start of the breeding season sets the course for the timing of other key management activities for the cow herd. The program contains an extensive list of activities that can be added to your customized calendar and you may add your own. Once created, the calendar can be downloaded to Outlook, Google or Yahoo and be available on your mobile device. This tool will remind you when it is time for vaccinations, purchasing supplies or starting high Magnesium mineral.


Calving auto save
cowweb.exnet.iastate.edu/CowWeb/faces/AutoSave.jsp
Search
Calendar for Breeding
Help
Desired Calving Date*
03/01/2016
Cow
Get Breeding Activities
Breeding Date*
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Select
Sub Category
Activity
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Weblink
BULLS
Shop for new sires
1/20/2015
http://articles.extension.org/pages/72946/beef-sire-selection-recommendations
AI
Shop for AI sires cows
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http://www.asi.k-state.edu/doc/beef-genetics/nbcecbeefsireselctionmanual2ndedition.pdf
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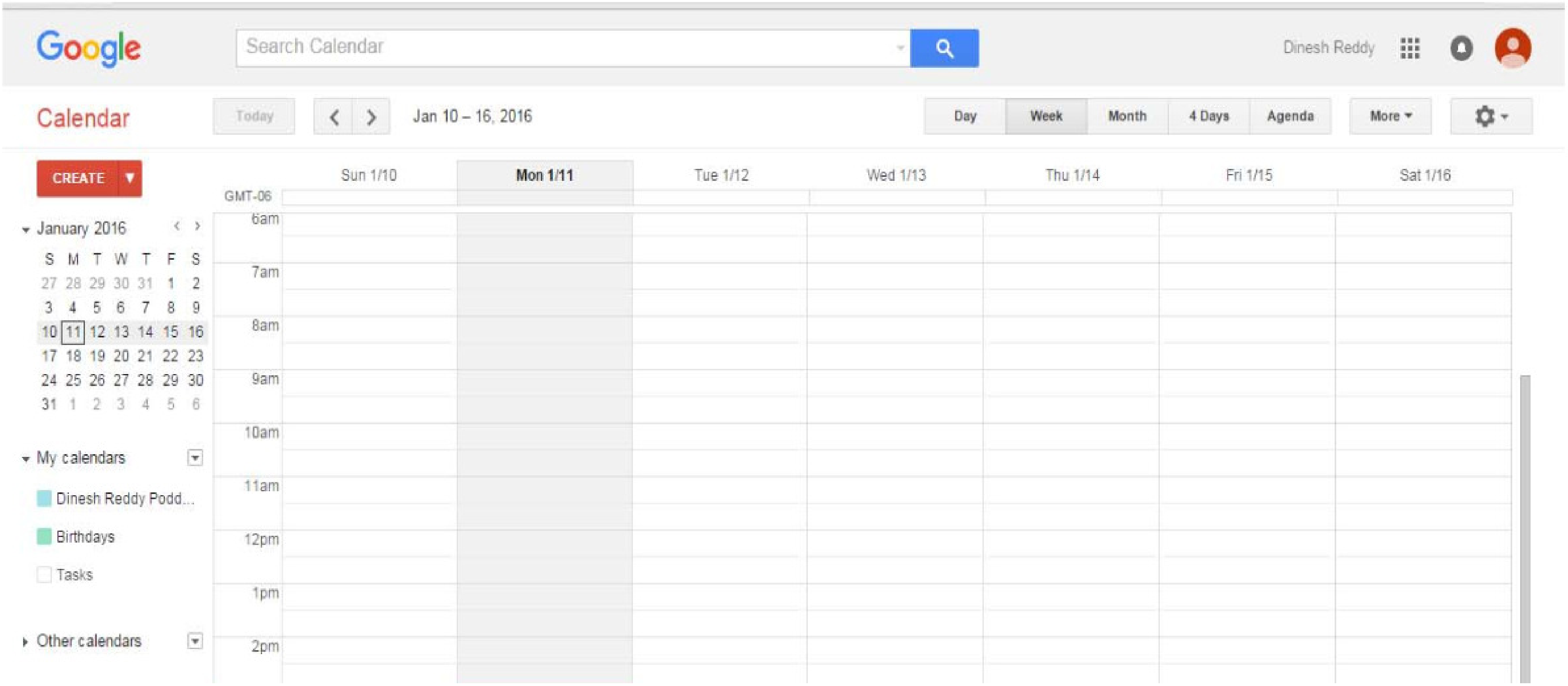
http://www.asi.k-state.edu/doc/beef/estrusovulation.pdf
AI
Order AI supplies cows
3/21/2015


