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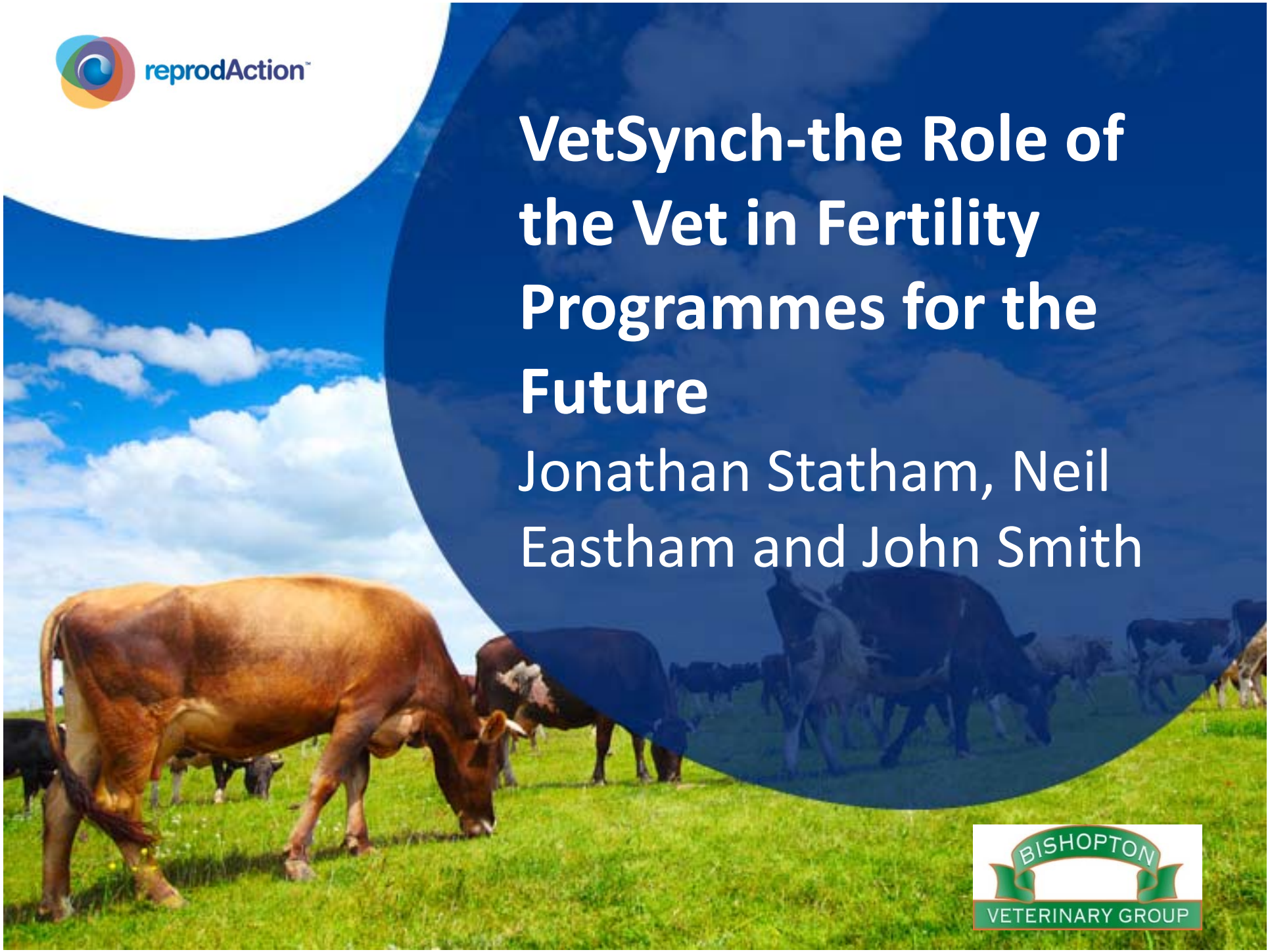
VetSynch-the Role of the Vet in Fertility Programmes for the Future

