# Cattle Reproduction 2017 Resources



**Evidence based vet medicines** 



# **Ready to Mate**



Every 1% improvement in herd 6 week in-calf rate is worth \$4 per cow in the herd

#### Benefits from improving farm reproductive performance

- More days in milk leading to improved farm profitability
- Calving pattern is more compact (fewer late calvers)
- Fewer cows are culled as empty
- More cows pregnant to Artificial Insemination (AI) so more AB calves
- More heifer replacements born early
- Fewer days feeding dry cows

### Increase in-calf rates by treating non-cycling cows prior to the planned start of mating

DIB-Synch Plus				
Day 0		Day 7	Day 9 (pm)	Day 10 (am)
Insert DIB		Remove DIB		
Inject 2mL Gonasyn		Inject 2mL Cyclase & 2mL Novormon eCG	eminate to detected heat Inject 2mL Gonasyn	Al all cows (not yet inseminated) 8 - 20 hours later
DIB Synch P for an additi in milk (com no treatmen	lus Program onal 10 days pared with it)	FINANCIAL IMPLICATIONS General Information Herd size Average milk production (early season) Kg MS Typical NVO cows % Expected NVO cows I. Effect on Milk Production Extra milk production Value of extra milk production	OF NON CYCLING COWS AT P 500 1.6 PSM -9 Days 20% 100 PSM -9 Days 3040 \$19,760	PSM +21 Days 8% 40 PSM +21 Days 95M +21 Days 51,248
		II. Effect on 6-week In-Calf Rates	PSM -9 Days	PSM +21 Days
		Value of additional AB heifer calves	\$2,500	\$920
		 III. Effect on Following Season Reproductive Perfor	rmance PSM -9 Days	PSM +21 Days
		Reduced treatment cost in following season	\$540	\$36
Person	alised farmer	IV. Cost of Treating NVO cows	PSM -9 Days	PSM +21 Days
DOLCO	aulatar	Cost of addtional feed	\$4,500 \$2,280	\$1,800 \$144
ROI Cal	culator	Total cost of treatment	\$6,780	\$1,944
		V. Financial Summary	PSM -9 Days	PSM +21 Days
		Total gains from treating NVO cows	\$0,780 \$22,800	\$1,944 \$2,204
		Gain - Cost (per herd)	\$16,020	\$260
		KOI	236%	13%

Treat non-cycling cows with the modern program prior to planned start of mating to maximise days in milk and farm income

Early treatment provides greater returns:Treat prior to PSM27kg MS / cowTreat 3 weeks after PSM3.5kg MS / cowTreating non cycling cows prior to PSMproduces 8 x more milk, compared withtreating cows after 'first round' of AB

#### Extra milk production following non-cycling treatment



# **Synchrony Programs**

#### The advantages of synchrony programs

- More days in milk providing more farm income
- Compact calving over a short period
- More time to begin cycling prior to next mating
- Faster genetic gain if heifers synchronised
- Additional AB heifer calves

#### **Common synchrony programs**



The DIB-CoSynch program allows the use of set time AI. All animals are inseminated the same day so only one AB technician visit required. NZ dairy heifers synchronised with a CoSynch program have significantly higher pregnancy rates than heifers given a double PG program.

(McDougall, Rhodes, and Compton 2013)

Why Wait						
Week - 3	Week - 2	Week - 1	PSM	Week 1 of mating	Day 7 mating	Week 2 of mating
Record all cows on heat	Record all cows on heat	Record all cows on heat	Inject all cows on heat week -2	Cows on heat weeks -3 and weeks -2 submitted for Al	Inject all cows on heat week -1	Cows on heat week -1 submitted for Al

The Why Wait program requires premating heat detection and recording of the week prior to mating that the cow showed signs of heat. This program advances pregnancy one week for two-thirds of the herd and ensures two thirds of the cycling cows in the herd are submitted in week one and all cycling cows have been submitted for AI by the end of week two.

