LOT	FREEZEBRAND	WEIGHED 19.2.2020	BOONAROO BULL SALE 2020	Sire	Calving Ease Star
1	P49	732kg	Calving Ease, top 5% growth	Kasbah	★
2	P94	788kg	Top 5% growth	Kasbah	
3	P57	780kg	Calving Ease, growth, muscle, fat cover	GPS J6	★
4	P100	786kg	Calving Ease, growth, muscle	Revenue	★
5		kg	WITHDRAWN		
6	P236	790kg	Growth, fat cover, fertility	Bartel K129	
7	P295	808kg	Growth in the top 2% of the breed	Jive J126	
8	P263	790kg	Trait leader for Calving ease, growth & muscle	Keystone K21	
9			WITHDRAWN		
10	P203	722kg	Short gestation, high growth, marbling	Lackey	
11	P120	682kg	ET brother to Lot 12	Lackey	
12	P114	754kg	Calving Ease ET brother to Lot 11	Lackey	★
13	P119	756kg	Calving Ease, fertility	Bartel K117	★
14	P19	694kg	Calving Ease, growth, fertility, muscle, fat	Kasbah	★
15	P113	738kg	Calving Ease, growth, fertility, muscle, fat	Revenue	★
16	P201	698kg	Calving Ease, growth, fertility, muscle	Lackey	
17	P153	822kg	Growth, fertility, muscle	Kansas	
18	P301		WITHDRAWN		
19	P209	778kg	Growth, fertility	Keystone K21	
20	P130	768kg	An outstanding all-rounder,	Kansas	★
21	P297	746kg	Top 4% of the breed for growth	Jive J126	
22	P313	726kg	Growth, muscle & fat cover	Kalari K96	
23	P121	762kg	ET CALF Short gestation, growth, fat cover	Freedom NZ	
24	P167	724kg	Top 1 % in the breed for growth	GPS J6	
25	P96	678kg	Calving ease, growth, milk, fertility & marbling	Lackey	★
26	P2		WITHDRAWN		
27	P22	712kg	Calving Ease, growth & milk, muscle & marbling	Lackey	★
28	P10	708kg	Calving Ease, growth, muscle & marbling	Kasbah	★
29	P91		WITHDRAWN		
30	P286	736kg	Calving Ease, growth, muscle & marbling	Bartel K129	★
31	P219	800kg	Calving Ease, growth & marbling	Keystone K21	★
32	P230	718kg	High growth, muscle and fat cover	Kalari K96	
33	P107	712kg	Outcross genetics	Steakhouse 489 NZ	
34	P46	734kg	Calving Ease, growth, milk & fertility	Kasbah	★
35	P269	696kg	Short gestation, milk, growth, marbling	Lackey	
36	P111	738kg	Calving Ease, growth, fertility	Stoker NZ	★
37	P108	698kg	High growth	Lackey	
38	P244	824kg	Calving Ease, high growth and milk	Kernal K72	★
39	P30	kg	WITHDRAWN		
40	P320	674kg	Calving Ease, high growth & muscle	Lackey	★
41	P101	kg	WITHDRAWN		
42	P82	778kg	Short gestation and growth	Freedom NZ	
43	P48	660kg	Calving Ease with growth	Lackey	★
44	P28	702kg	Calving Ease with growth, scrotal, fat cover	Kasbah	★
45	P192	kg	WITHDRAWN		
46	P146	704kg	Eye muscle with fat cover	Stoker	