Jonathan Statham, Neil Eastham and John Smith



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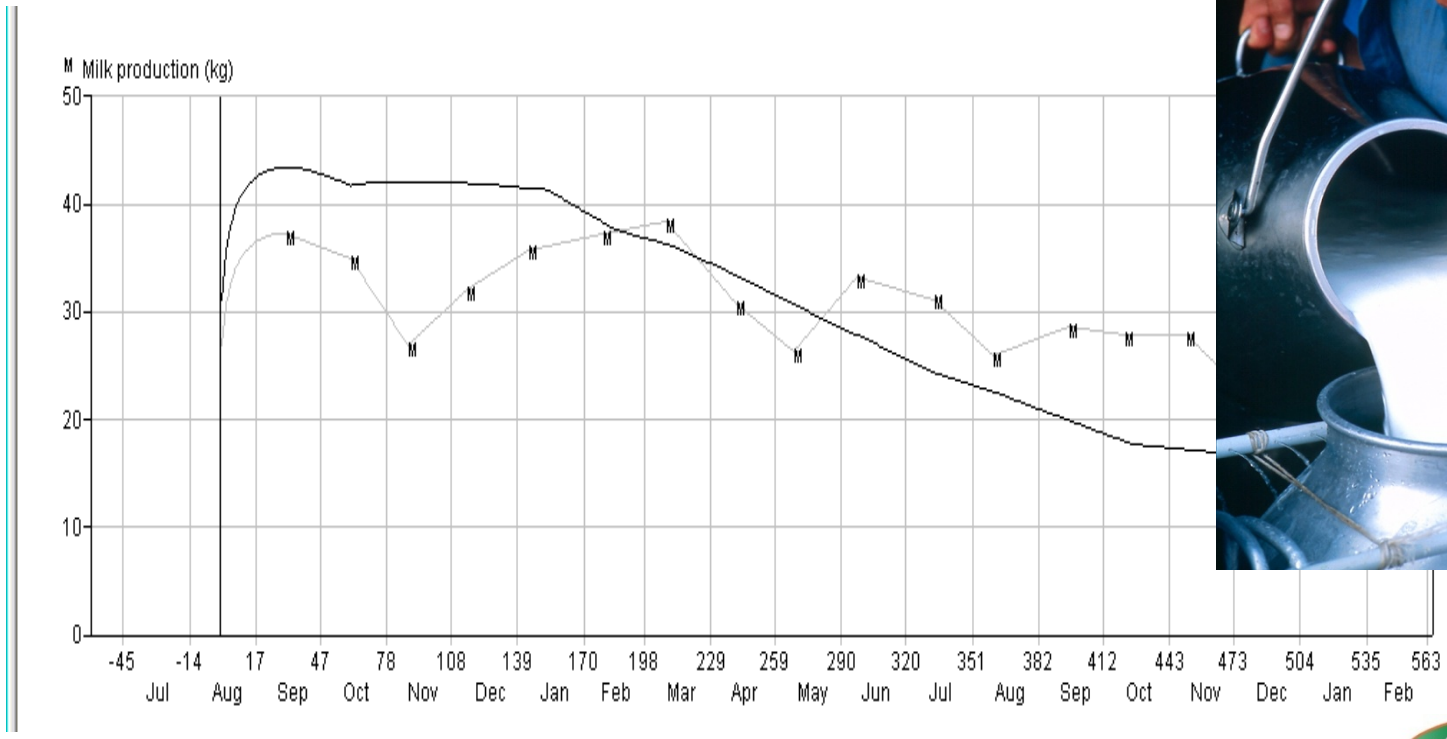
Efficient Milk Production

Fertility Performance Counts

Yield Decline



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What's the goal?

- What's the **fertility** goal?
  - Conception rate?
  - Calving index?
  - Pregnancy rate?
  - Submission rate?
  - Heat detection rate?
  - Average DIM
  - Pregnancy risk

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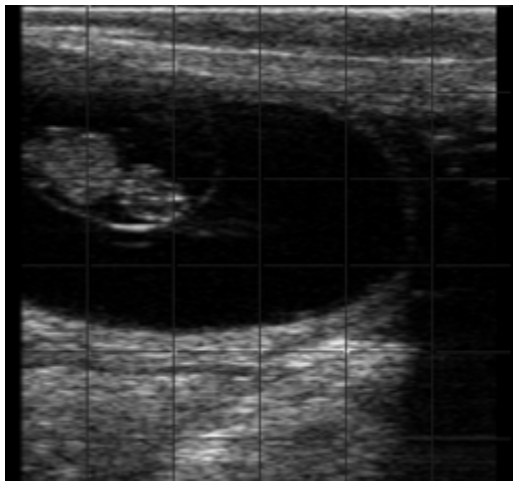
Excellence in Practice

- Goal 1 = As many cows in calf as possible!



