

# Repro Special



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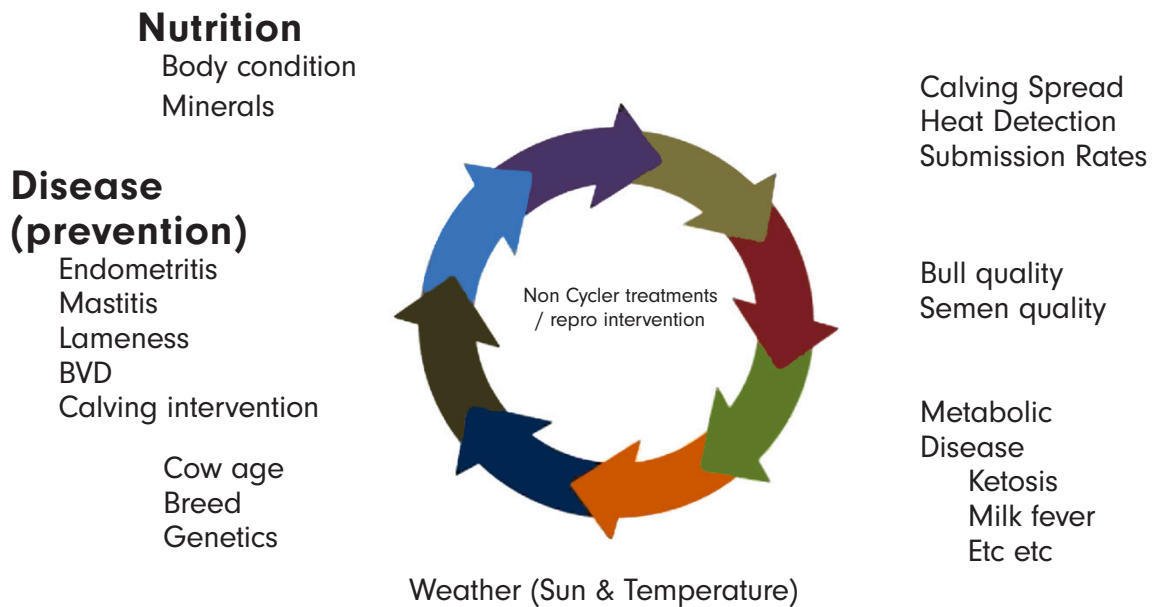


# Dairy Repro Workshop

In September the RVC Dairy team hosted farmers and managers at the clinic to discuss options for reproductive interventions in the upcoming season. The event consisted of a series of short presentations explaining the latest research focusing on the cost / benefits of each program, with a group discussion at the end.

This special edition of Dairy News is a recap of the evening.

## Repro is complex



**It is a broad and involved topic**

### Is it an end point, middle or beginning?

One thing is certain, it is multi factorial and has many moving parts.

And only a small part of mating involves non cycler treatments.

However, intervention does play an important role in ensuring that non cycling cows get the best opportunity to get in calf.

