EA NEWS

ETHICAL AGENTS
VETERINARY MARKETING

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A Welfare Issue

Inside this issue:

A lot of the focus in this edition of EA News is on cattle reproduction, especially the animal welfare aspects of eCG production.

While companion animal and equine clinics may find cattle reproduction of little interest the welfare ramifications are huge and, like the debate about live exports of cattle and sheep, all veterinarians will have a vested interest.

Mainstream media have had little hesitation on calling on the veterinary profession for opinions in the live export debate and the veterinary profession has led the way in the subject of tail docking in puppies, much to the angst of many breeders.

There are already websites devoted to eCG collection and animal welfare and social media today has the potential into exploding it into something massive, especially if the anti-farming brigade get involved.

Farmers are hypersensitive to unjustified criticism and they will welcome the news that there are viable alternatives, especially if their veterinarians get on board.

What Can We Do?

The bottom line is that we can do without eCG.

Anecdotal evidence has shown that farmers are prepared to pay for the cost of an extra visit and an extra prostaglandin injection instead of using a protocol with eCG.

The good news now is that research has shown that using lecirelin and single isomer cloprostenol results can be as good as the eCG protocol.

Not only is this cost comparative, and even more economical than the eCG protocol, and certainly the extra injection protocol, but is a simpler regime overall.

The science and the regime are outlined inside this newsletter.

eCG and Welfare

Just what is the issue with welfare and the collection of eCG? There is a plethora of information on the web, but like all web based data, needs to be interpreted with caution. Nevertheless the findings are quite disturbing.

To extract and purify eCG, pregnant mares are housed at production sites ('blood farms'), small volumes of blood are withdrawn and tested by enzyme-linked immunosorbent assay (ELISA) for eCG content as the mares approach day 40 of gestation, and once confirmed positive, large volumes of blood are collected weekly or more often between gestation days 40 and 120. [Vilanova et al]

There are no international or industry guidelines or recommendations for blood collection from pregnant mares and the amount collected and the schedule of collection are highly variable between farms. In addition, some farms choose to abort the mares after day 90 of gestation, since pregnancy is not needed at that point for continued eCG production.

This allows farms to rebreed mares such that two eCG production cycles are achieved each year, instead of one. On farms in which foals are raised, foals may be sold or sent for slaughter, depending on the country and breed of horse being used for eCG production. [Vilanova et al]

There is often over emotive language seen in many welfare websites ["Once they become infertile or too anaemic they are violently slaughtered and sold so their bodies can be eaten." – "Foals are being thrown into garbage cans after being brutally aborted. They are plucked from inside their mothers without anaesthesia"].

The days are long gone when animal welfare activists can be derisively dismissed as 'the Bambi brigade'

Even allowing for hyperbole some of the practices seem horrific, collecting via a 10 gauge needle without anaesthetic requires some form of brutality in handling and some of the on line videos are truly confronting.

A group of five NZ vets were taken to Argentina by one company to view the process, which is a bit like parents informing offspring they will be in town to look at the student flat, it is bound to be tidy that day!

Despite that the report of the visit in Hoofprint was hardly a ringing endorsement, "A single-one off visit, especially a planned organised one, cannot definitively identify whether animal abuse is ongoing." (Laven)

The days are long gone when animal welfare activists can be derisively dismissed as 'the Bambi brigade', and that is certainly no bad thing. New Zealand farmers feel oppressed by media and most are receptive to improving welfare. It is only a matter of time before this becomes an issue on social media so it is in farmers' best interest to ensure it is yesterday's news.

References: Laven Equine chorionic gonadotrophin: balancing cow reproductive performance and horse welfare, HoofPrint NZ: Official newsletter of the Dairy Cattle Veterinarians Branch of the NZVA Volume 36 No. 4 June 2019

Vilanova, De Briyne, Beaver and Turner. Horse Welfare During Equine Chorionic Gonadotropin (eCG) Production. Animals 2019, 9, 1053.