Google
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January 2016
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Other calendars
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Table 5. Resource inputs and emissions from representative cow–calf, stocker, and feedyard operations in Kansas, Oklahoma, and Texas expressed per unit of final carcass weight (CW)[1] produced

Resource use or emission	Unit	Cow–calf ranch	Stocker ranch	Feed yard	Total
Total feed intake	kg DM/kg CW	13.5	3.2	3.7	20.4
Drinking water consumed	L/kg CW	58.0	9.9	14.5	82.3
Fuel use	L/kg CW	0.21	0.07	0.01	0.29
Natural gas	L/kg CW	0.0	0.0	31.3	31.3
Electricity use	kW·h/kg CW	318	102	92.6	513
Ammonia emission	g/kg CW	38.7	11.8	37.9	88.4
Carbon dioxide emission	g/kg CW	1,608	189	95	1,892
Methane emission	g/kg CW	345	86.8	43.0	475
Nitrous oxide emission	g/kg CW	10.6	3.0	2.5	16.1
Greenhouse gas emissions	kg CO_2e[2]/kg CW	13.6	3.6	3.0	20.2
Energy use	MJ/kg CW	26.0	12.0	13.7	51.7
Nonprecipitation water use	L/kg CW	564	265	1,083	1,913
Reactive N loss	g N/kg CW	64.5	19.3	38.3	122

[1]Annual system consumption or emission expressed per unit of total carcass weight produced including finished cattle and cull animals.

[2]$CO_2e = CO_2$ equivalents.

Rotz et al, 2015

Table 4. Technical and economic results under the optimal rearing strategy given the heifer birth month

Month of birth	January	February	March	April	May	June	July	August	September	October	November	December	Average
Optimal ADG during prepuberty period,[1] g	800	800	800	800	800	800	1,000	800	800	800	800	800	–
Optimal month and age at weaning,[2] mo	October (9)	November (9)	December (9)	January (9)	February (9)	March (9)	October (3)	May (9)	June (9)	July (9)	August (9)	September (9)	–
Optimal ADG during the reproductive period[3], g	400 or 600	800	800	800	800	800	400 or 800	400	400 or 600	400 or 600	400	400 or 600	–
Optimal age at conception, mo	14.4	13.0	12.9	12.8	12.8	13.4	11.0	18.2	15.6	15.2	16.7	14.5	13.2
Optimal BW at conception, kg	343.3	359.0	356.3	353.9	352.3	368.5	360.7	395.6	357.7	352.2	373.0	343.5	361.7
Simulated ADG from birth to conception, g	700	820	810	810	810	820	970	650	680	690	660	700	810
Average net return per heifer, EUR	294.9	308.8	318.5	328.9	339.3	318.1	295.6	267.9	271.7	271.4	269.0	284.3	311.6

[1]Prepuberty period ($0 \leq \text{age} < 10$ mo)

[2]The decision on weaning is made at the beginning of each month, for example, October = 1 October.

[3]The optimal ADG during the reproductive period (age ≥ 10 mo to conception) depends on the BW at weaning.

K·STATE
Research and Extension

Body Condition Record Book

Body Condition Scoring Guidelines for Cattle

	BCS	Spine	Ribs	Hooks/Pins	Tailhead	Brisket	Muscling
Thin	**1**	Visible	Visible	Visible	No fat	No fat	None/atrophy
	2	Visible	Visible	Visible	No fat	No fat	None/atrophy
Borderline	**3**	Visible	Visible	Visible	No fat	No fat	None
	4	Slightly visible	Foreribs visible	Visible	No fat	No fat	Full
Optimum Condition	**5**	Not visible	1 or 2 may be visible	Visible	No fat	No fat	Full
	6	Not visible	Not visible	Visible	Some fat	Some fat	Full
Over-Conditioned	**7**	Not visible	Not visible	Slightly visible	Some fat	Fat	Full
	8	Not visible	Not visible	Not visible	Abundant fat	Abundant fat	Full
	9	Not visible	Not visible	Not visible	Extremely fat	Extremely fat	Full