- Goal 2 = As few empty cows as possible!

(CR x SR) = Reproductive Efficiency (Pregnancy rate)

CR – very difficult to improve

SR – easier

RMS, Heat time, Silent herdsman, synchronisation

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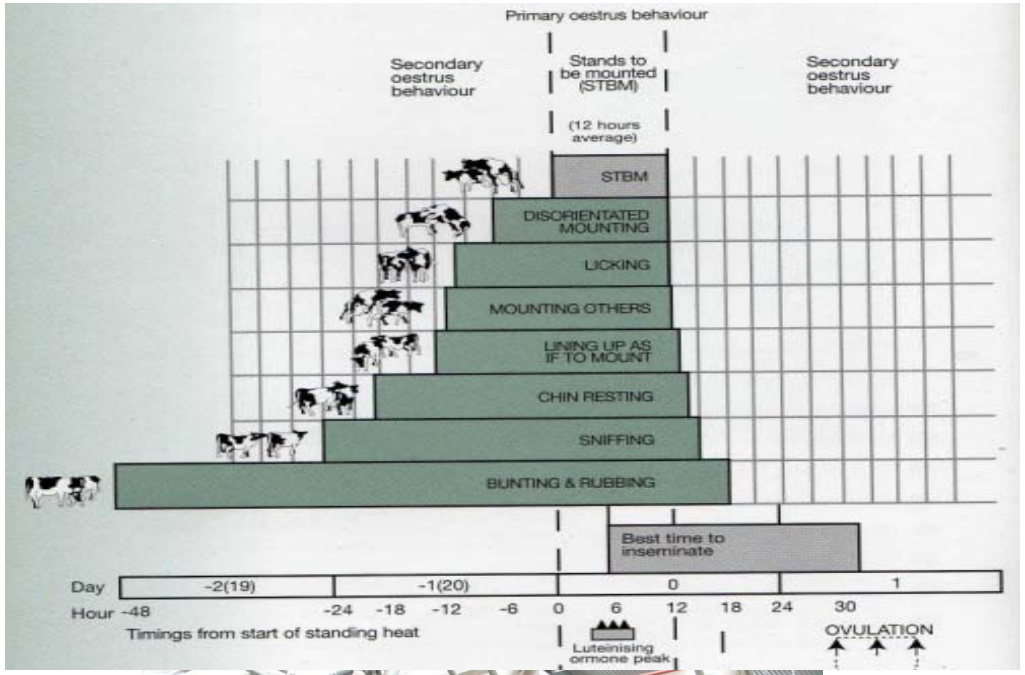
Traditional oestrus detection



Oestrus detection requires:

- a skilled observer
- sufficient observation time
- cows able to show overt signs of oestrus.

The trend towards larger herds

- increased numbers of cows/herdsman
- decreased time for observations.

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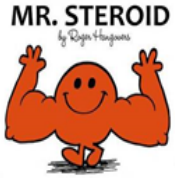
QUESTION 1.

How many higher yielding dairy cows actually tend to 'stand to be mounted' (STBM) when in heat?

High liver blood flow=high metabolism

High metabolism=steroid hormones broken down quicker



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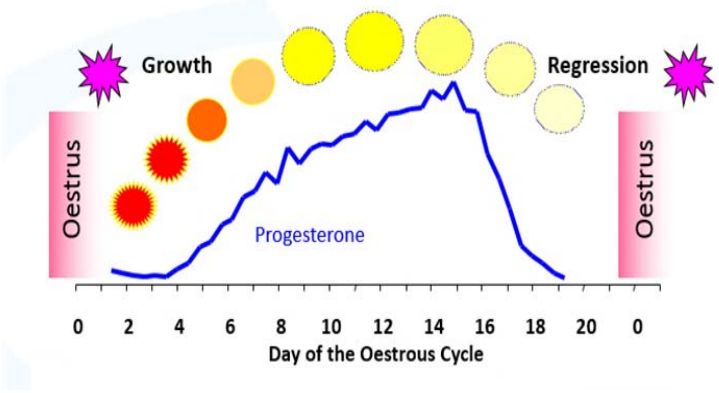
Steroid hormones = progesterone and oestrodiol

A1:

- *a. 98%*
- *b.76%*
- *c. 58%*

Suboestrus & Technology



- Oestrus expression reduced in modern dairy herds
- **42% Holstein-Friesians failed to express standing oestrus**

  (2005 study)
- ovulation confirmed by:
  - serial ultrasound examination
  - hormone assay.