Insomnia

Nagy was having trouble sleeping so the doctor told him to try counting for as long as he can.

On his next visit the doctor enquired about his insomnia and asked him if he had tried counting.

"Yes," relied Nagy. "I got up to 45.374, then it was time to get up."

Copperjec D is Here

Copper is copper is copper—so what differentiates Copperjec D from other brands in the marketplace?

First of all it, like some others, is EDTA based as opposed to glycinates.

Glycinates are traditionally more economical but cause more tissue reactions so are more used in beef cattle while dairy clients much prefer EDTA copper.

Another plus for EDTA is rapid translocation so copper levels are quickly elevated.

Studies on Copperjec D show that it has no overall effect on milk solids and also, unlike many brands, can be used up to ten days prior to mating.

A strong feature from a purely administrative point of view is that it comes in a screw fit vaxi-pack, meaning the draw off tube will not come apart during use, and also the pack is an economical 250 ml as compared to many 200 ml packs at a similar price.

A natty little innovation is that the requisite package leaflet is printed on the inside of the carton itself, meaning less throw away paper material thus a more environmental friendly product.

The *piece de resistance* however is the suspension itself. It is incredibly easy to suspend, becoming almost like a solution with one simple shake and no adherence to the site of the pack. This makes it simply the most syringeable copper injection on the market!

While price pointing has the 250 ml pack of Copperjec D at a lower price per dose than others, because of the high quality of the formulation it is not a matter of being described as a cheaper product but as a more economical presentation.

Motivational Mantras For The Office

1) Eagles may soar high but weasels don't get sucked into jet engines.
2) Accept that some days you are the pigeon, some days the statue.
3) Remember the 3 golden rules; It was like that when I got here. I didn't do it. And (to the boss) I like your style.
4) Set out to leave the first vapour trail in the blue sky scenario.
5) A problem shared is a problem halved, so is your problem really yours or just half of someone else's?
6) Avoid employing unlucky people - throw half the pile of CVs in the bin without reading them.
7) There is no 'I" in "team". But then there is no "I" in "useless smug colleague" either. And there are four in "platitude quoting idiot." Go figure.
8) If your boss is getting you down look at him through the prongs of fork and imagine him in jail.

Econom8

Early Background

There have been several different programmes for reproduction in dairy cattle, most having their own names according to the company promoting them. The most well-known is the first one developed called the OvSynch programme.

This programme utilised gonadorelin and racemic cloprostenol. This gained wide acceptance and was successful. OvSynch has become the first management tool for AI and is an alternative method to heat detection. Over the 20 years since its first implementation, OvSynch has been modified many times to improve its reproduction outcomes and widen its use.

The original programme had the GnRH injection at day 0, a prostaglandin (PGF2α) at day 7, another GnRH on day 9 then timed artificial insemination (TAI) on day 10.

Then over the years the following modifications were adopted:

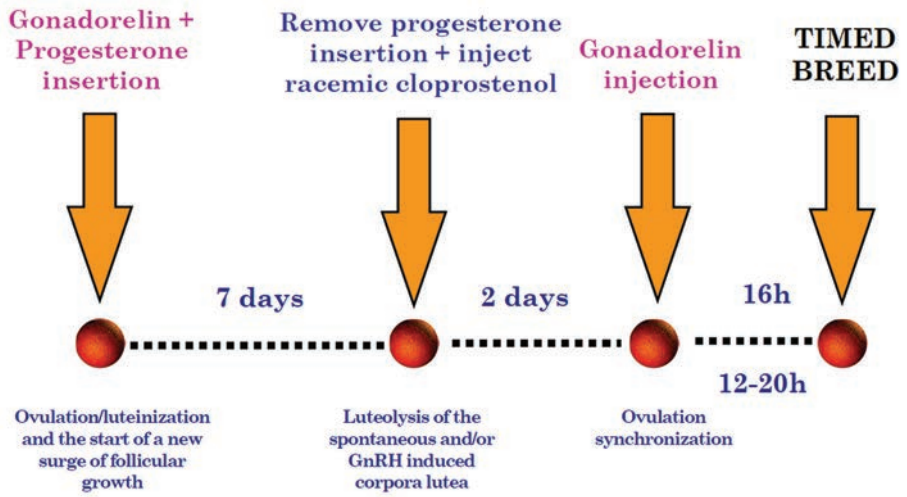
Presynchronisation of ovaries with PGF2α to equalise a cycle before the beginning of the OvSynch protocol. The PreSynch protocol starts with a PGF2α injection given 12 days before OvSynch

