

RAFT BREEDING

NEWS

research | advanced breeding | food futures | training



Spring 2016

Bull Breeding Soundness Evaluation

As spring calving in full swing we are already planning for the breeding season that will produce next year's calves; this means making sure you have enough bull power and that the bulls in the team are all capable of good fertility results.

We use bull side visual assessment of semen density and motility, but also transport a chilled sample back to the practice to run through our eSemenRate^{ab} which objectively assesses motility, density and a number of other physiological parameters that can help predict the fertility of the semen sample. This extra information helps us to make informed decisions on the breeding potential of bulls on farm.

By comparing results amongst different bulls in a team you can make decisions about how many cows to put to each bull/ whether or not to use a particular bull. The following results were used to determine which bull to use and which bull to cull on one farm; both achieved similar results on the standard breeding soundness examination but the extra data from the eSemenRate analysis made the decision clearcut!

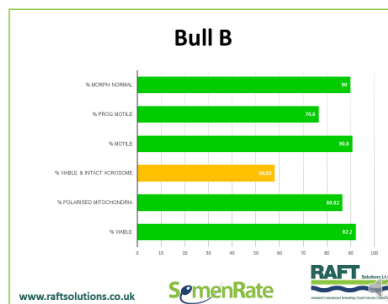
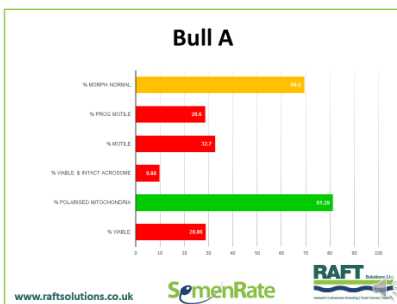
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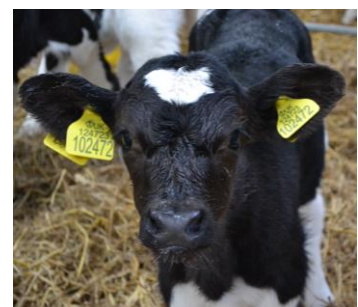
Breeding and Genetics Course

Deciphering the Bull From the Jargon

The contribution of genetics towards the performance of the herd should not be underestimated. A structured approach to breeding can be a **highly cost effective** way of improving herd performance; remember genetic improvement is permanent and cumulative over generations.

The **Dairy Genetics Farmskills course** ensures farmers leave understanding the ins and outs of interpreting a bull proof. The concept of genetic indexes is explained and explanation given to how these are calculated and expressed for the different traits.

When looking to improve the performance of your herd through breeding, a key understanding of the breeding goals you are trying to achieve is important. What cows suit your system? Is your current breeding strategy heading in the right direction? Are you using the correct selection criteria when it comes to selecting males and females for mating? For more information of this course contact the RAFT office on 01765 645893.



A bit about the team...



Jonathan
Statham



Jon
Reader



Neil
Eastham



Mark
Spilman



Dr. Andre
Northey



Andy
Adler



Rachel
Hayton



Dr. Katie
Burton



Becky
Gage



Gareth
Foden

Seasonal Breeding Activity

It has been a very busy breeding season with lots of bull testing and breeding activity taking place across the board. We thought that we would like to show a picture of some Wagyu calves from a successful embryo transfer day which took place last autumn. If you have any photos you would like to share with us to put in future RAFT Breeding newsletters then welcome you to contact us in the office.



We have also had an extremely successful day of collecting 24 embryo's during an embryo collection from one heifer! These embryo's have now been transferred into recipients and the farm are awaiting the arrival of some bountiful calves.

If there is any further information you would like to know about the breeding services we offer here at RAFT, then why not take a look at our website? We have a collection of fact sheets available giving an overview of what each service entails and how it can benefit you and your farm.

Misplaced one of our newsletter or want to reread one of our articles? No problem! All our breeding newsletters are now available to read online and download from our website! These can be found under the breeding tab on the homepage.

NEW Staff Member

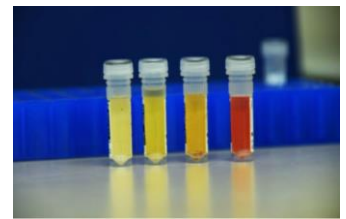
Sara Etell has joined the RAFT team from 2nd May, based in Synergy Farm Health, Dorset. Sara has come from the pharmaceutical sector and will be looking after the rollout of our new Genomics service, which we're looking forward to telling you more about in the coming months. Sara will also be the main point of contact for breeding work in the South, working with the wider vet and tech team at Synergy.