TECHNOLOGY CAN HELP!

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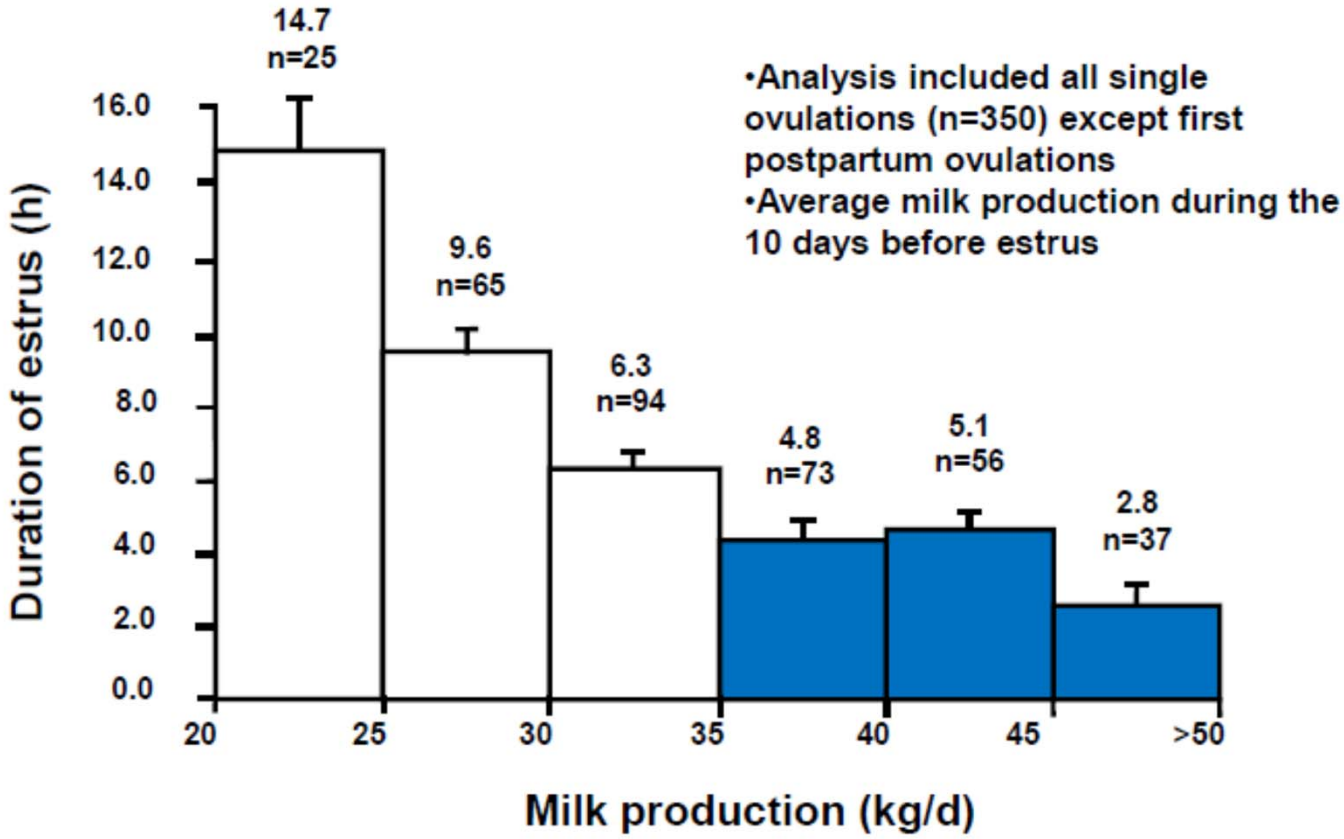
research | advanced breeding | food futures | training

Duration of oestrus in relation to milk production



- Analysis included all single ovulations (n=350) except first postpartum ovulations
- Average milk production during the 10 days before estrus