Double OvSynch, which proceeds through two OvSynch protocols seven days apart and follows with TAI after the second protocol

Second injection of PGF2α during OvSynch protocol to improve luteolysis.

Intravaginal devices for maintenance of CL function.

The adoption of intravaginal devices into the OvSynch programme became de rigeur for many years so that a typical programme was as depicted at top of the page:

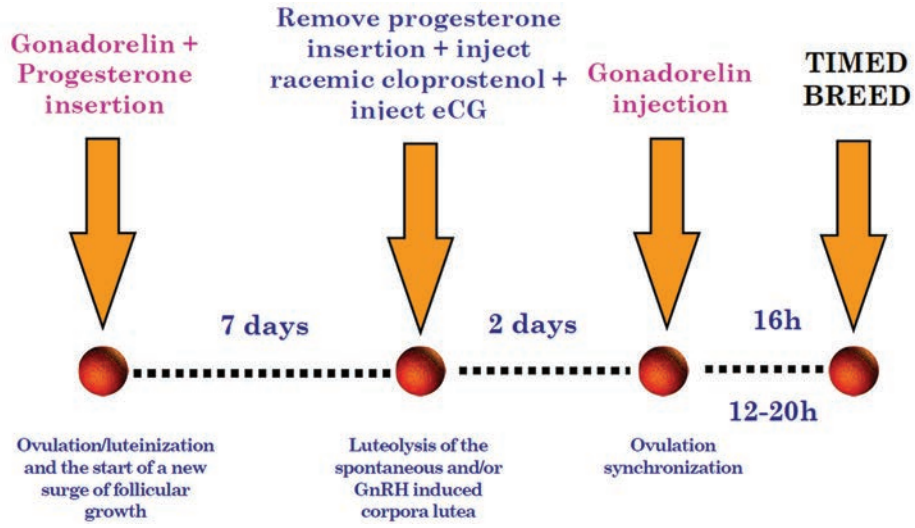


The Rise and Fall of eCG

A further modification to the whole OvSynch programme occurred with the addition of equine chorionic gonadotrophin (eCG). eCG has been used in procedures of TAI in cattle to try to improve the fertility rate because it produces, among other effects, an increase of follicular growth. In the horse eCG has a luteinizing effect but in cattle eCG has dual action, binding to both FSH and LH receptors. Binding to FSH receptors on the dominant follicle has a trophic effect on the follicle, resulting in a larger follicle.

This larger follicle produces more oestrogen, improving the uterine environment and promoting the LH surge which drives ovulation.

This led to an extra injection on the programme but not to an extra visit to the farm by the veterinarian. The revised programme was as below:



While the science behind the efficacy of incorporating eCG into an OvSynch programme was sound it raised ethical issues. There have been proven to be huge animal welfare issues in the farming of horses for the collection of eCG. So much so that Vetoquinol, as an animal health company and the market leader in this field, to their credit totally withdrew all product from the market.

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Econom8

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There is still generic eCG available and used in New Zealand but today's society considers animal welfare an important issue, especially in food production and farmers have often unfairly been targeted by welfare groups. This has made farmers quite sensitive and very readily take responsibility for improving the reputation of the agricultural sector.

Farmers are very receptive to a programme that better fulfils animal welfare standards and new programmes have been readily adopted.

