

FARMWISE MATING SEMINARS - 2009

Welcome to the 2009 mating seminars run by FarmWise Waikato.

Mating is always a vital part of the farming calendar and this year has more challenges than normal.

A lower payout year combined with a poor winter has left many cows below condition score targets, putting at risk mating performance and subsequently impacting negatively on next years calving spread.

This has the potential to impact heavily on next season's profitability.

Since the beginning of calving, good grass growth has allowed pasture covers to recover significantly but as we will illustrate today, this has also created some challenges that we need to address.

Our objectives today are therefore to give good practical advice on:

- **Pasture management and its impact on mating**
- **Oestrus detection techniques**
- **Bull management**
- **Financial implications of different options**

In other words a refresher course in good mating management with some techniques and options that are especially relevant in a low payout situation.

We can also create a mating plan specific to your farm. Feel free to contact us at any time for help with this, or in any aspect of farm management

Regards
The FarmWise Team

1. Pasture - Quality vs. Quantity

Whilst it has been wonderful to see the grass growth of recent weeks, I have also been concerned about some of the pasture management applied at this time.

Some of the grazing residuals seen have been in excess of 2000 kg DM/ha, compared to industry recommendations of 1500-1600 kg DM/ha residual.

Quite simply, higher residuals will result in a drop in pasture quality in the subsequent grazing round due to the increase in stalky material, which in many cases cows will not eat.

This is why a fully fed cow may still be on a declining plane of nutrition with the resulting loss of mating performance and also the impact on milk solid production as illustrated below:

18 kg of pasture DM at 12 MJME/kg DM will yield:

$$18 \times 12 = 216 \text{ MJME}$$

= Enough to maintain a 500kg cow and produce 2 kg MS without weight loss

BUT

If pasture quality is poorer at 11 MJME/kg DM

$$18 \times 11 = 198 \text{ MJME}$$

= Enough to maintain the cow and produce 1.78kg MS

OR

1.9kg MS/cow/day, and weight loss of 325grams/day (2 kg/week)

Controlling the quality can be as simple as doing regular farm walks and knowing the target pre-grazing level of your individual system.

Trigger level = Cows/ha X Target intake X Rotation length + Target residual

Example:

$$\begin{aligned} \text{Trigger level} &= 3 \text{ cows/ha} \times 18\text{kg DM/cow/day} \times 25 \text{ Days} + 1500\text{kg DM/ha} \\ &= 1350 \text{ kg DM/ha} + 1500\text{kg DM/ha} \\ &= \mathbf{2850 \text{ kg DM/ha}} \end{aligned}$$

Paddocks above this level are potentially surplus to requirements, and could be closed for silage once past "balance date".

Leaving paddocks out of the rotation or pre-mowing are two management tools that can help preserve pasture quality into the next round.

Condition score, feeding levels and the anoestrus period.

There is a direct correlation between these factors, problems this mating could be directly related to condition of cows at calving.

This can be seen in the table below, which shows how many days you can typically expect for cows to take from calving to first cycle.

Feeding level (kg DM/cow/day)				
BCS	6	9	12	15
3	58	52	49	46
4	50	47	43	40
5	44	41	38	34
6	39	35	32	28

Source: Milk Production from Pasture C. Holmes

The effect is plain to see. One condition score behind target is the equivalent of a weeks extra anoestrus.

2. Feeding Targets

The goal now is to feed your cows at least as much as they had the day before if not more.

It is very important that the cows are being fed high quality pasture.

Grazing management is crucial.

Aim to keep pastures between 2900 and 1500kg DM/ha.

Always check residuals when the cows leave the paddock.

Do regular farm walks and use a feed wedge to identify surpluses/deficits.

The table below demonstrates the effect losing pasture quality has on cow intakes and milk production.