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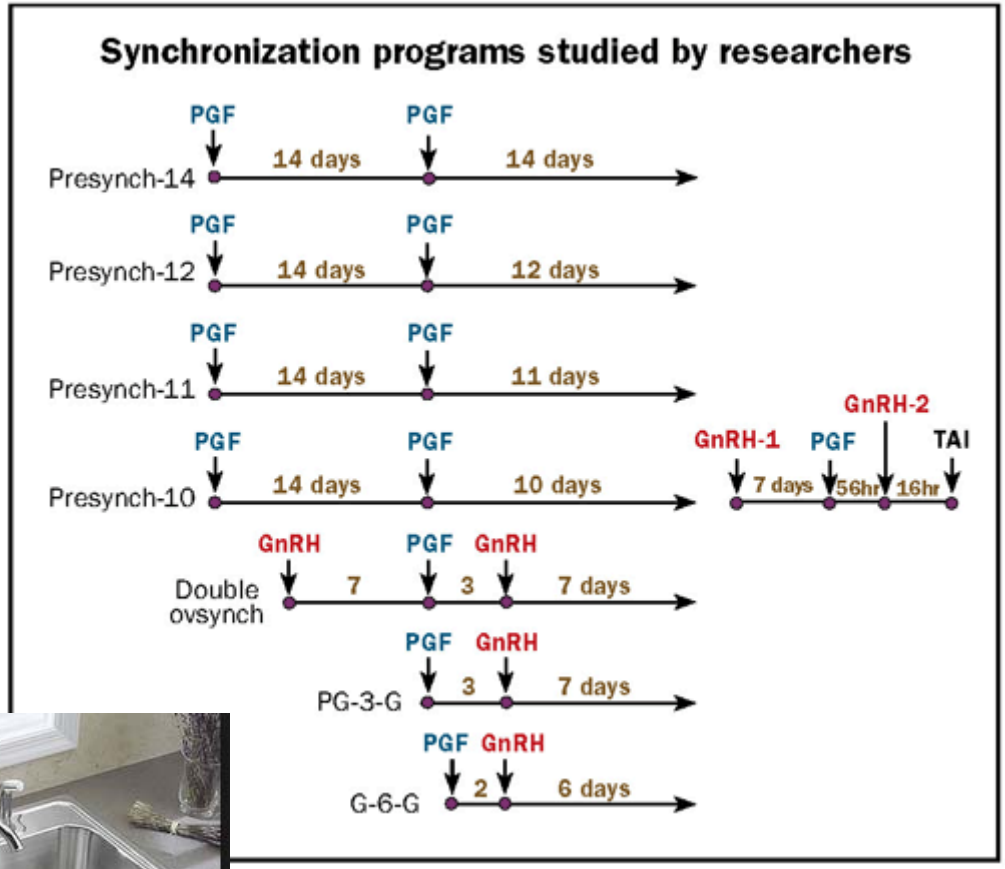
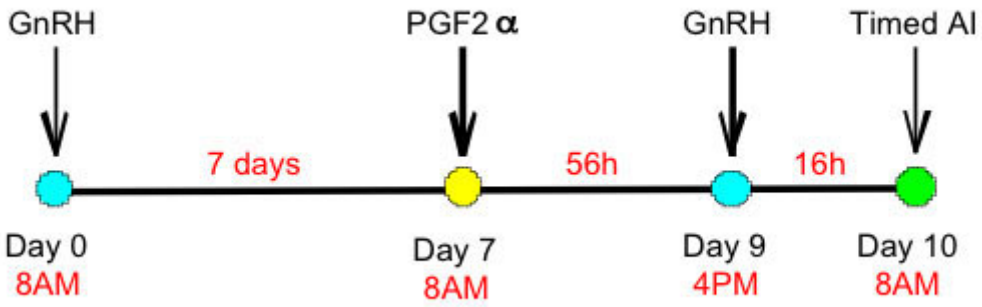
Lopez et al., 2004; Anim. Reprod. Sci. 81:209-223

Synchronisation options

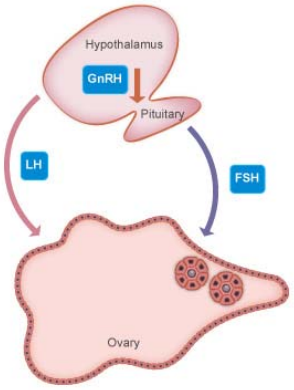
- Ovsynch
- Presynch
- Cosynch
- Resynch
- PRID synch
- Kitchen synch...

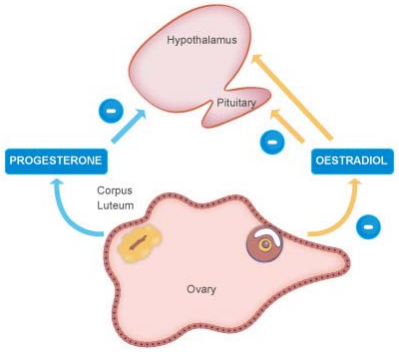


Ov-synch



Created by Richard Pursley in 1995!