Kondíció bírálat

- Választáskor
- Termékenyítéskor
- Ellés előtt 90 nappal
- Elléskor

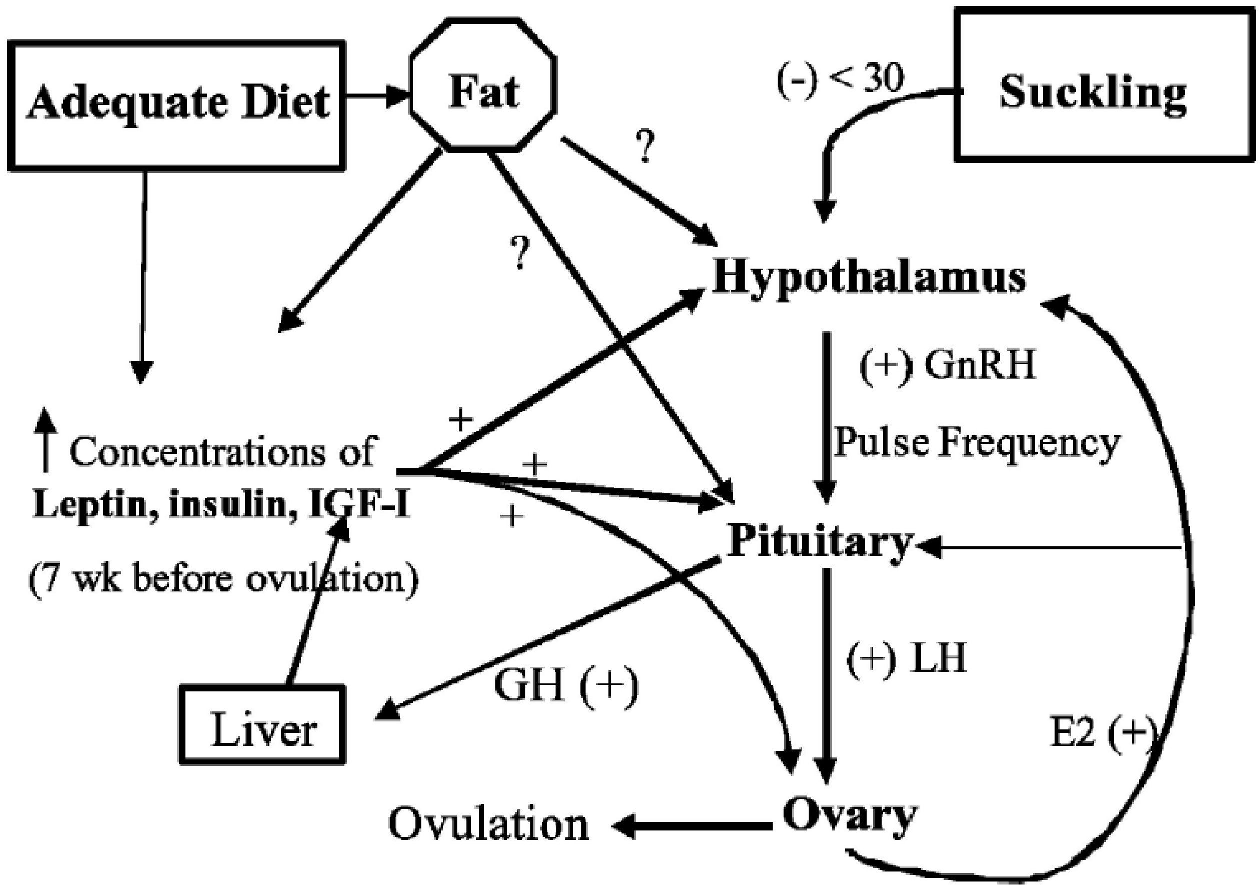


Figure 3. Control of reproductive function in postpartum beef cows.

Wettemann et al, 2003

Nutritional controls of beef cow reproduction[1]

B. W. Hess[2], S. L. Lake, E. J. Scholljegerdes, T. R. Weston, V. Nayigihugu, J. D. C. Molle, and G. E. Moss

Department of Animal Science, University of Wyoming, Laramie 82071

ABSTRACT: The livestock industry and animal scientists have long recognized the importance of proper nutrition for cattle to achieve reproductive success. Timely resumption of estrus following parturition is a major milestone that a cow must reach for optimal reproduction. Dynamic interplay among all strata of the hypothalamo-hypophyseal-ovarian axis occurs during the cow's transition from postpartum anestrus to reproductive competence. The reproductive axis integrates a milieu of nutritionally related signals that directly or indirectly affect reproduction. Directing nutritional inputs toward anabolic processes is critical to stimulating key events that promote reproductive success. Although prepartum and postpartum energy balance are the most important factors affecting duration of the postpartum interval to first estrus in beef cows, other nutritional inputs likely impinge on the hypothalamo-hypophyseal-ovarian axis to influence reproduction. For example, feeding fat to beef cows for approximately 60 d before calving may improve pregnancy rates in the upcoming breeding season. Supplementing postpartum diets with lipids high in linoleic acid can impede reproductive performance of beef cows. Precise mechanisms through which nutritional inputs mediate reproduction have not yet been fully elucidated. Scientists investigating nutritional mediators of reproduction, or how nutritional inputs affect reproduction, must be cognizant of the interactions among nutrients and nutritional cues responsible for mediating reproduction.