47	**P137**	**760kg**	High growth, outcross genetics	**Freedom NZ**	
48	**P258**	**664kg**	High growth	**Keystone K21**	
49	**P247**	**696kg**	Calving Ease, growth & high milk	**Lackey**	★
50	**P267**	**676kg**	Good growth, calving ease & milk	**Livewire L12**	
51	**P158**	**728kg**	Twin to Lot 52	**Kansas**	
52	**P159**	**700kg**	Twin to Lot 51	**Kansas**	
53	**P41**	**728kg**	Calving Ease,	**Kasbah**	★
54	**P26**	**664kg**	Calving Ease	**Kasbah**	★
55	**P291**	**744kg**	Calving Ease	**Bartel K129**	★
56	**P189**	**714kg**	Calving Ease	**Joyner M147**	★
57	**P20**	**712kg**	Calving Ease	**Kasbah**	★
58	**P80**	**700kg**	Calving Ease	**Lackey**	★
59	**P260**	**736kg**	Calving Ease	**Jive J126**	★
60	**P105**	**784kg**	**Has a pink eye scar**	**Livewire L12**	
61	**P271**	**684kg**	Calving Ease	**Kernal K72**	★
62	**P325**	**742kg**	Growth in Top 4% of the breed	**Keystone K21**	
63	**P170**	**722kg**	Calving Ease, Fat cover top 5%	**Jive J126**	★
64	**P155**	**664kg**	Big scrotal, all-rounder	**Livewire L12**	
65	**P179**	**704kg**	Top 13% of the breed for Fat cover	**Kansas**	
66	**P25**	**674kg**	Top 19% gestation length	**Freedom NZ**	
67	**P318**	**720kg**	Calving ease with growth & fat cover	**Kansas**	
68	**P37**	**728kg**	Top allrounder for calving ease growth and carcase	**Lackey**	
69	**P123**	**746kg**	Top allrounder for short gestation & growth	**Lackey**	
70	**P280**	**kg**	**WITHDRAWN**		
71	**P243**	**738kg**	Top allrounder for calving ease growth and carcase	**Bartel K129**	★
72	**P140**	**732kg**	Top 4% for growth	**Livewire L12**	
73	**P55**	**652kg**	Calving Ease, top 17% fat cover	**Kasbah**	★
74	**P126**	**720kg**	Calving Ease, growth, milk & muscle	**Bartel K117**	★
75	**P246**	**714kg**	Calving Ease, growth, milk, muscle with fat cover	**Livewire L12**	★
76	**P85**		**WITHDRAWN**		
77	**P59**		**WITHDRAWN**		
78	**P29**		**WITHDRAWN**		
79	**P142**		**WITHDRAWN**		
80	**P245**	**678kg**	Growth in the top 25% of the breed	**Keystone K21**	
81	**P268**	**688kg**	Growth in the top 2% of the breed	**Lackey L27**	
82	**P43**	**728kg**	Calving ease with growth	**Freedom NZ**	★
83	**P331**	**742kg**	Top 12% of the breed for 200 growth	**Kansas**	
84	**P138**		**WITHDRAWN**		
85	**P109**	**710kg**	Calving Ease and milk		★
86	**P299**		**WITHDRAWN**		
87	**P235**	**662kg**	Calving ease and eye muscle	**Bartel K129**	★
88	**P47**	**722kg**	Moderate calving ease and high growth	**Kasbah**	★
89	**P311**	**728kg**	Short gestation, high growth	**Lackey L27**	
90	**P237**	**646kg**	Good scrotal, good fat cover	**Livewire L12**	
91	**P98**	**642kg**	Good fertility, good fat cover	**GPS J6**	
92	**P199**	**662kg**	Short gestation, high milk & fertility	**Bartel K129**	★
93	**P65**	**698kg**	Top allrounder for calving ease growth and carcase	**Kasbah**	★

94	**P17**	**706kg**	An all-rounder, growth muscle and fat cover **Kasbah**	
95	**P39**	**658kg**	Calving ease, fertility & fat cover, marbling **Kasbah**	★
96	**P197**	**722kg**	Growth & fat cover, marbling **Keystone K21**	
97	**P338**	**688kg**	Short gestation, low birth weight, huge growth **Kernal**	★
98	**P233**	**676kg**	Short gestation, low birth weight, huge growth **Lackey**	★
99	**P330**	**700kg**	Calving Ease, high milk, big scrotal **Keystone K21**	★
100	**P67**	**646kg**	Calving ease, high eye muscle area & fat cover, marbling **Lackey**	★
101	**P97**	**654kg**	Calving ease, Scrotal, high eye muscle area & scrotal size **Lackey**	★
102	**P78**	**732kg**	Calving ease, Short gestation, growth high fat & fertility **GPS J6**	★
103	**P92**	**630kg**	Calving ease, , high eye muscle area & scrotal size **Freedom NZ**	★
104	**P184**	**648kg**	Calving ease, Short gestation, high fat **Kalari**	★
105	**P249**	**640kg**	All-rounder, high milk **Keystone K21**	
106	**P300**	**654kg**	Well balanced data **Kalari K96**	
107	**P70**	634KG	Calving ease, high milk **Freedom NZ**	★
108	**P252**	**672kg**	High growth, carcase weight **Kansas**	
109	**P279**	**708kg**	Growth in the top 20% of the breed **Kalari K96**	
110	**P211**	**650kg**	All-rounder with high milk & scrotal size **Keystone K21**	
111	**P163**	**626kg**	Calving ease, Short gestation, high fat & fertility **Kalari**	★
112	**P145**	**666kg**	Short gestation, high milk & calving ease **Joffa**	★
113	**P164**	**676kg**	Short gestation, good growth **Lackey L27**	★
114	**P171**	**680kg**	Calving Ease, Short gestation, & fat cover **Kansas**	★
115	**P143**	**704kg**	Short gestation, high growth & milk **Livewire L12**	★
116	**P27**	**722kg**	Good allrounder growth calving ease, carcase **44CM SCROTAL** **Gravity G13**	★
117	**P229**	**754kg**	Good allrounder **39CM SCROTAL** **Kansas**	★