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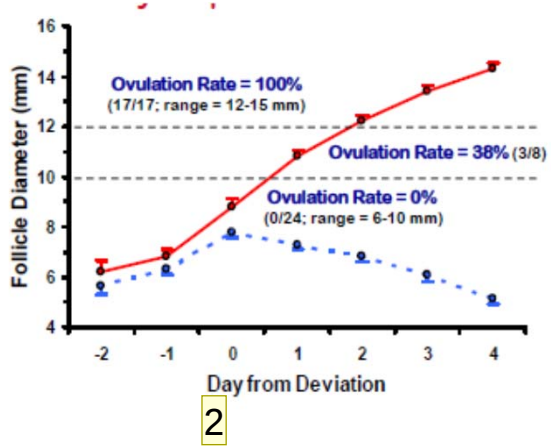
Ov-Synch – The 1st injection

About 15-25% of cows lack a CL or have low P4 at the time of the first OvSynch GnRH



2

So only 50 to 60% of the cows ovulate when treated at random stages of the estrous cycle

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Fricke et al., 2003; Sterry *et al*., 2006, Silva *et al*., 2007

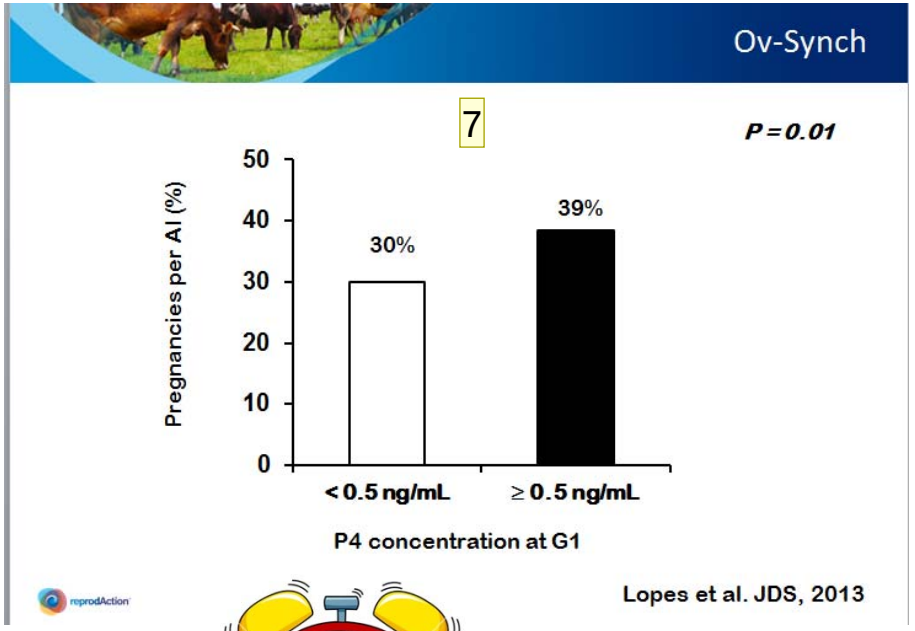
Slide 11

2 I have rearranged text so it is easier to read?
Carol Atkinson, 05/11/2014

Ov-synch - Timing

What do we need at the start of ov-synch?

- High P4 at start = **need CL**
- **Follicles have to be over 10mm to have LH receptors therefore can not ovulate before this**
- At PGF2 injection, CL needs to be responsive to PGF = **before day 17 of cycle**



