

## General Comments – Dairy Health Management CE Program Reproduction Assignments

Overall these assignments were very well done. They generally were to the point and kept to only the important details. Attached are a few examples of assignments that met the standard well. Names have been removed for client confidentiality.

A few comments that were frequent across assignments:

- 1) Remember you are writing to your client, not me.
- 2) Resist the urge to tell the client everything you looked at that was unremarkable. Stick to the important findings that you want them to take notice of.
- 3) It is helpful to include starting reproductive parameters on the SOP. Example PR = 13% August 2017. This holds the SOP accountable to improving from there and encourages re-assessment.
- 4) Formatting of the SOP
  - There are a few options that can work:
  - Letter to your client on your clinic letterhead
  - SOP for a binder – be sure to include title, client name and your name

Many people attempted to quantify the potential economic gains using the Wisconsin-Cornell DairyRepro Tool. There were some difficulties expressed about appropriate Canadian numbers to use on the first inputs of the program. Dr. Ferguson collected a few numbers that would be good inputs and has explained where he obtained them. Feel free to consider these when using the DairyRepro tool for future scenarios.

### Using the Wisconsin-Cornell DairyRepro Tool with Canadian Numbers – Courtesy of Dr. Ewen Ferguson

If a cow milks 100 lbs per day, the equivalent milk would be 45 kg.

In Canada, a cow producing 45 Kg would get paid \$0.72852/l ( as per DFO Average total net, April 2017) = \$32.78 per 45 Litres.

The value we would use in Julio's Economic parameter would be \$32.78 Cdn/cwt.

Note: we are looking at feed costs and revenue from a Canadian dollar perspective, but if we wanted to compare to US dollars, use an on-line currency converter...in US dollars, the equivalent would be \$24.50 US/cwt.

I was looking at some of the other metrics in the model, and if it would be helpful, Jeremy and I have come up with some quick ways to determine some of the numbers...

Herd Size (#): in Dairy Comp, type the command 'Econ\id365!'. This will give the total inventory as well as the # of milk cows, dry cows, etc. For the purposes of this model, I am not sure what number Julio is looking for—perhaps we need to have that clarified.

Average body weight—the default of 1400 lbs is probably close, unless the farm has better numbers.

Involuntary Culling: in Dairy Comp, type the command: 'Egraph fresh sold died for dcode=21-20 fdat>-365\fzcn1'. This command will exclude any dairy and export sales and look at the solds and deads over the last year. Add both solds and deads and divide by the number of fresh cows to get the percentage.

Mortality Rate: same command but just use the deads/fresh cows.

Stillbirth: type the command 'events\3' or 'events\3 by lctgp'

Re Feed Cost per lactating cow—just to get some consistency, we should try to use some standard values, unless the farm has ‘real’ numbers.

I contacted our local Purina rep and she provided me with a 2017 summary of feed costs from 115 ROF participants. The average feed cost was \$6.73/cow/day, with the range of \$4.04 to \$10.06. I haven’t seen the distribution, but considering most ROF farms may be better than average, I think a good ‘central tendency’ number would be \$7.00 per cow per day. To convert this to (\$/lb DM), assume the average cow will consume 22.5 kg DM, this equates to 52 lbs DM. At \$7.00 per day and a DMI of 52 lbs DM, the lactating feed cost per lb of DM is \$0.135.

Using a similar methodology for dry cows, The Purina ROF dry cow average was \$2.80 (range 2.41-3.50). This was for close up cows—no values for far-off or one group TMR dry cows. I propose we use \$3.00 per day as a standard and estimate an average DMI of 13.5 kg (30 lbs) over the whole dry cow period. Feed costs for dry cows would be \$0.10 per lb DM.

Heifer/male calf, replacement costs and cull cow prices should be easy to establish with the farm in question.



## **Imaginary Farms Herd Reproductive Performance Evaluation**

### **Current Reproductive Performance:**

The current overall pregnancy rate (PR) for the last year is 19%, which is significantly lower than the industry goal of 25%. The insemination risk (IR) and conception risk (CR) are both 43% (Goals: IR= 60%, CR= 42%), which indicates the limiting factor for your herd's PR reaching an optimal level is low insemination risk. There are 2 management decisions that are significant contributors to the low IR. #1: There is a strong preference to breed cows in a standing heat compared to breeding with a timed-AI program, and #2: if cows due for reproductive examination are not routed to the herd health pens on herd health day by the robot some are simply skipped until the next herd health. Both of these are detrimental to your reproductive performance, as evidenced by almost 60% of heats being missed, making this a large area of opportunity for improvement. Where the greatest impact can be made is with first service. The average days to first AI over the past 12 months is 89 (range: 56-222) and only 58% of first breedings have been within 90 DIM (Goal: 90%+). I suspect the main reason for this is simply lack of time devoted to, or available for, estrus detection, however, this in my opinion is the primary bottleneck to your reproductive program. There are others that can be addressed in the future.