Energy (MJME)	Cow Intake (kg DM/day)	Production (kg MS/day)
12	18	2.3
11	17 – 17.1	1.9
10	16 - 16.6	1.5 – 1.6

Check List for Optimum Feeding

Some quick and easy checks that you can do to make sure cows are being well fed include:

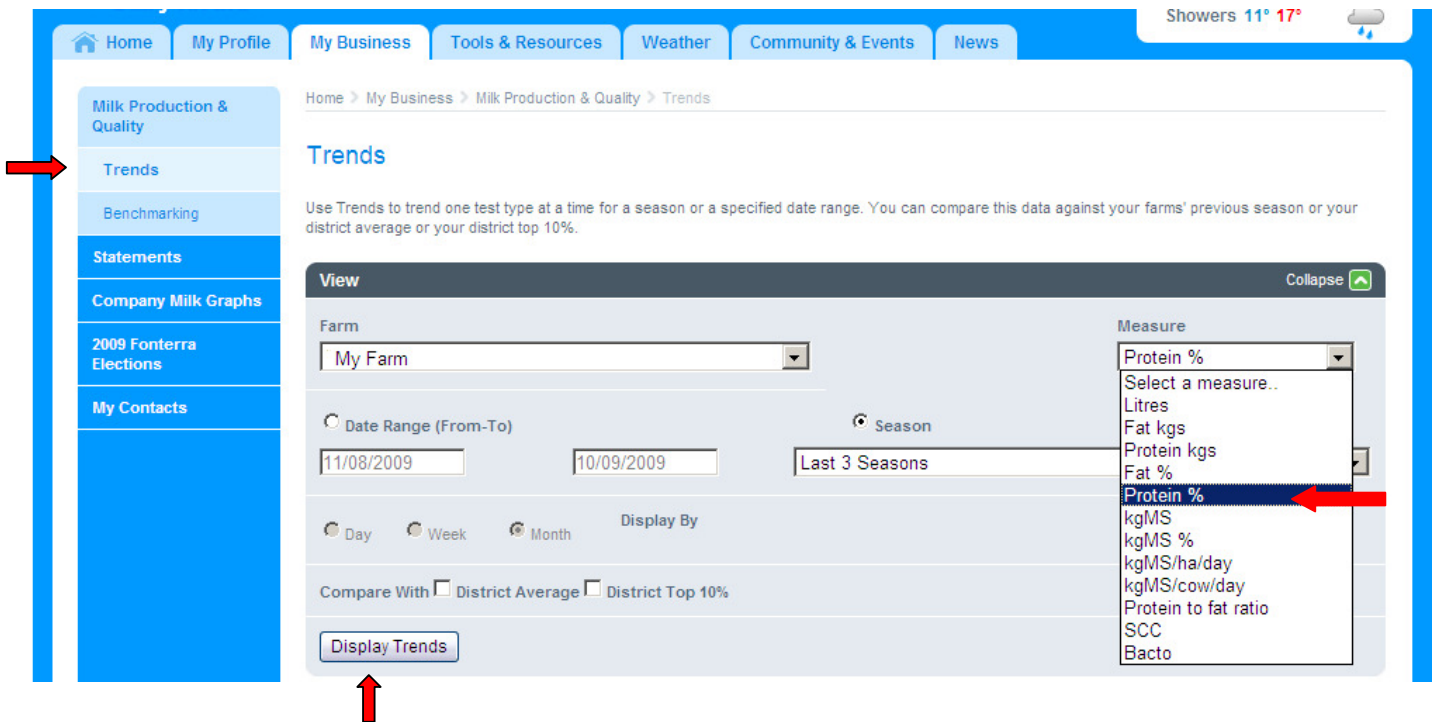
- Pasture residuals of 1500 -1600 kg DM/ha.
- **Daily MS yield** should not be dropping by more than 0.07 - 0.1kg MS/cow/day.
- **Milk protein:** If milk protein % falls, energy intake has dropped.
- **Milk fat:** If fat % percentage increasing - cows are being underfed and are losing weight.
- **Milk protein:fat ratio:** If the ratio is different to "normal" and falling - cows are losing weight.
- At least half of all cows sitting in a paddock should be chewing their cud.

Milk Test Information

Aside from watching the protein and fat % on your tanker docket, a more in depth information can be found on the Fonterra website.