# DIB Synchrony Programs

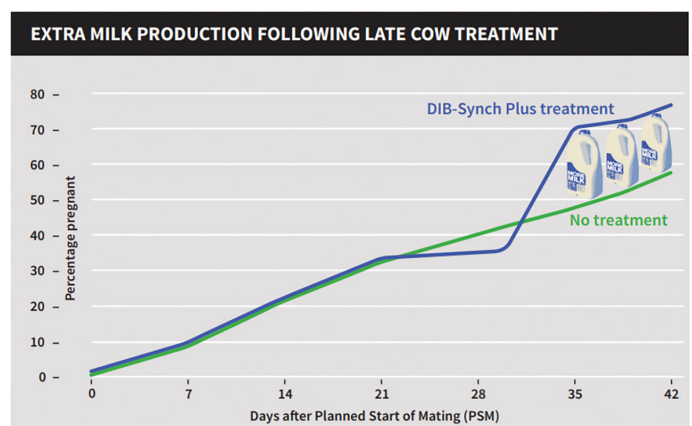
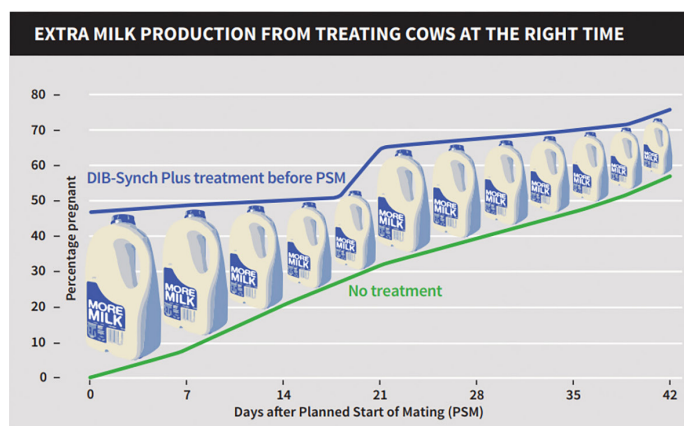
## DIB Synch Plus

- 10 day program, gold standard for Non cycling cows
  - Works regardless of the cause of the non-cycler
- Conception rates (ie; cows who become pregnant from fixed time AI) are typically around 42-43%
  - We have seen responses above 50% in some cases!
  - Keeping in mind, a target conception rate for a cycling cow is around 58%
  - Cows who are younger, have had more days since calving and are in better BCS, will respond better to these programs
- The main benefit of using early DIB synch plus programs is earlier calving cows
  - Which results in an average of 19 more days in milk (DIM)
  - See below for return on investment per cow, averaged across the treatment group using conservative values

Return on investment	DIB Synch Plus
Additional DIM	19
Kg MS/day	1.6kg
\$ / kg MS	\$6.50
<b>Additional milk income</b>	<b>\$197.60</b>
Costs	\$55 (excl)
<b>Profit per cow</b>	<b>\$142.60</b>

- The main benefit of increasing DIM is seen when utilised EARLY
  - As seen below, the return on investment from delayed / late treatment produces very little benefit in comparison to treatment prior to the planned start of mating.

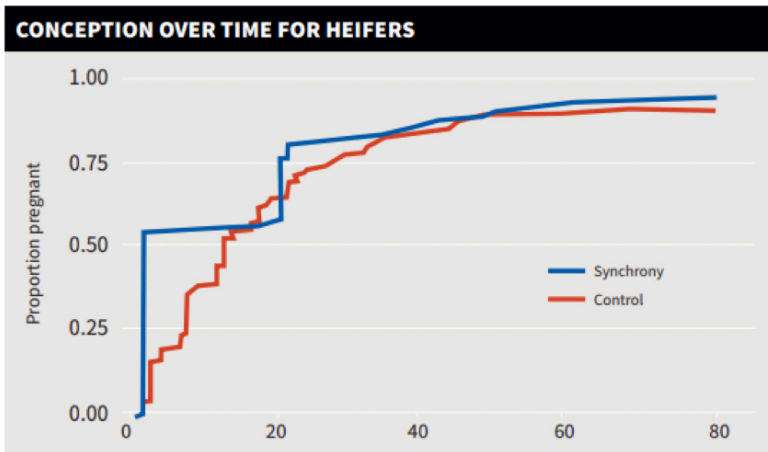
Cows identified as non-cyclers and treated 9 days before planned start of mating (PSM) will produce 7 x more milk than cows treated after the first round of mating.