### **Recommended management change:**

- Enroll all cows on Double Ovsynch for first AI
  - o Ensures ALL cows will be bred by 90 DIM
  - o Maintains a high CR for first AI

### **Program details:**

- Enroll cows weekly on the first Saturday after they reach 43 DIM
- Shots will be required Tuesday, Wednesday, Thursday and Saturday of each week with AI falling on Friday at 70 to 76 DIM (see attached diagram of protocol)
- The cost of the program for the reproductive hormones will be approx. \$24 plus ~20 minutes of labour per cow
- The expected conception rate of the program is 50± 5%

### **Monitoring the management change:**

- The expected change in overall PR from moving to the Double Ovsynch program will be an improvement from 19% to 23% (see attached tables)
- The expected improvement in overall IR will be 51% from 44% (see attached tables)
- The expected insemination rate in the interval 71-92 DIM will increase from 46% to ~90% and the PR in the same interval will likely increase from 20% to >42%
- Benefit from our management change could be seen within about 90 days, but we really need about 6 months to be able to critically assess its impact
- This change will be assessed by monitoring the 21-day pregnancy risk table, conception rate tables, and the graph of days to 1<sup>st</sup> insemination in Dairy Comp 305
- Economically, we will measure our change using the model reported by Dr. Mike Overton indicating the rate of return in income per cow per year for every 1% improvement in PR (see attached graph)
- With this recommended change, moving from 19% to 23% will yield approximately \$52 more income per cow per year, which equates to ~\$5000 more net income for the farm after the cost of the new program is considered.
- Should your herd not achieve these targets it would be very easy to discontinue double ovsynch and return to your current program

Thank you for allowing me to evaluate the reproductive performance of your herd. As mentioned above the primary bottleneck limiting greater success in your herd's reproduction is timing of first AI. I am confident this can be rectified by the institution of the double ovsynch protocol for first AI. If our targets are reached we can then focus on other parts of your reproduction program to maximize performance in your herd.

Sincerely,

Dr. Imaginary  
Veterinary Associate  
Imaginary Veterinary Services

## Fantasy Farms – August 2017 Reproduction Assessment

### Current Status over past 12 months

- Preg Rate = 7% (Ontario avg 15%)
- Insemination Rate = 26% (Goal >50%)
- Overall Conception Rate = 27% (Goal >35%)
  - 1<sup>st</sup> service CR = 30%
- Average DIM @ 1<sup>st</sup> breeding = 130 DIM (Goal <90 DIM)
  - Range from 60 – 230 DIM
- Voluntary Wait Period = 70 DIM
- Average days between rebreedings = 60

Many opportunities for improvement, but main two focuses will be:

1. Switch to biweekly Herd Health (HH)
2. I will generate a HH list for us from DairyComp
3. Reducing DIM @ 1<sup>st</sup> breeding
4. Reducing rebreeding interval

SUN	MON	TUES	WED	THURS	FRI	SAT
				2cc Est		
				2cc Est		
				2cc Fert		
				2cc Est		PM 2cc Fert
BREED						

### Recommendation for Reducing DIM @ 1<sup>st</sup> breeding

- Pre-synch Ovsynch Program
  - At HH I will examine cows between 30-44 DIM to ensure they are free of uterine disease and enroll them on needle program in chart above
  - It may look daunting, but most shots are on Thursdays! Simple!

### Recommendation for Reducing Rebreeding Interval

- Continue diligent use of OVS/OVS+ program you are currently using
- To help execute this program I will bring needle schedules for each cow we enroll on a program to hopefully make the shots easier (I am already doing this in other herds and seems to keep things simple & CQM compliant)
- With biweekly HH we will identify open cows earlier and be able to enroll them onto a program to get rebred

### Estimated cost vs return on investment

- Economic analysis of current repro program is net value \$2800/cow/year
- Economic analysis of recommended repro program is net value \$3100/cow/year
  - For your herd, the recommended program is worth over \$10000/year!!!