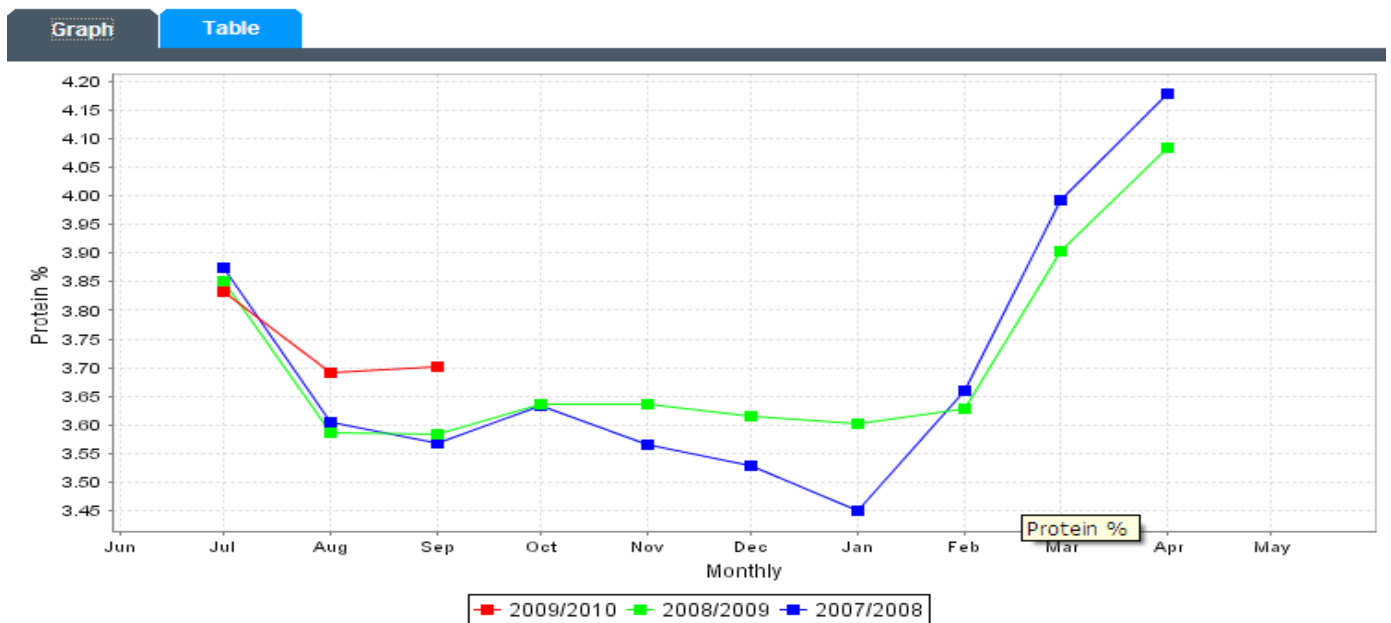
Go to your production information and click on trends, select the measurement you are interested in.

You can either select a date range to look at this season's trend over a number of days or select the season and compare this season with the previous seasons.



Click on display trends to generate a graph.

- Whole Milk Protein % for Last 3 Season



The graph shows the protein percentage in this herd is higher than the last two seasons, indicating that the cows are being fed good quality pasture. Also look at the change in protein percentage over the last 20 days, if it is dropping there is either a problem with the quantity of feed which is being

offered to the cows (not enough) or the quality of the feed has dropped (paddocks grazed poorly in the previous round and/or supplements which are being fed are of a lower feed value (ME).

If you have thin cows (< 4.0 BCS), then you need to give them preferential feeding treatment. Options include:

- Run in a separate mob to reduce competition and ensure target-feeding levels are better achieved.
- Run separately and milk OAD.
- Buy a high quality supplement (>12MJME).

Remember:

The cost of missing a cycle is \$143 (assuming 1.5kg MS/cow/day x 21days x \$4.55). It is worthwhile spending money on getting this right!

3. Mating Goals

What mating performance are we aiming for?

Below are the numbers of what top performing farms are doing, and what an average farm does.

Mating KPIs	Top Farms	Average Farms
3 week submission rate	90%	80%
Conception rate	60%	55%
6 week in calf rate	78%	68%
Empty rate (12 week period)	6%	10%

What benefits are there for you achieving a better mating performance?

- A more compact calving » more days in milk » more MS » greater profit.
- Less empties allowing a greater opportunity to cull the “true” culls.
- More AB heifer replacements.
- Ability to reduce spending on intervention e.g. inductions and CIDRs.
- Shorter calving period » more days between calving and mating » higher conception rate at first insemination. Calving isn’t drawing on.