Services we offer:

- Embryo Collection and Embryo Transfer
- Repeat Breeder
- Ovum Pick-Up (OPU)/IVF
- Bull Breeding Soundness Examinations
- Semen Collection
- SemenRate Evaluation Service
- Dye Testing
- Deep Uterine Horn Flushes
- Day Centre/ Livery for Bespoke Programmes
- Semen and Embryo Storage

For more information contact us on 01765 645893

Oviduct Patency (Dye) Testing



Repeat breeder cows are a common problem in many herds. They are an expensive drain on resources (i.e. increased semen costs, lost time and risk of culling) but culling may not be the most desirable option, even in current challenging times, especially with high value individuals and important genetic lines. There are other options that can be tried before this becomes the only way forward.

A potential reason for a cow not being able to get in calf through artificial insemination or natural service by a stock bull is because of blocked oviducts. Oviducts are the tubes that connect the ovaries to the uterus, which the ovum must travel down to be fertilised by the sperm and implant in the uterus. **This blockage would prevent the cow from becoming pregnant even if she still showed signs of coming into heat normally.**

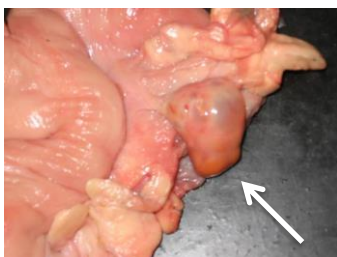
Repeat breeder embryo transfer can be effective in such cases, but a more conclusive option to consider before deciding to cull a cow is to perform an oviduct patency test; often known as a 'Dye Test'. This will allow the vet to diagnose a blockage in the oviducts and if an obstruction is detected it is possible to treat with saline irrigation under pressure at the time the assessment is made. Dye testing and treatment can result in cattle going on to breed successfully, avoiding the loss of a high value animal for the farm.

The test procedure involves flushing a solution of saline containing pink 'PSP' dye into the oviducts via a uterine catheter. If the oviducts are clear, the dye will enter the abdominal circulation and rapidly be filtered back through the kidneys into the bladder. Collection of urine at regular intervals over 40 minutes via a bladder catheter should show the urine turning pink. If the oviducts are blocked, the dye will not be able to pass into the bladder and the urine will remain yellow. In this case the vet can try to treat the animal to unblock the oviducts using the same apparatus as the dye test by carefully flushing forward saline under pressure instead of the dye solution.

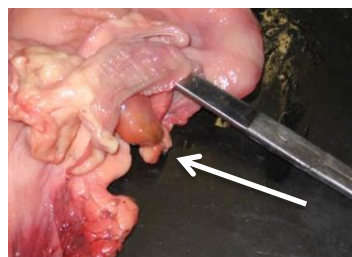


A uterus

Dye testing can also be a useful tool in the preparation of embryo collection donors - dye testing the donor before beginning a flush programme means you can be sure that sperm and ovum are able to meet in the oviduct as required for fertilisation to occur. This eliminates one of the potential hurdles in a donor's programme. If you are interested in discussing this procedure further then please get in touch with the office using the contact details overleaf.



An ovary



Ovary attached to the oviduct

	Code	Breed	Sex	LC	Srv Date	ΔServes	Pt
100350	72	HF	C	7	17/03/15	3	
103284	3284	HF	C	1	20/03/15	3	
501930	1005	HF	C	4	26/03/15	3	
502196	1056	HF	C	3	26/03/15	3	
303223	3223	HF	C	1	28/03/15	3	
301171	1203	HF	C	2	30/03/15	3	
403308	3308	HF	C	1	30/03/15	3	
400570	1119	HF	C	5	30/03/15	3	
403287	3287	HF	C	1	31/03/15	3	
502449	1144	HF	C	3	31/03/15	3	
700489	28	HF	C	5	04/03/15	4	
500635	560	HF	C	8	13/03/15	4	
100350	72	HF	C	7	19/03/15	4	
101940	1013	HF	C	4	19/03/15	4	
502141	1073	HF	C	3	22/03/15	4	
202578	2578	HF	C	2	25/03/15	4	
102472	1150	HF	C	3	26/03/15	4	
300555	23	HF	C	6	30/03/15	4	
200470	29	HF	C	5	25/03/15	5	
502498	2498	HF	C	2	06/03/15	6	
201142	1211	BF	C	2	08/03/15	6	
301115	1360	HF	C	2	15/03/15	6	
502295	1130	HF	C	2	05/03/15	7	
500742	1122	HF	C	2	06/03/15	7	
201913	992	HF	C	4	19/03/15	7	
702261	1100	HF	C	3	23/03/15	7	
500880	2030	HF	C	5	05/03/15	8	
700468	2107	HF	C	7	13/03/15	8	
701182	1361	HF	C	2	26/03/15	8	
401929	1001	HF	C	4	23/03/15	9	
401158	1209	HF	C	2	31/03/15	9	
500791	1201	HF	C	2	02/03/15	11	
500791	1201	HF	C	2	28/03/15	12	