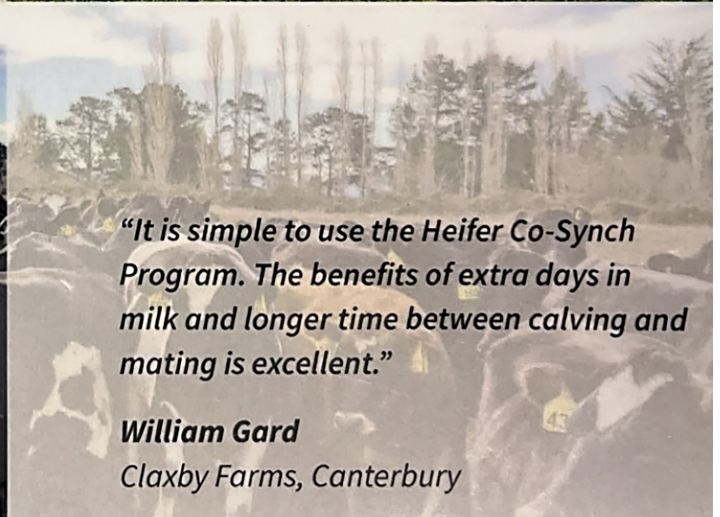
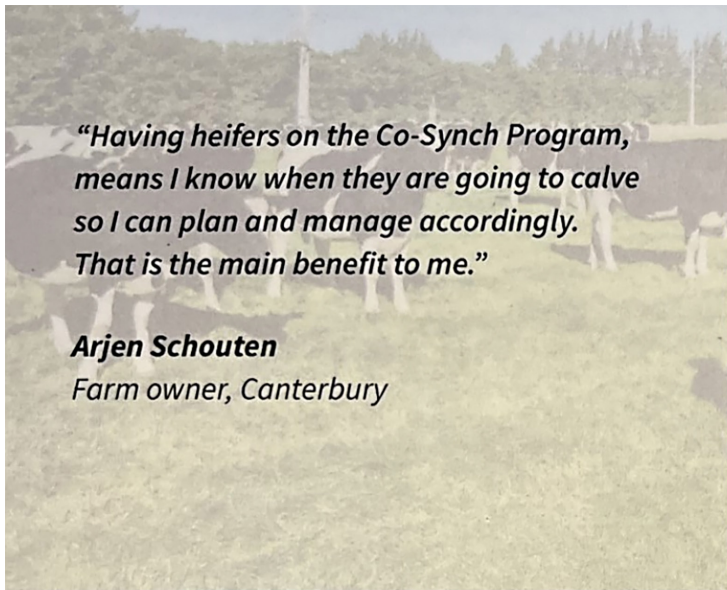
*These graphs compare the pregnancy rate for treating vs not treating non-cycler cows. Pregnancy rates can be used as a proxy for calving pattern and therefore extra DIM.*

# Heifer Co-Synch

- Best heifer synchrony program
- Benefits (using data from local North Canterbury studies):
  - 3% more heifers pregnant vs bull mating
  - Earlier calving = 11 days more DIM on average
  - AND 11 more days to recover before their second mating
  - Convenience of tighter calving spread and fixed time AI vs having to heat detect for a long period
  - More AB heifer calves and faster genetic gain



- Expected return on investment on average 2:1
- [Read testimonies from our very own exceptional local farmers below!](#)



# Ovsynch

A synchronisation programme designed for **cycling** cows, heifers and synchronising beef cows.

- When used in cows we call this programme Ovsynch.
- In heifers, it is often referred to as a Co-synch due to the difference in timing between the final injection and AI.
  - This difference can be summarised in the following diagram.



- Cost of the programme as of September 2023 is \$31.30/cow (excluding GST).
- The main benefit of this program is allowing for fixed time artificial insemination without the need for heat detection.

In heifers and cycling cows the protocol will achieve similar results to a double PG programme (~42-49% conception rate) but with the benefit of Fixed time AI.