Questions to ask yourself:

1. What are my results?
2. How much is it costing to not achieve top results?
3. How can I achieve top results?

Remember: Effort = Reward!

InCalf Assessment Report

Use the InCalf herd assessment tool found on the DairyNZ website to see how much your mating performance is costing you if it is below industry targets.

To access tool click on the InCalf link on the DairyNZ website <http://www.dairynz.co.nz/> and search for Herd assessment tools.

For Example

A 300-cow herd with a 10% empty rate and 6 week in-calf rate of 70% has the potential of making an extra \$21,600 by improving performance to meet industry standards.

MINDAPro users can run the Fertility Focus report on their own herd (this report will only be as useful as the information entered into MINDA, minimal information in = minimal information out). The Fertility Focus Report will show how well your herd is doing compared with industry targets. It will highlight areas of mating you are getting right, and where improvements can be made.

4. Genetic Merit Of The Herd

It is important to ensure you have good quality replacements coming into your herd each year and enough replacements to maintain cow numbers.

AB is an important and cost effective way to achieve this. By choosing not use AB, doing it for too shorter period or using low genetic merit and/or unproven bulls is not a sound decision to make for the future of your herd.

At the same time, doing too many weeks AB can cause the calving spread to fan out, particularly if your calving midpoint is +21days. Herd mate stage will influence the expression of oestrous in a herd and therefore your ability to detect a cycling cow, as pregnant cows are the least likely group of herd mates to mount a cow on heat. To detect cycling cows you need to rely on other open cycling cows. Therefore as more animals become pregnant, the number of potential heat detecting animals is reduced.

Ponder This:

At the beginning of the season the frequency of mounting is considerably higher as there is more than 1 or 2 "open" cows on heat or approaching heat at the same time.

By week 5 how obvious is the mounting activity?

5. Effective Tail Painting

Tail painting is the most common and cheapest form of "**heat detection aid**". When applied correctly and correctly monitored, it will detect up to 90% of cows that cycle.

Set a time to explain to staff what the tail painting plan is, and what is expected from each person.

How to Tail Paint

- Apply a strip about 150mm by 50mm long starting at the head of the tail.
- Remove any loose hair or dirt prior.
- Don't apply too thickly, or too thinly.
- Use a different colour for each different stage of mating, e.g. pre-mate, post insemination, and after a natural mating.
- Touch up tail paint at least weekly.

How to read

- The more often tail paint is read, the more cows you will identify.
- Check the tail paint every milking. In 90% of cases cows in heat will remove all paint, 5% will remove some paint, and the last 5% will remove no paint.
- The fewer people responsible for reading tail paint the better.
- After insemination, re-apply paint the following milking.

Identifying Sexually Active Groups (SAGS)

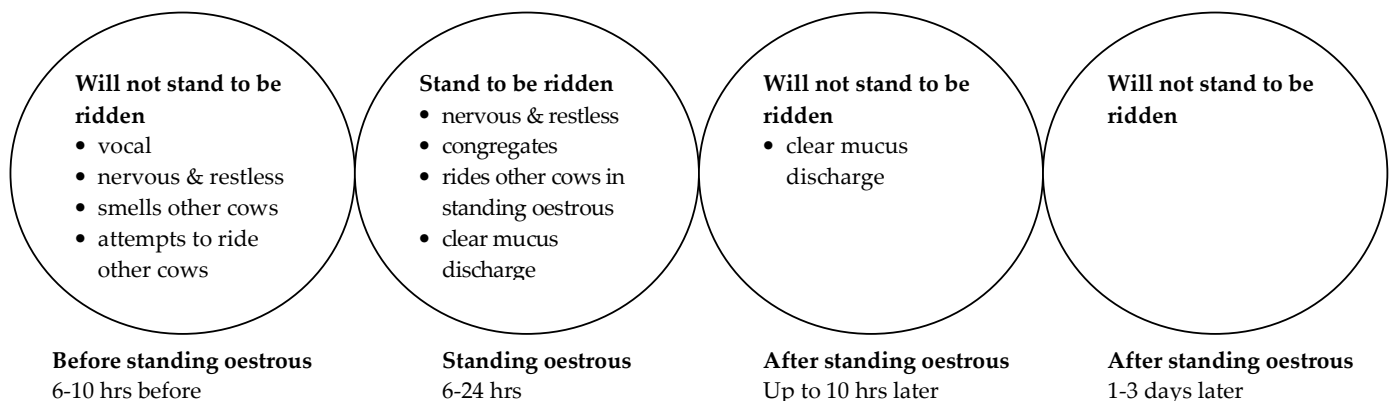
One of the most common reasons for low submission rates is not enough contact time between human and cow. This has become more of an issue as herd size has grown very rapidly in the last 20 years.