Repeat inseminations are an expensive waste: increased semen costs, lost time and risk of culling

Embryo Collection and Transfer Service

Our service aims to help clients produce more calves from their hardiest, healthiest and most productive animals by using Embryo Transfer - a well established breeding technology. We believe that breeding for improved health and welfare is the future for sustainable beef and dairy farming. It is acknowledged worldwide that the fastest and most economical method of genetic multiplication is by using Embryo Transfer and in both dairy and beef cattle ET is of great value for increasing the numbers of top genetic animals in a herd.

What is Embryo Transfer and how does it work? Embryo Transfer is the process by which an embryo is collected (flushed) from one female (the donor) and transferred to another female (the recipient) to produce a natural donor calf from the recipient. In practice it means that a genetically superior donor cow receives a series of hormone injections over several days in order to produce more ova (eggs) than normal – a process called superovulation. After superovulation the donor is inseminated with bull semen of the farmer's choice. The fertilised egg cells will develop into embryos and be "flushed" from the donor cow after seven days. The embryos will be transferred into recipient animals of genetically lower quality using one embryo per recipient. The recipient carries the embryo calf to birth and, where applicable, raises the calf.

RAFT uses five principle points for delivering its ET Service:

1. Flush your healthiest, hardiest and most productive cows – ie, the "ideal" cows that work best for you on your farm and accelerate the economic performance of your herd. Prospective embryo donors can be examined and selected during routine vet visits and if suitable for flushing the RAFT ET Team will be contacted. Superovulation and aftercare will be monitored both by the routine vet and the RAFT ET Team. If required the artificial insemination can also be done by us.

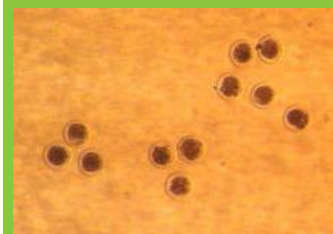
2. Flush your ideal cows anytime and as often as you want to – Between 70 and 100 days after calving is the best time for flushing cows. Donor cows can be flushed repeatedly every 7-8 weeks before being inseminated normally or run together with the bull to get pregnant again. Collected embryos can be frozen and stored indefinitely in liquid nitrogen just like semen.

Numbers of extra calves born using ET: On average four transferrable embryos are collected per flush. Average pregnancy rates are 50% which leaves two pregnancies from four embryos producing one bull and one heifer on average. Using ET once each year on a single donor equates to producing one additional heifer per year. Together with the donor cow's regular pregnancy following the flush this equates to 1.5 heifers per year. However, the calculation changes significantly if we flush eight, 12 or more embryos per flush (which means two, three or more heifers per year) or if we flush a donor cow several times repeatedly.

3. Transfer embryos anytime you want to – Fertility varies from farm to farm and throughout the year so always do your transfers at the most fertile time of year using healthy recipients of lowest genetic value. Block calving systems enable the RAFT ET team to flush donor cows who are settled in lactation, to freeze the embryos at the time of collection and to transfer them at the start of the next service period. We are also able to implant single frozen embryos on demand seven days after natural heat.

4. Consider using genomic evaluations within your herd to identify and confirm the breeding potential of your ideal animals and enter these into your herd ET strategy – Genomics will help significantly to identify superior heifers which can be flushed before breeding. Selecting phenotypically and genomically for certain health traits (fertility, mastitis, lameness, longevity, etc.) and production traits combined with Embryo Transfer will provide the maximum breeding progress. Increasing the number of offspring from genetically superior females will lead to a rapid genetic change in your herd including improving levels of health, welfare and production.

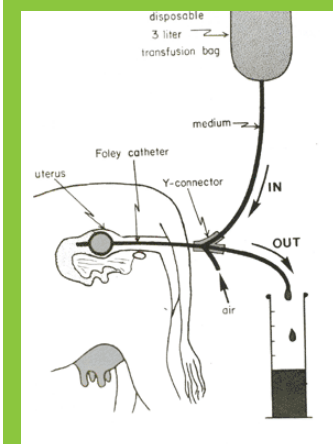
5. Talk to RAFT about setting up a Herd ET Strategy over one to five years in order to generate the highest economic value from using Embryo Transfer in your herd – Don't make Embryo Transfer a one cow gamble.



Collection of embryo's



Analysing embryo's



Schematic Diagram of a 3-way flushing of a cow



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