Because this programme only works effectively on cows that are cycling, it is not recommended as a treatment for true noncycling cows. However, NZ data has shown that within any group of cows not detected in oestrus there are a proportion that are cycling/having silent heats or have follicular cyst. These cows are good candidates for an Ovsynch programme. Selecting these cows based on Ovarian scanning is one option. If used as a blanket treatment for cows not detected in oestrus at PSM, NZ data has shown lower conception rates of around 30-33% to the Ovsynch protocol.

*Results may vary.*



# PG Programs

## Heifer Synchrony

### Double PG program

2x PG injections are required 11-14 days apart. This synchronises their cycle to allow 75% of heifers to be inseminated within 5 days after the 2nd injection. The majority of heifers will show signs of heat behaviour 3 days after injection.

#### PROSTAGLANDIN (PG) PROGRAMS

Days after Cyclase injection  
% of cows likely to be inseminated

2	3	4	5	6+	No heat
5%	40%	20%	10%	10%	15%

### Benefits of heifer synchrony

- ✓ More heifers calving ahead of the milking herd
- ✓ More days in milk and increased milk income
- ✓ More compact calving – easier to manage heifer calving in advance of the milking herd
- ✓ More AB calves born to genetically superior animals -> faster genetic gain
- ✓ Earlier calving heifers have longer recovery time before next mating (heifers, on average, take 10 days longer to resume cycling to second mating)

### Other considerations

- ❖ Good heat detection is essential as inseminations will occur over 5-6 days
- ❖ Heifers need to have reached target weights to give good results
- ❖ Consider increased bull power for subsequent cycles
- ❖ Cost: \$19.13/cow (excl. GST)



# Short-cycling cows

## Why Wait PG program

This program is only useful on cows that are already cycling to bring them forward into the first 2 weeks of the mating period.

Note: PG will have no effect on non-cycling cows.

Cows on heat 7-14 days prior to PSM are injected with PG 2 days prior to PSM and are then inseminated in the 1st week of mating (bringing them forward 1 week).

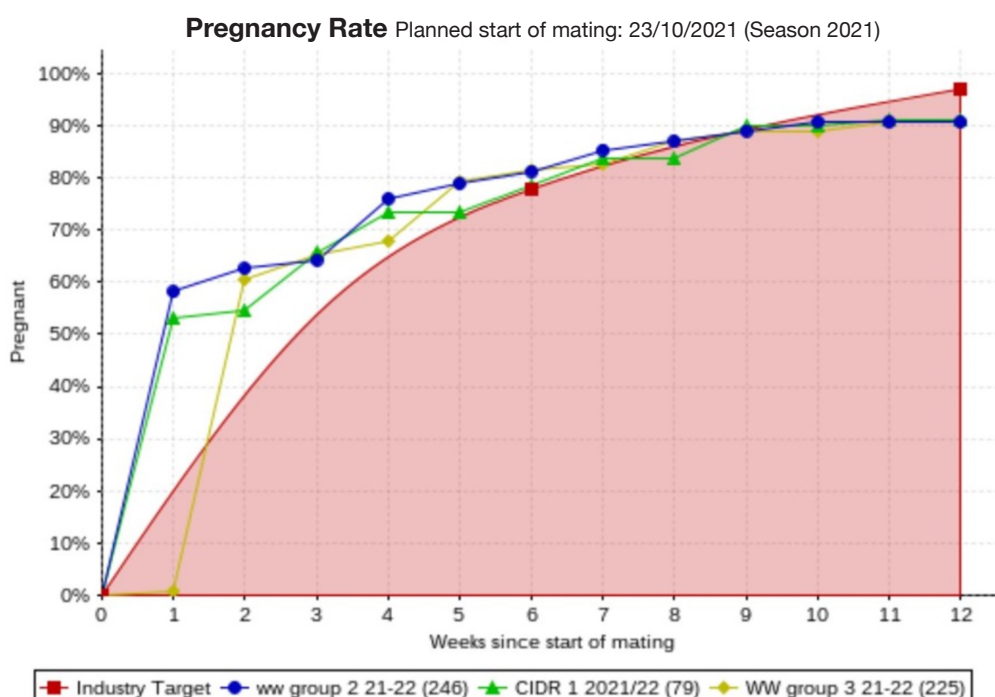
Cows on heat 1-7 days prior to PSM are injected with PG 1 week after PSM and are then inseminated in the 2nd week of mating (bringing them forward 1 week).