Bulls have been drenched with Dectomax Injectable on 16.12.2019
Vaccinated with Pestigard twice (protection from Pestivirus)
Ear Notched to detect persistantly infected Pestivirus Carriers
Vaccinated with 5 ml Vibrovax twice (protection from Vibriosis)
Vaccinated with 7in1 three times (is used to prevent Leptospirosis and major clostridial diseases)
Vaccinated with Piliguard and given Arrest Easy dose (is used in combination to prevent Pink Eye)

All bulls have been fertility tested, semen morphology has been conducted and found to be of a fertile level.
Please read the article on the next page to gain some understanding of **the effects on bulls fertility through management between now and joining.**

Crushside semen evaluation has been completed by Nationwide Artificial Breeders.
The semen from all sale bulls has been evaluated microscopically and meets the required standards for progressive motility, concentration, morphology, infection and percentage of live sperm. These bulls achieved normal erection with no evidence of injury. A satisfactory result gives a high chance of fertility,
However, please observe your new bull in action when first out with his cows, he must complete his service with a thrust to be successful. To manage risk , rotate your bulls after the first 6 weeks where possible
Technician: Drew Pickford
Mobile : 0428 925 255
Semen Analysis 2006
The University of Sydney

Biography:
Dr. Colin Palmer is an Associate Professor of Theriogenology (Animal Reproduction) at the Western College of Veterinary Medicine. Originally from Nova Scotia, Dr. Palmer worked in mixed practices in Ontario and British Columbia and has owned/operated a practice in Saskatchewan. Dr. Palmer along with his wife Kim and children Lauren, Emily and Carter run a herd of purebred Red Angus cattle under the KC Cattle Co. name.

A Breeder's... Veterinary Perspective

Causes of Abnormal Sperm Morphology

This article is really a continuation of two previous articles, Breeding Bull Management Summer 2009 and Tips on Managing the Newly Purchased Bull Spring 2015. In the 2015 article I wrote that the two main causes of declines in semen quality were heat and stress. By far the most common cause of heat is fat in the neck of the scrotum. Fever, local inflammation, hernias and extremely hot weather are much less prevalent. Feeding high energy diets from pre-weaning up to the yearling stage doesn't appear to result in as much scrotal fat accumulation compared with feeding similar diets after 16 to 18 months of age. Breed and genetic line probably influence where and how fat is laid down as much as anything. British breeds, or British breed-based cattle; particularly, Herefords and Speckle Park are more prone to scrotal fat accumulation. Angus accumulate fat in the scrotal neck and also under the skin of the entire scrotum causing the testicles to look plump with almost no scrotal neck. The temptation to overfatten bulls for sale as two-year olds is the root cause of many problems - obesity has also been linked to poor sex drive, lameness and premature culling. Advantages assumed by buying a two-year old over a yearling bull can easily be lost due to overfeeding.

Stressors associated with increases in sperm abnormalities have to be of at least 3 or 4 day duration. Persistent pain from lameness or fighting injuries, bad weather, or perhaps dehorning have all been demonstrated to cause substantial declines in the proportion of normal sperm due to stress. The appearance of sperm exhibiting the distal midpiece reflex appear first and may be the only abnormality in cases of mild, short-lived stressors. Sperm exhibiting the distal midpiece reflexes can appear in substantial numbers and almost completely disappear within as short as a 3 week window. More severe or long-standing stressful events will result in the appearance of different sperm defects arriving in the sperm picture in a sequence dictated by where the defect occurred in the sperm production process. Very long standing stressors such as a bad foot rot continue to affect many stages along the sperm production process; therefore, a number of different sperm defects will be present; for example: distal midpiece reflexes; proximal droplets; pyriform heads and nuclear vacuoles.