Key Words: Beef Cows, Dietary Lipids, Energy Balance, Hormones, Nutrition, Reproduction

Proc. Assoc. Advmt. Breed. Genet. 21: 193-196

ESTIMATES OF GENETIC PARAMETERS FOR SEASONAL WEIGHT CHANGES OF BEEF COWS

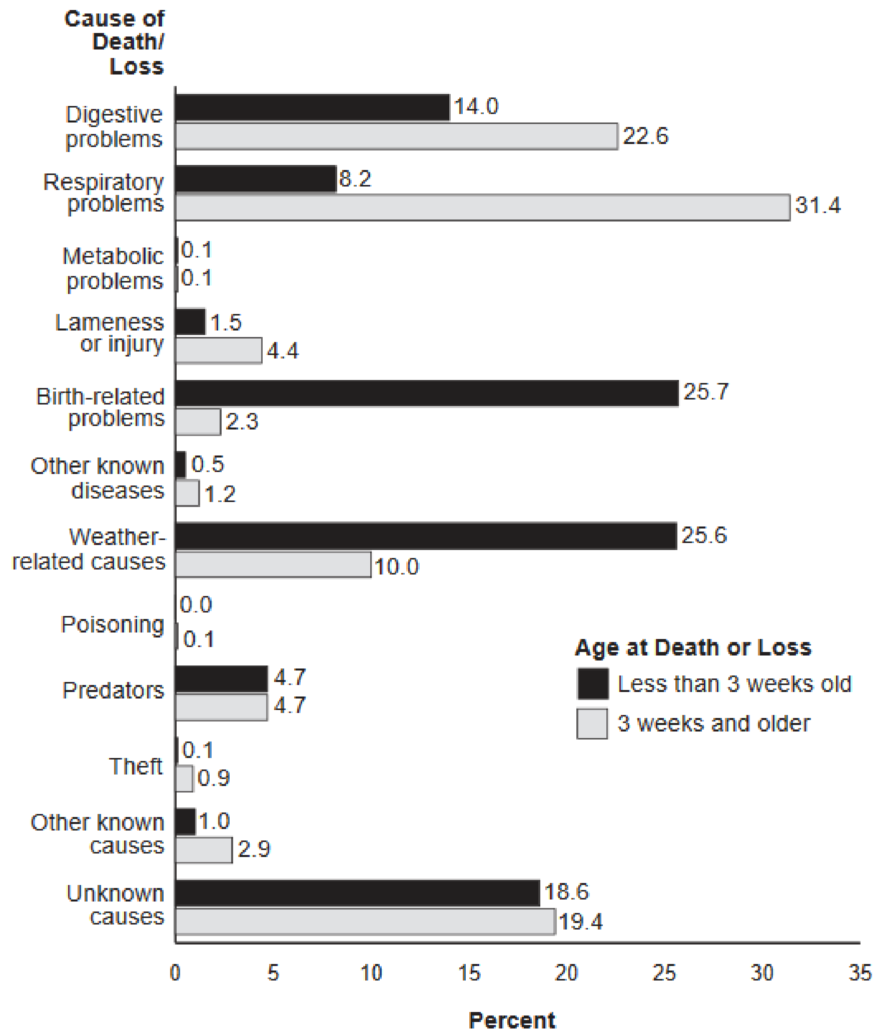
Karin Meyer[1] and Ian G. Colditz[2]