Alternative Solution

Work done in New Zealand showed a 3% increase in pregnancy if their racemic cloprostenol dose is increased from 2 ml (500 µg) to 3 ml (750 µg) per cow. This tallies with other data from around the world showing that the response rate in cows with a partially sensitive (or refractory) corpora lutea aged between 2-5 days, when the sensitivity towards PGF2α is questionable, is reduced. This can be improved by either increasing the dose rate or giving a second injection 24 hours later.

The recommended time for the second PGF2α injection is 24 h after the first injection without any changes to the times of GnRH injection or TAI

Giving a second injection of racemic cloprostenol was the basis of a new programme which was really the old OvSynch design with the modification of a second injection of PGF2α during the OvSynch protocol to improve luteolysis. Whether or not to adopt the higher dose is a matter of benefit/cost ratio, considering the time spent for double injection and for the cost of a larger dose.

This resulted in a slightly more complex but effective programme that satisfied welfare concerns:

One practice in particular promoted this system to farmers and claimed they were happy to be associated with a better animal welfare programme despite the cost of an extra visit and extra injection. Anecdotal data claims efficacy every bit as good as with the protocol using eCG;

This regime, based on the OvSynch protocol relied on older technology such as gonadorelin as the GnRH component and racemic cloprostenol as the PGF2α.

Now available in New Zealand is the single isomer D cloprostenol (Dalmazin – Fatro) which has proven to have three times the potency of the racemic mixture.

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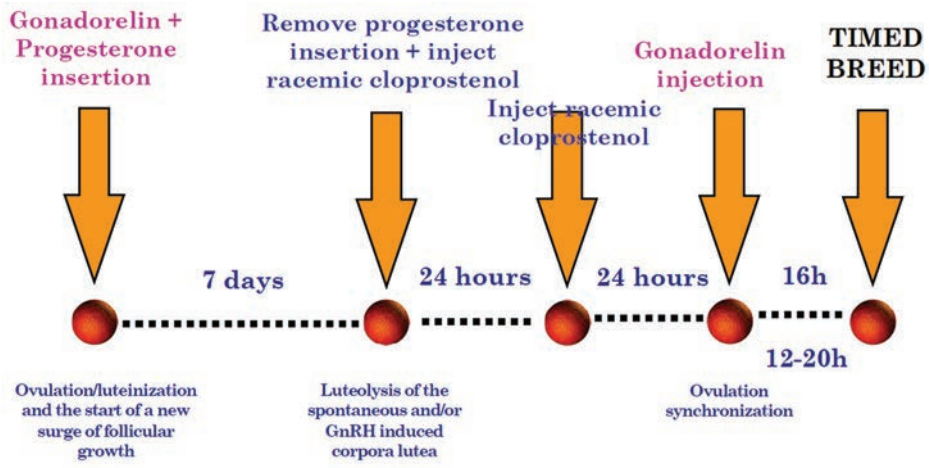


The Divorce

The mother-in-law arrives home from shopping to find her son-in-law, Nigel in a steaming rage and hurriedly packing his suitcase.

"What happened Nigel?" she asks anxiously.

"What happened? I'll tell you what happened! I sent an email to my wife telling her I was coming home today from my fishing trip. I get home ... and guess what I found?

Your daughter, my wife, Jean, naked with the next door neighbour in our marital bed!

This is unforgivable! The end of our marriage. I'm done. I'm leaving forever!"

"Ah now, calm down, calm down Nigel!" says his mother-in-law.

"There is something very odd going on here. Jean would never do such a thing!

There must be a simple explanation. I'll go speak to her immediately and find out what happened."

Moments later, the mother-in-law comes back with a big smile.

"Nigel, there, I told you it must be a simple explanation. She never got your email!"

Econom8

(Continued from page 5)

When we look at the work done by Montaser et al comparing racemic cloprostenol with dinoprost and D cloprostenol it appears that the pure potency of the D cloprostenol makes it more effective in the presence of prostaglandin dehydrogenase and so offer a more economical solution.