### **Gonasyn and Cyclase**

#### Gonasyn contains gonadorelin acetate (50 ųg/mL)

6

Gonadorelin is a synthetic analogue of GnRH (gonadotropin releasing hormone)

GnRH stimulates the release of FSH (follicle stimulating hormone) and LH (luteinising hormone) from the pituitary gland

Gonasyn complements use of the DIB-V and DIB-h progesterone inserts, Cyclase and Novormon eCG in DIB-Synch Plus programs

Gonasyn has been proven in the DIB-Synch and DIB-Synch Plus programs under New Zealand commercial farming conditions

#### Cyclase contains cloprostenol (as sodium) 250 yg/mL

cyclas

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Cyclase is a synthetic analogue of prostaglandin F2∂

Cyclase is indicated for the luteolysis of functional corpora lutea (CL) in cows, pigs and horses

The dose of Cyclase in cattle is single or repeat doses of 2mL (500ųg cloprostenol)

Cyclase complements use of the DIB-V and DIB-h progesterone inserts, Gonasyn and Novormon eCG in DIB-Synch Plus programs

Cyclase has been proven in the DIB-Synch and DIB-Synch Plus programs under New Zealand commercial farming conditions

## **Repro' Research**



# Leading veterinary understanding of NZ cattle health and productivity

Bates, A. Resynchrony study with early diagnosis of pregnancy, AgriHealth Technical Seminar 2015.

Bryan, M. The concurrent administration of eCG with prostaglandin in a dairy cow synchrony program and its effect on reproductive outcomes, WBC 2014.

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Hawkins, D., Young, L., Lawrence, L. Assessment of field efficacy of intra-uterine cephapirin for the treatment of metricheck positive cows in spring calving dairy herds. Data on file 2015.

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McDougall, S. Effect of addition of eCG on ovarian follicle size and timing of ovulation in a treatment program for anoestrous dairy cows comprising intravaginal progesterone, GnRH and prostaglandin F2 alpha, WBC 2014.

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Young, L. Using quantitative observational research to assess cow behaviour during treatment with intravaginal progesterone inserts on New Zealand dairy farms, WBC 2014.

Young, L., Lawrence, L. Cyclase as diluent for Novormon eCG, AgriHealth Technical Seminar 2015.

Young, L. Can we improve eCG effect with a higher dose? AgriHealth Technical Seminar 2015.

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# **DIB progesterone inserts**

DIB-V and DIB-h have both been proven under NZ commercial farming conditions. They contain optimised dosage of progesterone for modern seven day breeding programs.

DIB-V is a 1 gram progesterone intravaginal insert and DIB-h is a 0.5g progesterone intravaginal insert. Both products are registered for controlled breeding in cows and heifers.

The progesterone in the inserts is not fully liberated following standard 7 day use, leaving significant levels of progesterone in used inserts, especially those with a higher initial progesterone content. Using DIBs means less progesterone being discarded into landfills!



# Novormon eCG is superior

Novormon eCG is equine Chorionic Gonadotrophin (eCG or PMSG). The product is freeze dried with diluent for reconstitution. The dose of Novormon eCG for oestrus synchronisation in cattle is 2mL (400 IU eCG).

Novormon eCG is highly purified and has an optimal FSH / LH ratio. Dual action on FSH and LH stimulates follicular growth and ovulation. Novormon eCG increases ovulation rates and stimulates oestrus in anoestrous animals.

Novormon eCG has been proven in the DIB-Synch Plus program under New Zealand commercial farming conditions to increase pregnancy rates by 7%.

- Consistency
- Potency
- Easy to reconstitute
- No particulate matter after mixing
- Stable after reconstitution 14 days at 25°C or 21 days at 4°C





Modern non-cycling cow programs should include eCG for:

7% higher\* in-calf rates at 28 days

3 more days in milk

\* Compared with traditional 7 day progesterone programs. Shephard, R. NZVJ 2013

#### Add Novormon eCG for higher in-calf rates

Novormon eCG has an ACVM approved label claim for reconstitution with Cyclase or diluent

#### Mixing Instructions for Novormon eCG

Novorm

To reconstitute, use a sterile syringe and needle to withdraw 20 mL of supplied diluent or Cyclase and add to the freeze-dried eCG powder

Invert the contents until powder is fully dissolved

Withdraw the dissolved contents and return to either the diluent or the Cyclase vial (depending on your choice of diluent)

Add supplied red sticker to indicate the vial contains eCG and write the date of reconstitution

The 100mL plastic vial of diluent or Cyclase with Novormon added is ready to use and contains 200 IU/mL eCG

#### Stability after reconstitution

- Room temperature 14 days
- Refrigerated 21 days

# **Treat Endometritis Early**

Treat dirty cows for higher in-calf rates

Endometritis is inflammation of the endometrium (uterine lining) usually caused by bacterial infection at calving.