## Benefits of short-cycling cows

- ✓ Brings cycling cows forward a week -> improves 3-wk submission rate, tightens calving spread and gives more days in milk
- ✓ A large NZ study found cycling cows mated to PG programs have slightly higher conception rates than un-treated herd mates
- ✓ ROI 4:1 (on average 4 days extra DIM/cow and 6.5kgMS/cow), with additional milk income far exceeding treatment costs and the feeding costs of extra DIM

## Other considerations

- ❖ Pre-mating heat detection is essential
- ❖ Requirement for good preparation next season – staff, feed, calf housing, etc
- ❖ Cost: \$7.83/cow (excl. GST)



### EXAMPLE FARM:

**Why Wait 1** (blue line) started at PSM resulted in 59% conception rate in the first week of mating + ongoing subsequent lifts in pregnancy rate throughout the remainder of mating.

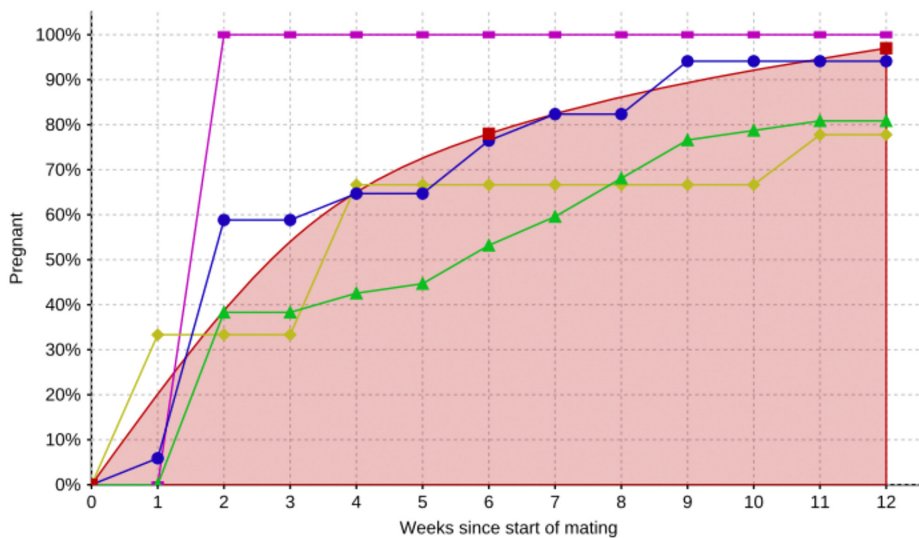
**Why Wait 2** (yellow line) started 1 week after PSM resulted in 62% conception rate by week 2 of mating + ongoing effects.

Why Wait programs in conjunction with CIDR programs on non-cyclers (blue line) have resulted in a high proportion of cows mated within the first 3 weeks of the mating period.