The length of time that the cow(s) stand to be ridden has also declined in the last 20 years.

One way to help overcome this problem is to ensure that cows are observed more often and at times of the day when cycling activity is greatest. This can be done by doing the following:

- Observe cows three times a day; morning, mid day and later evening for 20 minutes each is necessary to observe more than 90% of the heats in the herd; during cooler weather the middle of the day is generally better.
- Check cows approx. 1 – 2 hours after they have been moved to a new break as activity is fairly low when cows are eating as oestrous cows become more interested in eating than mounting each other
- Always check the cows before letting them out of the paddock before milking.

6. What Are The Signs And Stages Of Oestrus?



7. Selecting Bulls

There are a number of factors to consider to ensure that you have the right type of bulls that will give the desired outcome.

The source and selection of bulls is vital. Consider:

- Select bulls from a bull rearer or breeder with a good reputation.
- Choose virgin bulls whenever possible as they are less likely to introduce venereal diseases to the herd. Avoid using bulls less than 15 months old, or older than 3 years.

- Ensure that the bulls are vaccinated for Leptospirosis and verified free of TB, BVD, Neospora, Johne's disease and EBL.
- Select bulls of a similar size and age, and from the same mob. This will reduce fighting.
- Select bulls of similar size to the cows or heifers to be mated. If the bulls are heavier than the cows or heifers, then injuries to both bulls and cows are likely.
- Select the right breed for what you want to achieve with minimal calving assistance required.

8. Bull Management

This is a vital part of achieving a good mating result, but all too often a person's focus and attention to detail disappears when the bulls go in. The correct management of bulls will ensure that calving spread is reduced, and final empty rate is minimised.

Best management practice of bulls include:

- **Get the right numbers!** Too often bull power is insufficient to cover all the cows cycling. A bull's pregnancy rate is effectively only 1 to 2 cows per day.
- Do the numbers of how many cows are likely to be "open" at the end of AB. Work on a bull ratio of 1:25 open cows.
- Have enough reserve bulls to be able to rotate every 2-3 days. The need for this varies from farm to farm.
- If you have poor races, hills, impatient staff, let bulls onto the yard, use Herefords, then you will need a higher number of reserves, and use a lower ratio of 1:25.
- Yearlings will need a higher bull to cow ratio, of about 1:15 yearlings. Introduce one week earlier to assist in tighter calving spread; heifers generally have a longer anoestrous period of +7days.

9. Hormone Intervention

Ideally, your mating targets will be reached without spending money on hormonal intervention. If you do choose to use hormone intervention do so wisely.

Hormones can have a conception rate range of 15 - 60% to first insemination; how they are used, will dictate your results.

- Ensure you do all you can to minimise the need for intervention.
- Analyse last year's spending on intervention – was it profitable?
- Choose cows carefully that will be treated.
- Remove other reasons for having non-cycling cows, e.g. poor feeding, low BCS (> 4.0), number of days post-calving.

Cow Selection criteria should include:

- Have been calved for +42 days (+49 for heifers).
- Have been glove checked by vet.
- Are at good body condition score (+4.0).
- Exclude probable culls.

10. Bull Intervention

One option that some farmers have used with good success is using bulls to stimulate and mate all non-cyclers.

1. Do four weeks pre-mate tail paint.
2. Identify all non-cyclers
3. At PSM run all non-cyclers with your cover bulls (ratio of 1:25 cows)

For Example:

A 300-cow herd where 240 cycling cows are put up to AB, the rest are run with the bull.