Endometritis in dairy cows leads to:

- more non-cycling cows
- lower in-calf rates
- reduced conception rates
- higher empty rates

#### **Check for dirty cows**

Endometritis can be detected via inspection of vaginal mucous and secretions. The presence of any discolouration or flecks of pus in this fluid is likely a sign of infection.



Regular checks of cows should be made between calving and mating for best results.

Treatment of endometritis with cephapirin has shown:

- Improved conception rates
- Higher in-calf rates
- Lower empty rates

## **MetriVet treatment**



MetriVet has been proven to cure endometritis in NZ dairy cows

The delivery system for MetriVet provides secure union between the pipette and syringe

### Enhance veterinary expertise

AgriHealth will provide veterinary continuing professional development (CPD) to support expertise in cattle reproduction and endometritis treatment

#### **Advanced Bovine Endometritis Workshops**

Facilitated workshop

- to provide familiarity with latest findings on optimal timing of endometritis detection and treatment in cows
- demonstrate farmer benefits from treating cows with endometritis (in timely manner)
- practical tips to improve skills; including passing pipettes on farm and effective treatment

Includes clinical discussion, practical upskilling and optional on-farm workshop

MetriVet is easier to infuse into the uterus of cows





MetriVet training modules are customised to suit your vets

### Marketing Plan – farmer communications

	August	September	October
Advertising to farmers – treat non-cyclers early to optimise profitability			
Ready to Mate video clips on web			
Clinic newsletters – treating non-cycling cows			
Farmer brochure			
Advertising to farmers – DIB benefits – ask your vet			
Advertising to farmers – using modern programs for non-cycling cows – ask your vet			

# **CPD & Tech Support**

- Sponsorship to Scott McDougall's Advanced Cattle Reproduction Course
- Industry agreed timing 'windows' for non-cycling cow and synchrony programs
- Knowledgeable and approachable advice always just a phone call away
- Clinic programs for practical skills and improving reproduction discussions with farmers
- Endometritis workshop the why and the how



Advanced Cattle Reproduction Course Workshop Manual



# **Marketing Materials**

#### **Resources for Vets and Farmers**



Ready to Mate brochure



DIB brochure

Lost your best cows last season? Want better in-calf rates? AgriHealt

Treating non-cyclers brochure



Treating non-cyclers brochure









AgriHealth Partnership

Slide rule







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Non-cycler program



Synchrony program



MetriVet brochure



Endometritis workshop

# Timing of non-cycling cow programs

### Ensure program timing is correct to maximise conception rates



Green signals optimal timing with red not recommended

With a standard 10 day program AI must occur in the morning and heat detection (with mating to detected heats) is required

If the AI technician is only available in the afternoon, a 9 day program is recommended with final Gonasyn early morning on day 9



### **Key Messages**

### Treating non-cycling cows 9 – 10 days prior to PSM with full program provides greatest farm return

- Optimise days in milk by mating treated cows on first day of AI for the herd
- Maximise in-calf rates by ensuring full program administered at the right times (P4 + GPG + eCG)

Treat early to optimise milk production and calving spread to reduce late calving cows in future years and allow culling options (as more cows pregnant, earlier)

### Farm management factors the greatest contributor for poor reproductive performance

- Nutrition and BCS
- Heat detection
- Bull management
- Heifer growth rates, including weight at first mating and calving

### Changing a few key areas will likely have the greatest impact on farm reproductive performance



Gonasyn (A10642), Cyclase (A10490), Novormon eCG (A10641) and MetriVet (A10955) are Restricted Veterinary Medicines, available only under veterinary authorisation. DIB-V (A10319), DIB-h (A10832) are registered Veterinary Medicines. Registered pursuant to the ACVM Act, 1997.



Evidence based vet medicines www.agrihealth.co.nz 0800 821 421