# Ovary Scanning

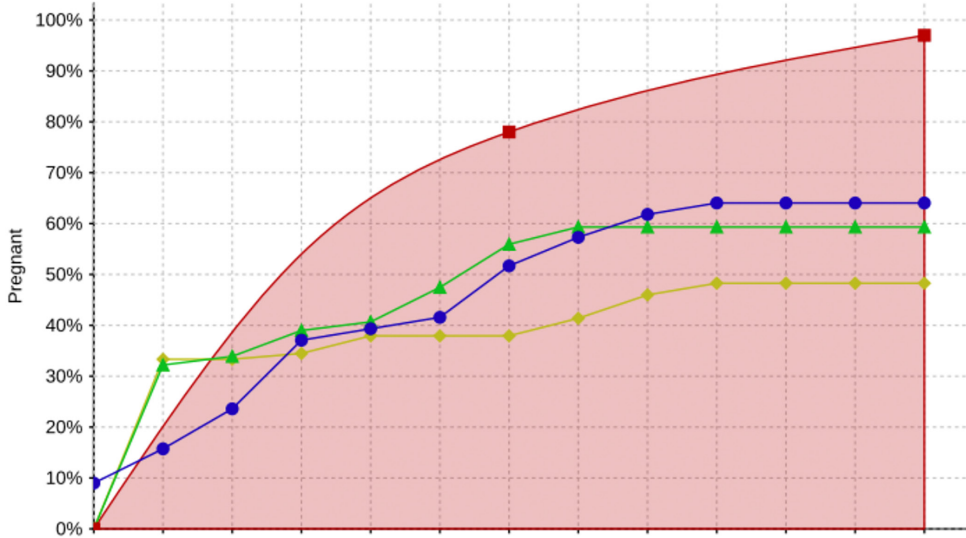
- When done early, Blanket CIDR is the best option for return on investment. This gives more days in milk AND reduces cow wastage
- BUT If blanket CIDR is not an option (e.g. economically) – consider scanning ovaries and using Ovsynch/CIDR/PG **as farm specific programme.**
- **Timing of programme** - Earlier gives best returns on investment. **Early treatment is also better than no treatment, reducing number needing treatment is better still (by maintaining BCS – FEED/once a day milking, trace elements, no infection).**
- **Pricing:** Scan ovary: \$5.22  
Ovsynch: \$31.30  
PG: \$7.83  
CIDR: \$54.78
- Different programmes only work on specific stages of the oestrus cycle. For example, using a blanket Ovsynch or PG programme WITHOUT scanning means it might not actually work on many of the cows.
- These features seen on the ovary will determine which programme is best suited. Eg:
  - Follicle on ovary – ovsynch
  - Corpus luteum – PG
  - Nothing on ovary – only CIDR will work
- Response to treatments are very variable depending on each farm, e.g. in first graph below, Ovsynch had an initial 60% pregnancy rate, but on the second farm it had a 32% rate.

**Pregnancy Rate** Planned start of mating: 22/10/2021 (Season 2021)



■ Industry Target  
 ● ovsynch 22/10/21 (17)  
 ▲ cidr 22/10/21 (47)  
 ◆ cyclase 22/10/21 (9)  
 ■ cyst cows 22/10/21 (2)