Note: generic names are substituted for the trade names used in the original article.

In addition Valldecabres-Torres et al, indicated that there is a further increased benefit with an increased dose of d cloprostenol, 300 µg in place of 150 µg.

Also available in New Zealand is a newer generation GnRH in the form of lecirelin (Dalmarelin - Fatro). Lecirelin produces a higher and much longer LH spike so improving chances of ovulation and fertilisation.

Group	Follicular size (mm)	Days to heat	1st insemination pregnancy rate (%)
Dinoprost 25 mg	11.17±0.433	3.7± 0.26	10
d/l cloprostenol 500 µg	11.53±0.33	3.3 ± 0.21	30
D cloprostenol 150 µg	15.5±0.82	3.6 ± 0.31	40

Therefore, for a better response with refractory corpora lutea in a blind synchronisation programme, the options are:

1) If using racemic d/l cloprostenol, or dinoprost, give an extra injection thus increasing the workload and the cost of treatment.
2) Get similar results, with no cost increases, using a standard dose (150 µg) of d cloprostenol (Dalmazin)
3) If cost is not the object get the best results using 300 µg of d cloprostenol (Dalmazin)

Option 2 coupled with Dalmarelin as the GnRH component ensures a high efficacy at a very economical rate.

The Take Home Message

1) **OvSynch works**
2) **It is even better with eCG**
3) **An extra PG dose is as good as using eCG but cost is greater**
4) **Lecirelin + single isomer PG just as effective but much more economical**

Shipwrecked

The vicar was the lone survivor of a shipwreck and, as he staggered ashore, he found himself surrounded by hundreds of spear wielding warriors.

'Oh God, I am finished," he cried.

A voice thundered from on high, "No you are not!"

"Who is that?" enquired the vicar.

"It is God. Now listen carefully. Grab that spear from the thin warrior next to you and plunge it into the chief's heart.'

Although terrified the vicar did exactly what he was told..

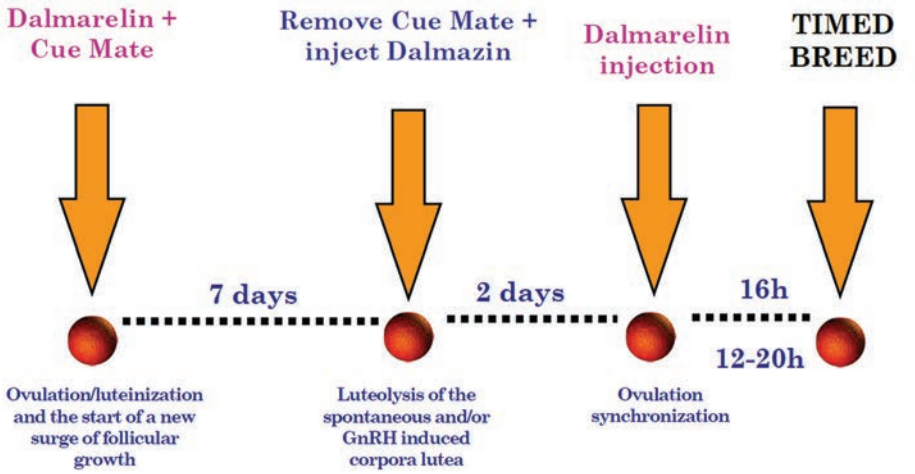
He looked skyward as the chief collapsed to the ground.

The voice boomed out once more, "'NOW you are finished!"

Econom8 Protocol

The Econom8 programme utilises the Fatro lecirelin, Dalmarelin as the GnRH component, the Fatro single isomer D cloprostenol as the PGF2α both in combination with the progesterone implant Cue Mate (Vetoquinol). Cue Mate has been chosen as it is noted for higher retention and less straining by the cows and this fits in well with Vetoquinol's on-going commitment to animal welfare.