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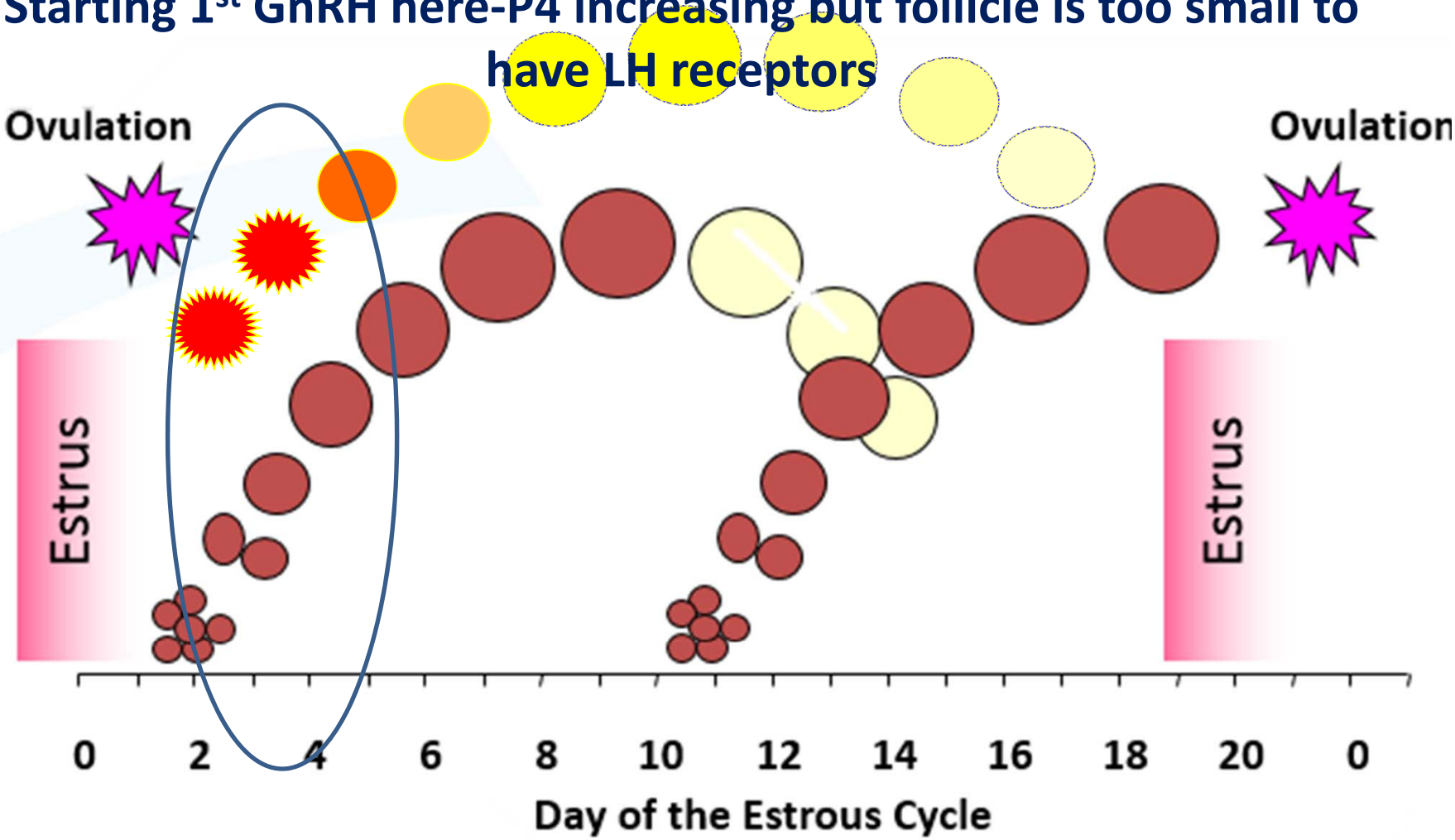
Slide 12

7 I have rearranged text
Carol Atkinson, 05/11/2014

Ov-synch

Starting 1st GnRH here-P4 increasing but follicle is too small to have LH receptors



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QUESTION 2.

What day of the oestrus cycle should Ovsynch optimally be started on?

A2:

- *a. Day 0*
- *b. Day 7*
- *c. Day 14*

Ov-synch

Best results are found if start ov-synch around day 7!

How do we get a cow to day 7?
Use other protocols?

- Pre-synch
- G6G
- Double ov-synch
- GGPG

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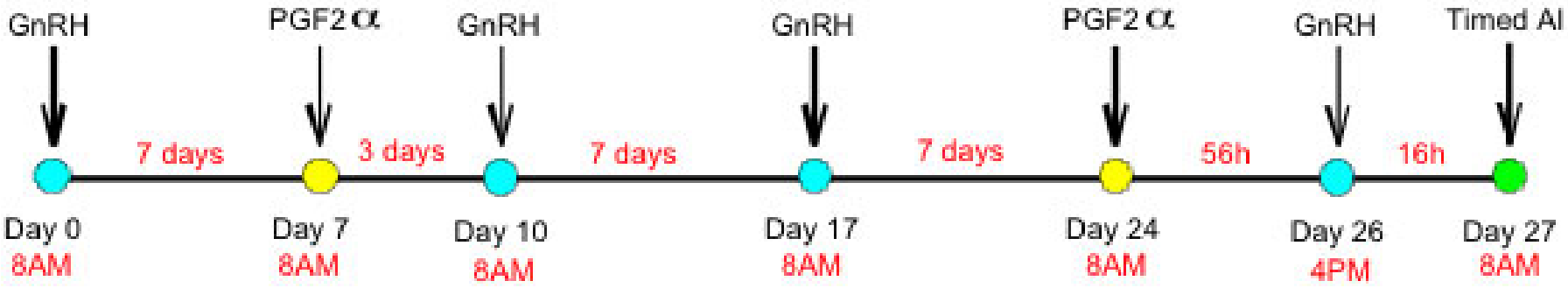
Ov-synch start at day 7