If you achieve targets of 90% of the herd cycling in three weeks and 60% conception rate you will be able to generate enough replacements reducing your direct costs.

Increased income		Decreased income	
Sale of 10 extra beef calves @ \$150/hd	\$2,250	BW loss, on average half of 81 units for 7 cows ¹	\$280
Decreased costs		Increased costs	
60 cows natural mated = no AB @ \$1,200 No CIDRs used (20% of the herd @ \$50/cow) @ \$2,700	\$3,900	3 bulls fed for an extra 5 weeks	\$378
Total gains	\$6,240	Total losses	\$658
Net gain	\$5,582		

Farmer case studies

While there have been no peer-reviewed trials completed on using bulls instead of CIDRs, there are farmers who have been using this to good effect for many years.

Case Study 1

Non-cyclers were split into two mobs; CueMate Treatment or No Intervention and Used Bulls.

The table below show that there is no clear advantage to either treatment.

The gains come from no costs of hormones whilst the potential losses are fewer replacements.

	CueMates		Bulls	
No.	58	10 %	77	13 %
4 Wk In-calf Rate	29	50 %	39	51 %
8 Wks In-calf Rate	39	67 %	54	70 %
Empties	10	17.2 %	13	16.9 %

¹ 81 BW units is the difference between the upper quartile and lower quartile of the national herd, assuming 7 lower BW animals in the herd will generate heifer replacements

Other factors to consider:

Bulls are better at heat detection than humans, and there is evidence to show bulls will encourage cows to cycle.

You will not be keeping replacement calves from your lower fertility cows. Over time this will allow you to reduce the number of lower fertility cows in your herd.

If cows get in calf earlier you will get more days in milk the following season.

Regular heat detection and recording will be required to identify calving dates of the naturally mated cows and you will need to pregnancy test. Using White-faced bulls does help here.

Always ensure that you will get enough AB replacements to continue increasing the genetic merit of your herd. This may be an area of trade-off.

Case Study 2 - Riley

Presented at 2006 SIDE Conference Sustain-a-Bull Mating Management, demonstrates that thinking outside the box can achieve great results.

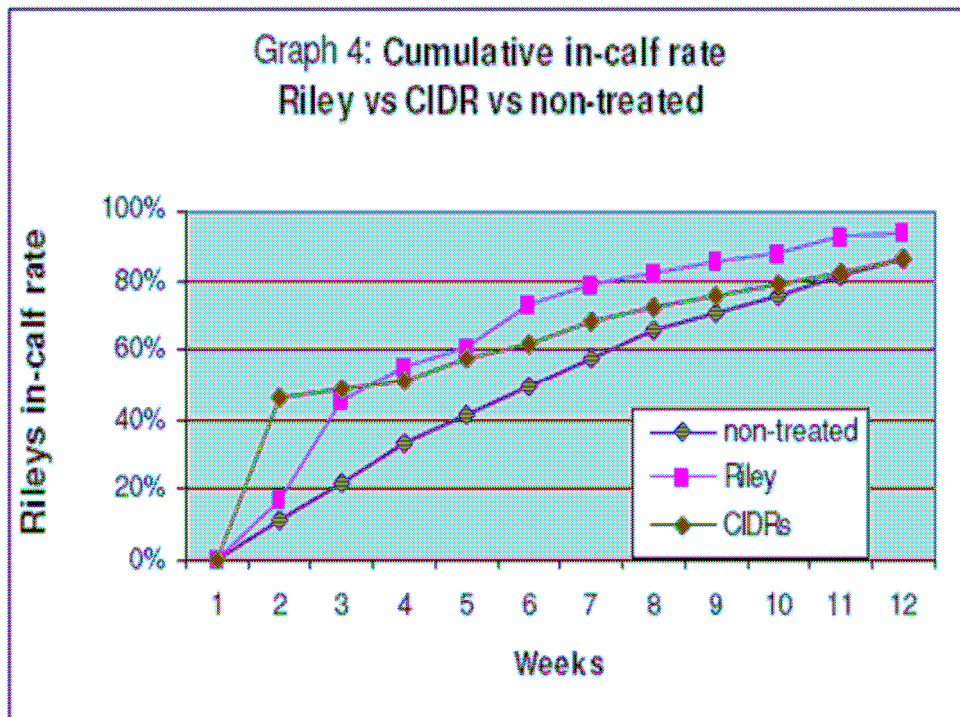
Riley's farm policy in place for the last nine years – no inductions and no CIDRs.