### Expected Outcomes

- DIM @ 1<sup>st</sup> breeding <90DIM
- Rebreeding interval no greater than 50 days
- Within 6 months should see Pregnancy Rate increase to >10% and Insemination Rate >40%
- Most important outcome is improved milk production as more cows freshen and a greater % of the herd is in peak milk production
  - We will not expect to see this return on investment until Fall 2018
- I will bring reproduction parameter updates from DairyComp to HH every 2 months to monitor our progress
  - If we do not see expected outcomes within 6 months we can reassess and develop another strategy

*Dr. Imaginary the Second*

## Nameless Dairy – Reproduction Analysis

Current Pregnancy Rate: 15%

Stated Voluntary Wait Period (VWP): 50 days

Current Overall Conception Rate: 36% (Goal: minimum 35, aim 40%)

Current Insemination Rate: 42% (Goal: minimum 50%, aim >60%)

There is the greatest potential for improvement by focusing on the Insemination rate:

- VWP is 50 days, however the first breedings range from 40-140 DIM, median of 90 DIM
- Rebreeding interval is long, ranging from 12-78 days, average 45 days
- Late identification of open cows (4 week herd health)
- Insemination rate is low
- **GOAL:** tighten the first breeding window, identify open cows quickly and rebreed efficiently

### Proposed Change:

1. Implement a Presynch-Ovsynch program for the first breeding
  - Have all cows bred for the first time by 70 days
  - Have Scout generate the list of cows to treat once per week
  - Start cows on Wednesdays when they fall between 32 and 39 DIM
  - *Farmer 1* will do the injections ( for all programs mentioned in this proposal), cows will be caught in head locks after the morning milking when fresh feed is delivered
  - Cost: \$3 per injection x 5 injections = \$15/cow, \$15/cow x 70 cows = \$1050
    - Assumes no cherry pick breedings, does not account for labour
2. Increase the herd health interval to 2 weeks
  - Identify open cows in a more timely manner
  - Rebreed identified open cows quickly
  - Herd health can remain on Wednesdays, every other week
  - Cost: \$55 call fee x 13 visits = \$715 (13 more visits/year than previous 4 week schedule)  
\$132 Professional Time x 26 visits = \$3432 (total Professional Time per year)  
\$198 Professional Time x 13 visits = \$2574 (total Professional Time currently)  
\$3432 – 2574 = \$858 more Professional Time with 2 week HH schedule  
Total Increased Veterinary cost = \$715 + \$858 = \$1573
3. Open cows identified at Herd Health are enrolled into a synch program
  - Cows cycling normal are enrolled into an Ovsynch program, starting Wednesday
  - Cystic cows or acyclic cows are enrolled into a GGPG program, starting Wednesday
    - Fertiline-7days-Fertiline-7days-Estrumate-56 hours-Fertiline-16 hours-Breed
  - Cost: there should be no increased cost as we are doing the same program to the cows as we were previously, just implementing it sooner
    - Savings: Decrease days open @ \$2.10 at 150DIM
4. Install an Activity Monitoring System
  - Increased detection of natural heats, both on first breedings and on bred cows coming back into heat
  - Heat-time available from EastGen is an easy stand alone system
  - Cost: quote from EastGen, 70 collars with reader = \$10000

### Expected Outcome:

- Tighter first breeding window (range 53-75 days), decreased days open
  - Within 1 month
- Cows rebred by 52 days or less, majority of them around 21 days since last heat
  - Within 1 month
- Increased 12 month insemination rate
  - Within 3 months
- Increased 12 month pregnancy rate
  - Within 6 months
- Increased calvings per year
  - Within in 12 months

### **Economics:**

- Less days open = \$2.10 cost per day open (@150DIM)
- Increased calvings = More Peak milk per year = more milk shipped per year
- Using the Wisconsin-Cornell Dairy Repro Calculator the profit is \$205US/cow/year with the new approach (\$14 350US for the herd/year)
- Total Cost:  $\$1050+1573+10\ 000= \$12\ 623$ 
  - The new approach will pay for itself in approximately 6 months

### **Review Impact:**

- After 3, 6 and 12 months, we will schedule a meeting to assess the above parameters so far
  - If the general consensus is that it is not working at any point then the Presynch-Ovsynch will be stopped immediately and a new method discussed at that point
  - The herd health frequency will also change immediately if required
  - If the recommended change is undesirable, then stopping should immediately reverse the unintended consequences and will be reflected in the above parameters within 3 months.