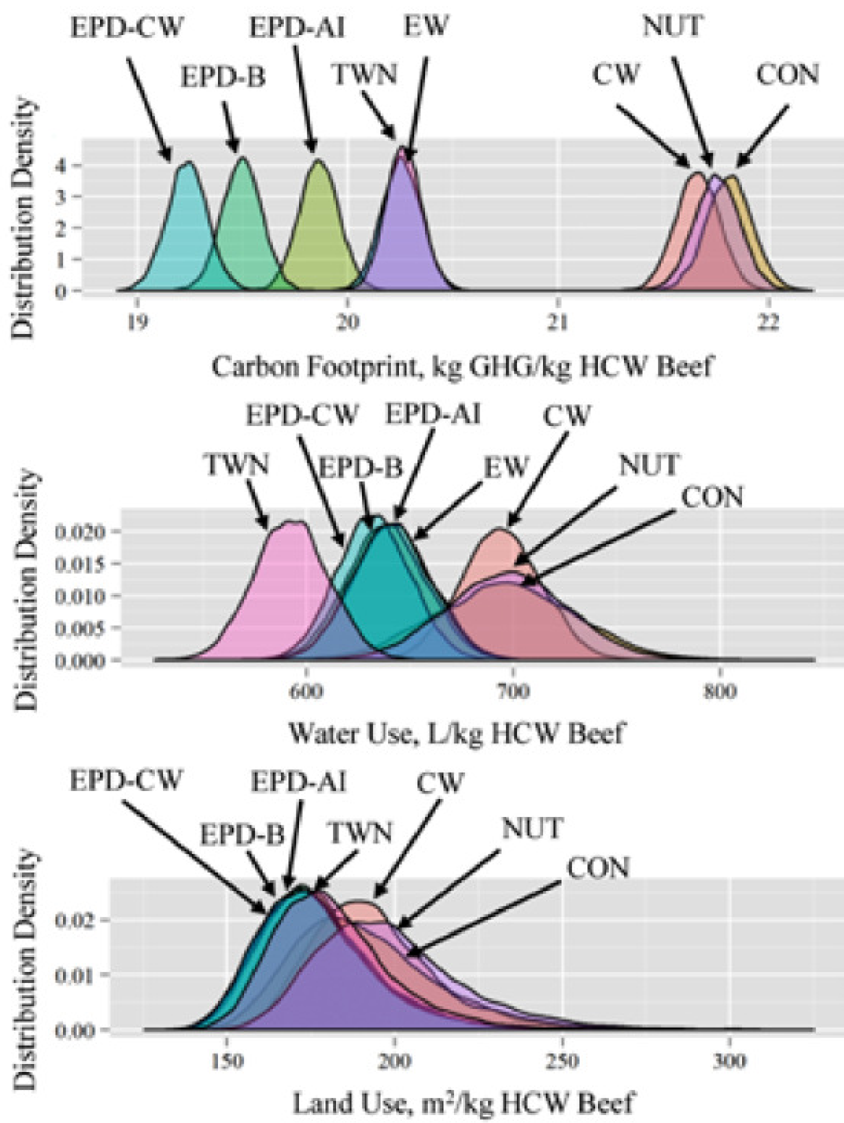
[1]Animal Genetics and Breeding Unit*, University of New England, Armidale, NSW 2351
[2]CSIRO Agriculture, Armidale, NSW 2350

SUMMARY

Genetic parameters were estimated for seasonal body weight changes of cows and weaning weight of their calves in two beef herds run at pasture in a Mediterranean climate. Heritability estimates for weight changes were low. Cows predisposed to lose more weight were also likely to gain more weight, and larger cows had greater genetic potential for weight changes. Low to moderate genetic and permanent environmental correlations indicated that cows with greater seasonal weight changes weaned heavier calves, due in part to the genetic association between weaning weight and cows' mature body weight. Results indicate that in this environment, scope to select for heavy weaning weight without penalty to cow body weight during periods of seasonal feed scarcity is limited.

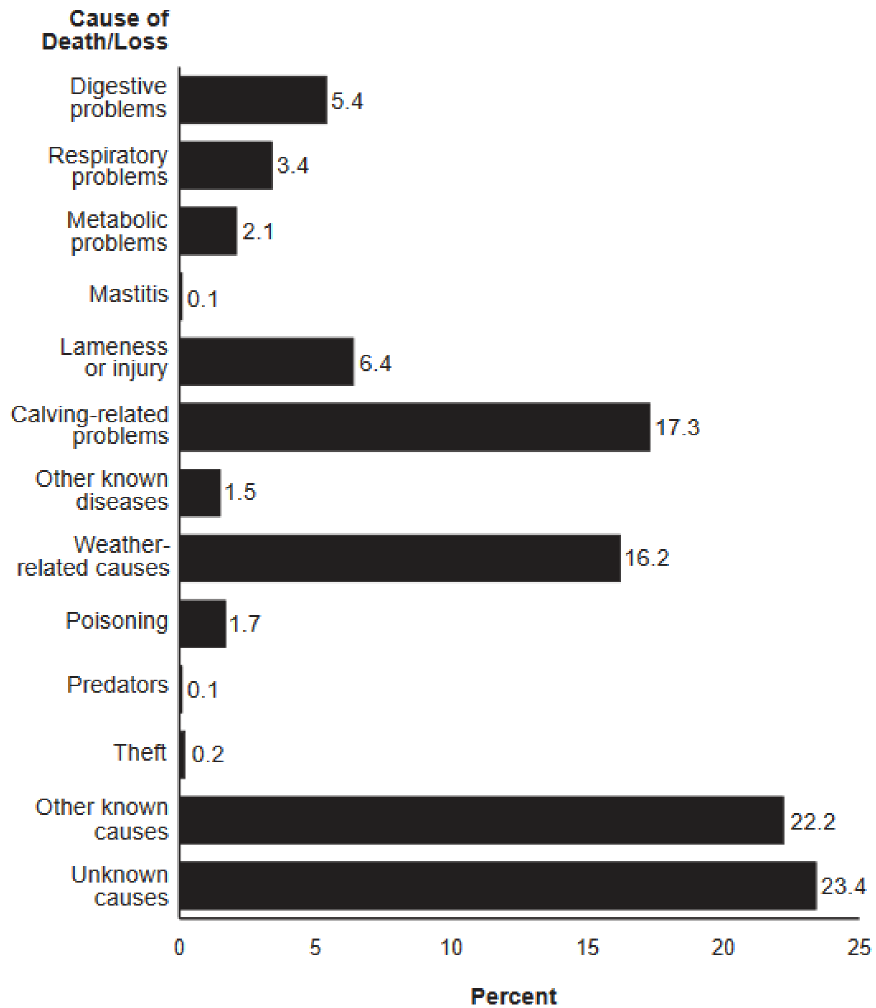
Figure 3. For Calves that Died or were Lost to all Causes Before Weaning in 2007, Percentage of Calves by Cause of and Age at Death or Loss