**Pregnancy Rate** Planned start of mating: 1/11/2021 (Season 2021)

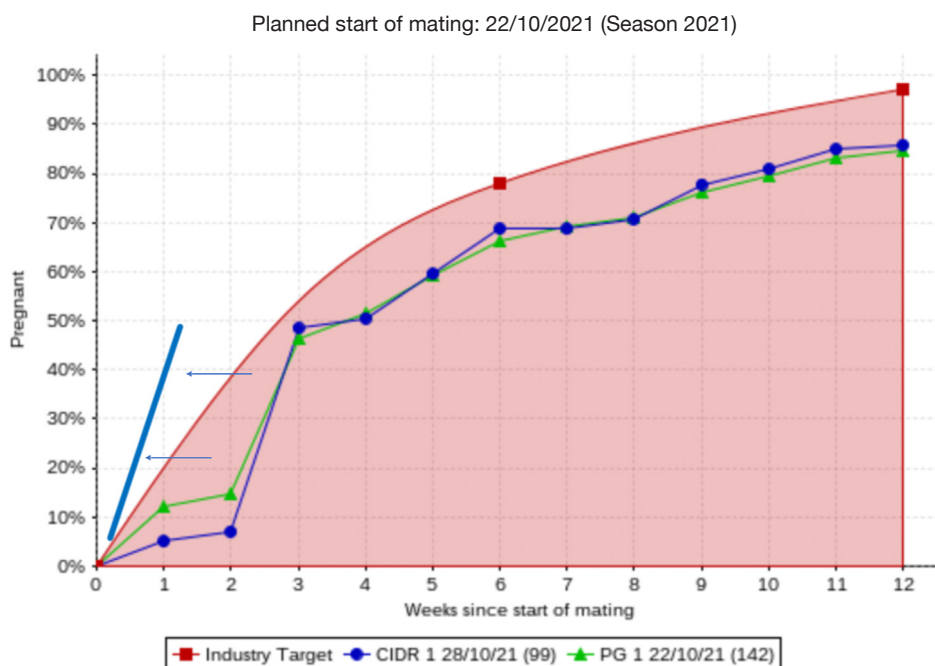
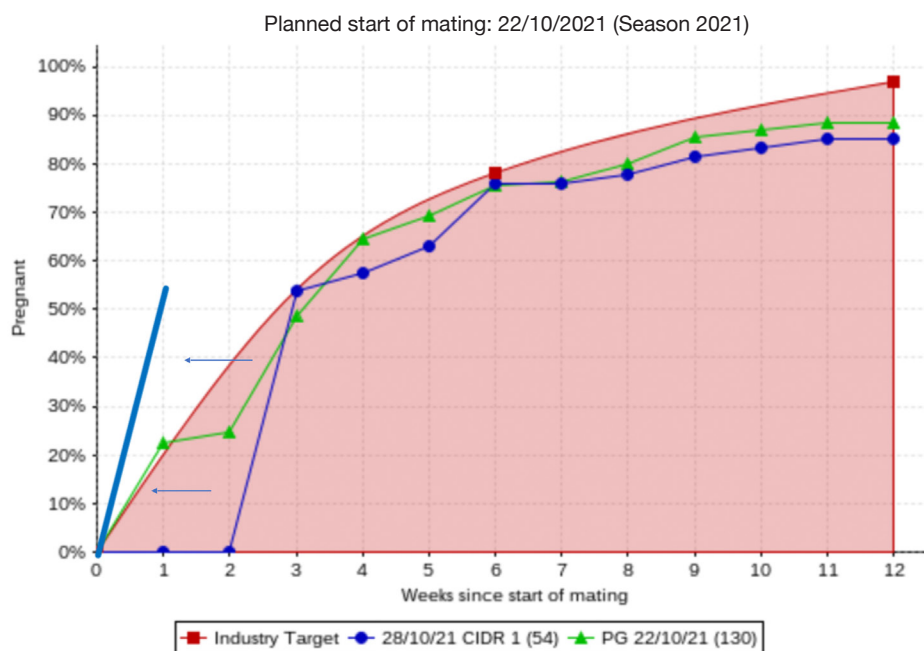


■ Industry Target  
 ● pg 26/10/21 (89)  
 ▲ ovsynch 26/10/21 (59)  
 ◆ CIDR 26/10/21 (87)



- A Case Study

## Using PG before a DIB Synchronizing program Non-Cycler program



The pregnancy rate graphs above show the results from using a PG job to reduce the initial costs of a CIDR non-cycling program.

The pregnancy rate from a PG injection on a group of non-cyclers was low. In this example it ranged from 12-22%.

The average pregnancy rate from a typical non-cycler program ranges from 45-55%. In this example it reached 54%.

On face value, starting with a PG program may seem like it may save some initial cost, but the low pregnancy rate response to a PG injection on non-cyclers will waste valuable time at the start of mating. These losses continue into next season, adding delays to calving and a significant reduction in potential milk yield.

**In each graph, if a CIDR program for non-cycling cows coincided with PSM, this would have given a much better return on investment.** The earlier non-cycler program had a remarkable effect on the pregnancy rate and subsequently kgMS produced the following season.