The protocol is thus as alongside:



This protocol is similar to the original OvSynch programme but utilises ingredients with greater potency and at lower cost resulting in a protocol unmatched for efficacy; every bit as good as the eCG protocol or the extra PGF2α method. There is also the advantage of one less veterinary visit making it much more attractive to clients; this makes it easier for practitioners to convince farmers to engage in a planned reproduction programme.

References (available on request):

1) Duirs, Market Study To Measure The Comparative Performance Satisfaction Level of Cue-Mate® A New Product for Treating Non Cycling Dairy Cows on New Zealand Dairy Farms, February 2000, Data on file

2) Meziane et al, A clinical study of metritis in dairy cows in the region of Batna (Algeria) and their treatments using different therapeutic protocols, Vet World 6(1):45-48.

3) Montaser and El-Desouky, Effect of Dinoprost Tromethamine, Cloprostenol and d-Cloprostenol on Progesterone Concentration and Pregnancy in Dairy Cattle, Journal of Agriculture and Veterinary Science (IOSR-JAVS), Volume 9, Issue 2 Ver. I (Feb. 2016), PP 64-67

4) Nowicki, Barański, Baryczka, and Janowski. OvSynch protocol and its modifications in the reproduction management of dairy cattle herds – an update. J Vet Res 61, 329-336, 2017

5) Pérez-Marín et al, Oestrus Synchronisation in Postpartum Dairy Cows Using Repetitive Prostaglandin Doses: Comparison between D-Cloprostenol and Dinoprost, Acta Veterinaria 2015 Mar; 63 (1): 79-88

6) Stevenson et al, "Luteolysis and pregnancy outcomes after change in dose delivery of prostaglandin F2α in a 5-day timed artificial insemination programme in dairy cows," Kansas Agricultural Experiment Station Research Reports: Vol. 0: Iss. 2.

7) Valldecabres-Torres et al, Effects of d-cloprostenol dose and corpus luteum age on ovulation, luteal function, and morphology in non-lactating dairy cows with early corpora lutea, J. Dairy Sci. 95 :4389–4395

8) Vilanova, De Briyne, Beaver and Turner. Horse Welfare During Equine Chorionic Gonadotropin (eCG) Production. Animals 2019, 9, 1053.

9) Wiltbank et al, Effect of a second treatment with prostaglandin Fα during the Ovsynch protocol on luteolysis and pregnancy in dairy cows, J. Dairy Sci. 98:8644–8654

10) Young, Evaluation of Prostaglandin dose for NZ non-cycling dairy cows. NZVA Conference 19-22 June 2018

A Groaner

A man was sitting at home one night when there was a loud knock on the door.

He opened it to find a 6 foot stag beetle standing on the doorstep.

"What the hell is this?" the man says angrily, whereupon the beetle launches into a furious attack with a frenzy of kicks and punches – then leaves.

The man crawls into his house and calls for an ambulance, but is naturally not too keen to reveal the truth behind his injuries.

Finally one day he tells his doctor but, surprisingly, the doctor believes him and is sympathetic.

"I understand," he says, "there is a nasty bug going around at the moment..."

Home Brew

The exhausted bush walker stumbled into a drover's hut high in the Southern Alps and was immediately welcomed by its lone inhabitant, a tough old mountain man.

The visitor was offered food and invited to sit beside the log fire.

After the meal the old man pulled down an unlabeled bottle from the shelf and offered the visitor a drink.

The bush-walker accepted but when he pulled the cork and sniffed the evil home brew he graciously declined and attempted to return the bottle.

"Drink it," insisted the old timer. When the lad declined again the old man reached for his rifle, cocked it and pointed it the lad's head.

There was no other alternative but to take a swig of the vile firewater that kicked like a mule.

When the bush walker gasped his way to recovery he handed the bottle back, and the old man handed him the rifle.

"Now you hold the gun on me while I have a drink," said the old mountain man.