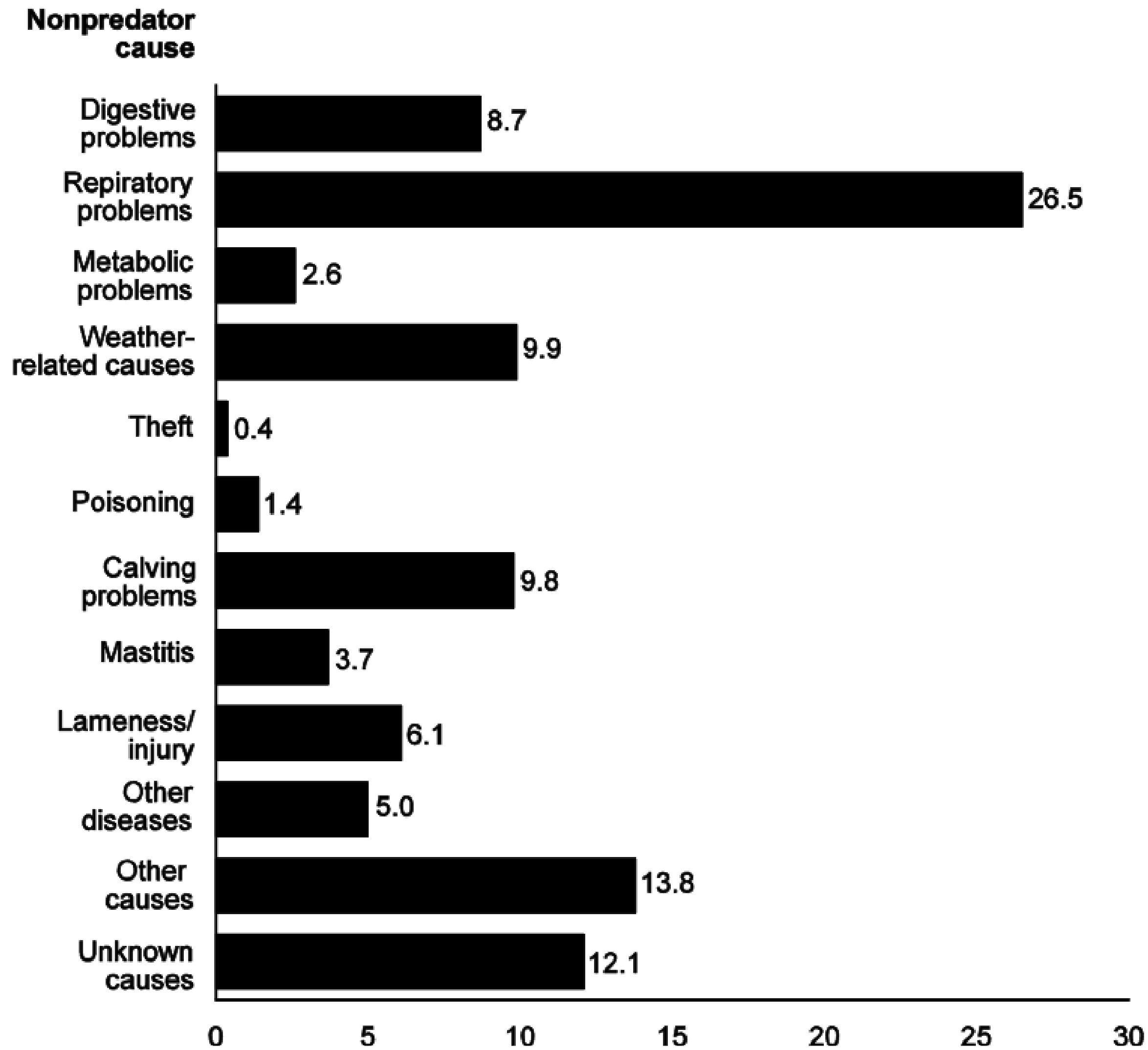


CON – hagyományosan elterjedt tartás, takarmányozás, termékenyítés
NUT – CON+változó takarmányozás
TWN – ikresítés
EW – korai választás
EPD-B – tenyészérték, természetes pároztatás
EPD-AI – tenyészérték, mesterséges termékenyítés
CW – rövid pároztatási időszak (80-ról 60 napra)
EPD-CW – tenyészérték és rövid pároztatási időszak

Figure 5. For Beef Breeding Cattle that Died or were Lost to all Causes During 2007, Percentage of Cattle Lost by Cause of Death