Mating performance achieved; average empty rate of 4.2%; ranging between 2.9 to 5.6%.

Riley's Mating Management Programme

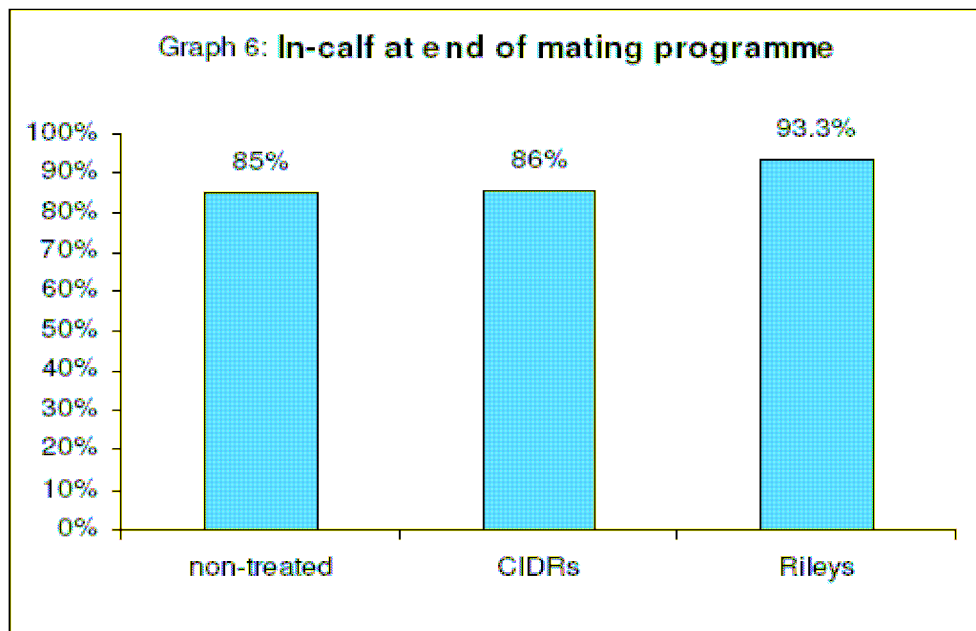
PSM –28 Days	Tail paint the whole herd red Observe cycling cows and tail paint all cows on heat green
PSM –1 Day	Draft out all red cows (non cyclers) from green cows Apply KAMARs to all cows
Planned start of mating (PSM)	Any red cow mated by the bull is tail painted blue and put in green herd Green cows are mated to AB and tail painted blue
PSM +24 Days	Any green cows not mated drafted into red herd and run with bull. AB continues
PSM +6 Weeks	AB stops, cows in 1 herd and run with bull
PSM +12 Weeks	End of mating period
PSM +18 Weeks	Whole herd pregnancy tested

Graph 1 Weekly Rate of percentage of cows in calf under different treatments



Key point CIDRs achieved a higher in-calf rate by Week 1, the time to achieve a 50% in-calf rate was similar

Graph 2 Final In-calf rate at the end of the 12-week mating period for the 3 treatments



Key point The difference between the final in-calf rate is 7.3% more than the other treatment groups at the end of the mating programme

NOTE The effect of Bulls vs CIDRs on Rileys herd uses known information from the CIDR study, Ref: A Guide to Better Reproductive Performance, Dr Scott McDougall.

Summary

Reproductive performance is only improved by sitting down and working out a plan to improve it, implementing that plan, and then reviewing the results.

- Acknowledge that mating performance is largely within your control, so make sure you know what is going on.
- Ensure right sort of data is collected for effective decision-making and also to track progress towards reproductive goals.
- With this data, manage groups of stock according to their needs.
- If you fall short of your targets, know why so you can act to address the problem.

“Regardless of the weather, your cows, bulls, AB technician, or herd genetics – it is you and your management that can make the biggest difference. I can’t necessarily change outside influences, but I can change me, and my management response to them”.

Farmer quote

Remember: Effort = Reward!