Other causes of poor sperm morphology include genetics, toxins, season, puberty and nutrition. There are a few inherited sperm defects such as the Dag defect and the Tail Stump defect where high numbers of sperm are affected and a genetic link has been proven. Fortunately these are relatively rare. For many other defects a genetic basis has been proposed, but not substantiated. Complicated modes of inheritance and variable expression of the defect are a large part of the reason that a genetic link remains suspected at best. For instance, several of the abnormal sperm morphologies that are suspected of being heritable when in large numbers, may also appear in small to moderate numbers usually with other sperm defects as a result of some other disturbance of sperm production. The temptation to point fingers at the breeding program, therefore, should not be your first response.

Puberty requires a few to several months to be completed. The onset of puberty is marked by a low sperm concentration and a high proportion of abnormal sperm. Once sexual maturity has been achieved the bull is able to produce a concentrated semen sample and should have greater than 70% morphologically normal sperm. At the onset of puberty there are a variety of sperm abnormalities present including abnormal head shapes, tightly coiled midpieces and proximal droplets. As puberty progresses proximal droplets become the most prevalent abnormality. Proportions of proximal droplets can be as high as 30, 40, 50, or even 60%; usually with a smattering of other defects. By and large, the pubertal sperm picture is the reason for the Decision Deferred category on the Western Canadian Association of Bovine Practitioners (WCABP) breeding soundness evaluation form. This classification implies that the bull will likely have a Satisfactory classification soon, but is not Satisfactory on the day of the test. A Decision Deferred classification doesn't seem as final as an Unsatisfactory, "the bull is no good", classification. Proportions of proximal droplets can decline rather quickly within 3 weeks to a month, so retesting in due time is recommended. Sperm with the proximal droplet are not capable of fertilization and it appears that when there are large numbers of proximal droplets even the normal appearing sperm have poor fertilizing potential. Using a bull with high numbers of proximal droplets for breeding has been proven to result in low conception rates. Puberty and scrotal circumference are closely related with bigger testicles being predictive of puberty beginning at an earlier age. Bulls with large scrotal circumferences and pubertal sperm pictures, i.e. proximal droplets, likely are experiencing prolonged puberty. A pubertal sperm picture is not a "rusty load". The "rusty load" term was coined for bulls that accumulate, or build up sperm in their tubular duct system. These are usually older bulls that continue to store sperm during periods of sexual rest rather than clean out old sperm daily with urination. The typical scenario at semen testing is a large volume of semen (30 plus mL), containing lots of dead sperm with detached heads.

Although cattle can breed year round there is a seasonal effect on sperm production which is especially evident in northern climates. More bulls will fail their semen test during the winter and early spring months than during the late spring and summer. This can be problematic for those hosting early spring bull sales. Seasonality may also be confounded by nutrition – feed quality in the winter often falls short of lush summer pasture. Seasonal/ nutritional sperm pictures usually present with a smattering of defects with some bulls being more affected than others.

With bull sale season peaking in March and turnouts on many commercial operations not occurring until mid-June to mid-July there are many circumstances that can have a negative effect on sperm quality. Over the last couple of years I have had the opportunity to retest more than a few bulls within a few to several weeks after delivery to their new homes. A few, probably less than 5%, of these bulls fail my breeding soundness evaluation due to poor semen quality. Two things that must be kept in mind is that: 1) a breeding soundness evaluation is only a snapshot in time; many things can happen after that; and 2) stress can have a negative effect on semen quality that is variably expressed amongst individuals. Many years ago I was freezing semen on a fancy show dog that sired many litters, but I could never collect a freezable quality sample while he was being shown. My best advice for bull buyers is to try to minimize stress amongst your newly purchased bulls. Branding, fighting, protection from inclement weather, nutrition (feed, minerals, vitamins, water quality and quantity), and even new surroundings can all be sources of stress for your bulls. I suspect that these stressors are even worse for yearling bulls and akin to the stress of weaning. If stress in inevitable allow enough time for your bulls to acclimate before retesting, say 2 or 3 months.

In closing: Don't just think about bull management think of yourself as a manager of semen production and distribution!