Percentage of 2010 cattle death loss, by cause



Percentage of 2010 calf death losses, by cause

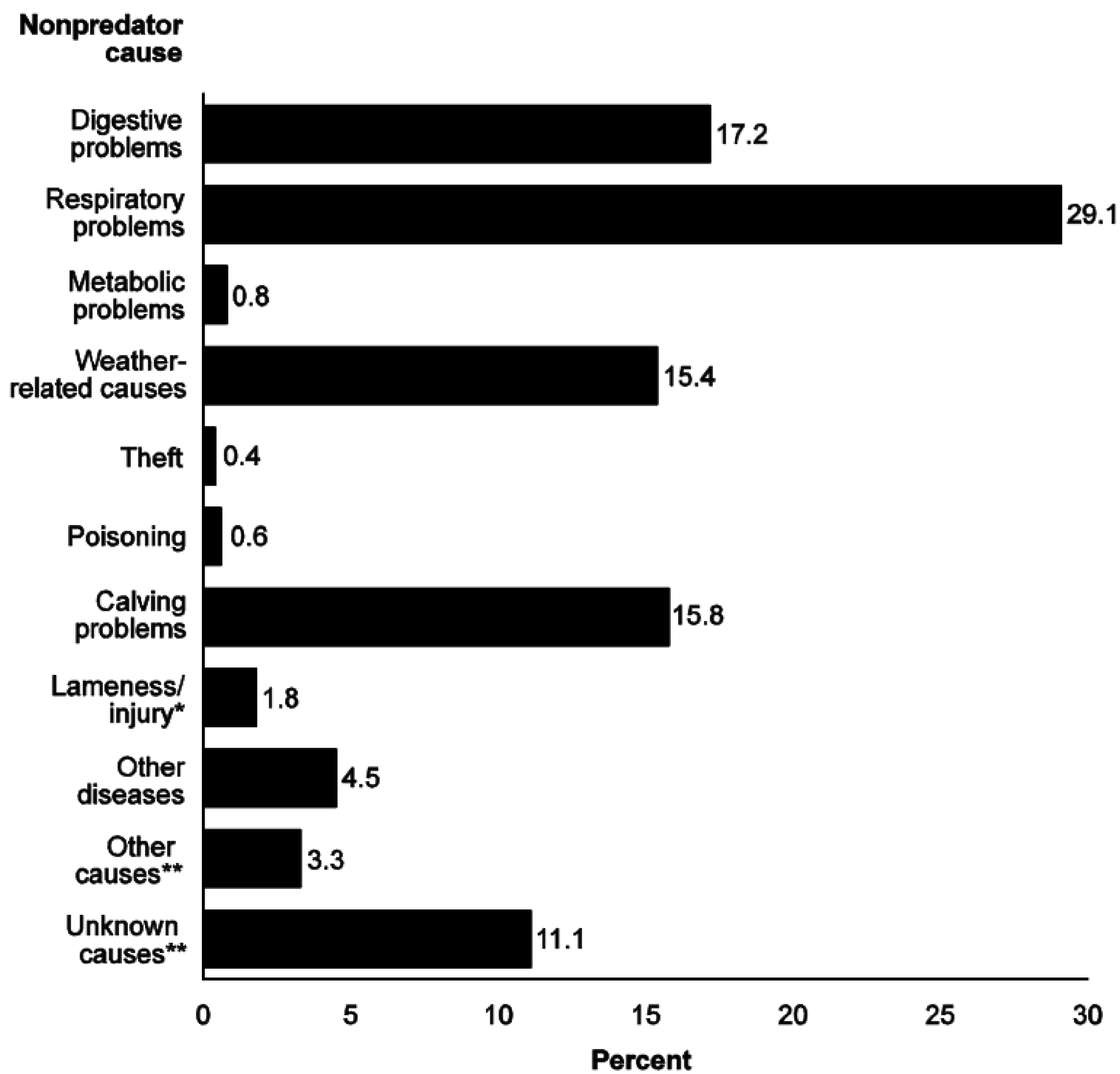


Table 4. Scale of measurement of the linear type traits and genetic correlations (SE in parenthesis) between the linear type traits and reproduction

Trait	Scale	Age at first calving	Calving in the first 42 d of calving season: Heifers	Calving in the first 42 d of calving season: Cows	Calving interval	Survival
Skeletal	1 to 10					
Chest depth	Shallow to deep	0.18 (0.100)	0.00 (0.166)	0.05 (0.234)	0.00 (0.178)	0.27 (0.197)
Chest width	Narrow to wide	0.08 (0.106)	–0.33 (0.160)	–0.43 (0.250)	0.09 (0.183)	0.58 (0.156)
Length of back	Short to long	–0.07 (0.074)	–0.14 (0.125)	–0.45 (0.178)	0.14 (0.136)	0.27 (0.149)
Length of pelvis	Short to long	–0.13 (0.092)	–0.28 (0.145)	–0.21 (0.225)	–0.09 (0.164)	0.14 (0.188)
Height at withers	Small to tall	–0.19 (0.066)	–0.15 (0.118)	–0.37 (0.175)	0.06 (0.131)	0.13 (0.146)
Width at pins	Narrow to wide	–0.21 (0.130)	–0.12 (0.203)	–0.38 (0.300)	0.15 (0.218)	0.07 (0.253)
Width at pelvis	Narrow to wide	–0.07 (0.089)	–0.21 (0.140)	–0.25 (0.214)	0.35 (0.146)	0.00 (0.176)
Width at hips	Narrow to wide	–0.07 (0.076)	–0.16 (0.131)	–0.50 (0.195)	0.01 (0.146)	0.36 (0.154)
Depth of rump	Shallow to deep	0.06 (0.085)	–0.42 (0.133)	–0.29 (0.220)	0.07 (0.161)	0.66 (0.140)
Muscle	1 to 15					
Loin development	Low to high	0.04 (0.074)	–0.02 (0.131)	–0.47 (0.194)	0.17 (0.144)	0.38 (0.145)
Hind-quarter development	Narrow to wide	0.09 (0.062)	0.01 (0.118)	–0.46 (0.176)	0.34 (0.125)	0.10 (0.144)
Width at withers	Narrow to wide	0.05 (0.086)	–0.23 (0.142)	–0.07 (0.210)	0.20 (0.151)	0.49 (0.147)
Width behind withers	Narrow to wide	0.00 (0.075)	–0.01 (0.132)	–0.37 (0.194)	0.31 (0.137)	0.27 (0.155)
Development of inner thigh	Low to high	0.09 (0.083)	–0.24 (0.138)	–0.31 (0.206)	0.34 (0.146)	0.13 (0.173)
Functional and other	1 to 10					
Fore leg, front view	Toes out to toes in	–0.05 (0.122)	0.01 (0.183)	–0.11 (0.258)	0.33 (0.188)	0.15 (0.215)
Hind leg, side view	Straight to sickled	0.32 (0.093)	0.07 (0.159)	–0.25 (0.234)	0.23 (0.168)	–0.16 (0.194)
Hind leg, rear view	Toes out to toes in	0.07 (0.104)	0.48 (0.147)	–0.59 (0.229)	0.22 (0.175)	–0.04 (0.209)
Locomotion	Poor to good	–0.28 (0.084)	–0.06 (0.150)	–0.15 (0.217)	0.26 (0.161)	0.39 (0.165)
Body condition score	Lean to fat	0.14 (0.108)	–0.35 (0.167)	–0.01 (0.190)	–0.18 (0.186)	0.70 (0.155)
Docility	Aggressive to docile	0.08 (0.079)	–0.18 (0.131)	–0.02 (0.193)	0.04 (0.145)	0.04 (0.164)

Berry és Evans, 2014