Double ov-synch



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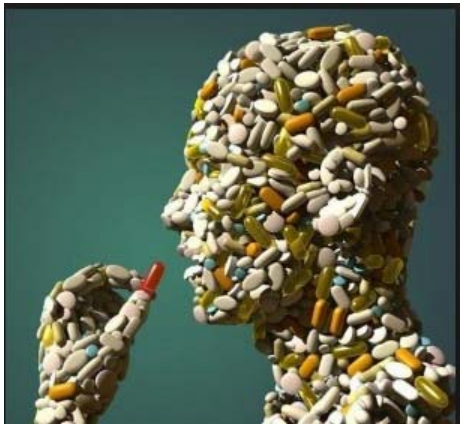
Ov-synch day 7 timing



Draw backs of these protocols?

- **Long protocols + multiple events**
- **Designed in USA so cows come out of VWP and are synchronised *already* to start Ov-synch without heat detection**
- **May not be as appropriate in UK farms where**

- Farmers do not usually present cows for synchronisation until well after VWP.
- Medicines are more expensive
- Some of which may have to be given by vet
  - **Progesterone treatment may be overlooked eg PRID**
  - **Public perception?**

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John & Mark Smith
Crosby Grange Farm

John & Mark Smith
Crosby Grange Farm

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Healthy Milk

- ***"Arlagården also requires that hormones are only used on post-parturient animals where the vet has identified a need for their use and checked the animals accordingly. This is to reduce the reliance on hormones in place of good management practice but does not preclude their use where required."***

Crosby Grange Metrics

HB SMITH Crosby Grange

Name: H B SMITH & SON

KPIs at a glance for last milk recording date: 24/03/2015

KPI details | Explain | Print Graph

Benchmark g: Bishopton: All Recorded Herds ▼ View KPI Graph: ---Select Graph--- ▼

KPIs	'Worst' ... 'Best'	'Worst'	You	'Best'	Mean
Milk/Cow/Year of life		3191	5821	6330	4869
Milk/Cow/Year		4676	11467	11467	8154
Lactation Yield		5744	10741	11243	8703
305 Day yield		4885	9938	10190	7750
Protein/Cow/Year		149	382	382	268
Fat/Cow/Year		181	501	501	328
Ave. Protein %		3.12	3.33	4.06	3.3
Ave. Fat %		3.35	4.37	5.52	4.03
Mean Parity		2.23	2.33	4.73	2.91
Calv. Interval<385 %		16.81	63.41	63.41	42.52
Ave. Lactation length		399	303	267	318
Ave. SCC		448	150	89	201
%Cows in Parity 1		44.03	34.92	8.33	28.64
Age 1st Calving		1379	920	777	902
Ave. Calving interval		513	375	375	414
Ave. Dry days		85	45	45	62
Culling + Death %		110	34	15	34
	Low ... High	Low	You	High	Mean
Ave. No. Cows		58	342	455	178

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11 400kg milk/cow/year

Name: H B SMITH & SON

Milk per cow per year

Benchmark g Bishopton: All Recorded Herds

View KPI Graph: Milk/Cow/Year

No Years: 5 Min Y-axis: 5000 Max Y-axis: 11000 Change

Explain | View Data | Print Graph

Period from: 23/04/2010 to 23/04/2015

BMG Mean

Milk/Cow/Year

Milk/Cow/Year (kg)

11000 10500 10000 9500 9000 8500 8000 7500 7000 6500 6000 5500 5000

J M M J S N J M M J S N J M M J S N J M M J S N J M M J S N J M

2011 2012 2013 2014 2015

Milk recording date

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Calving Index 375 days

50 days improvement over 5 years

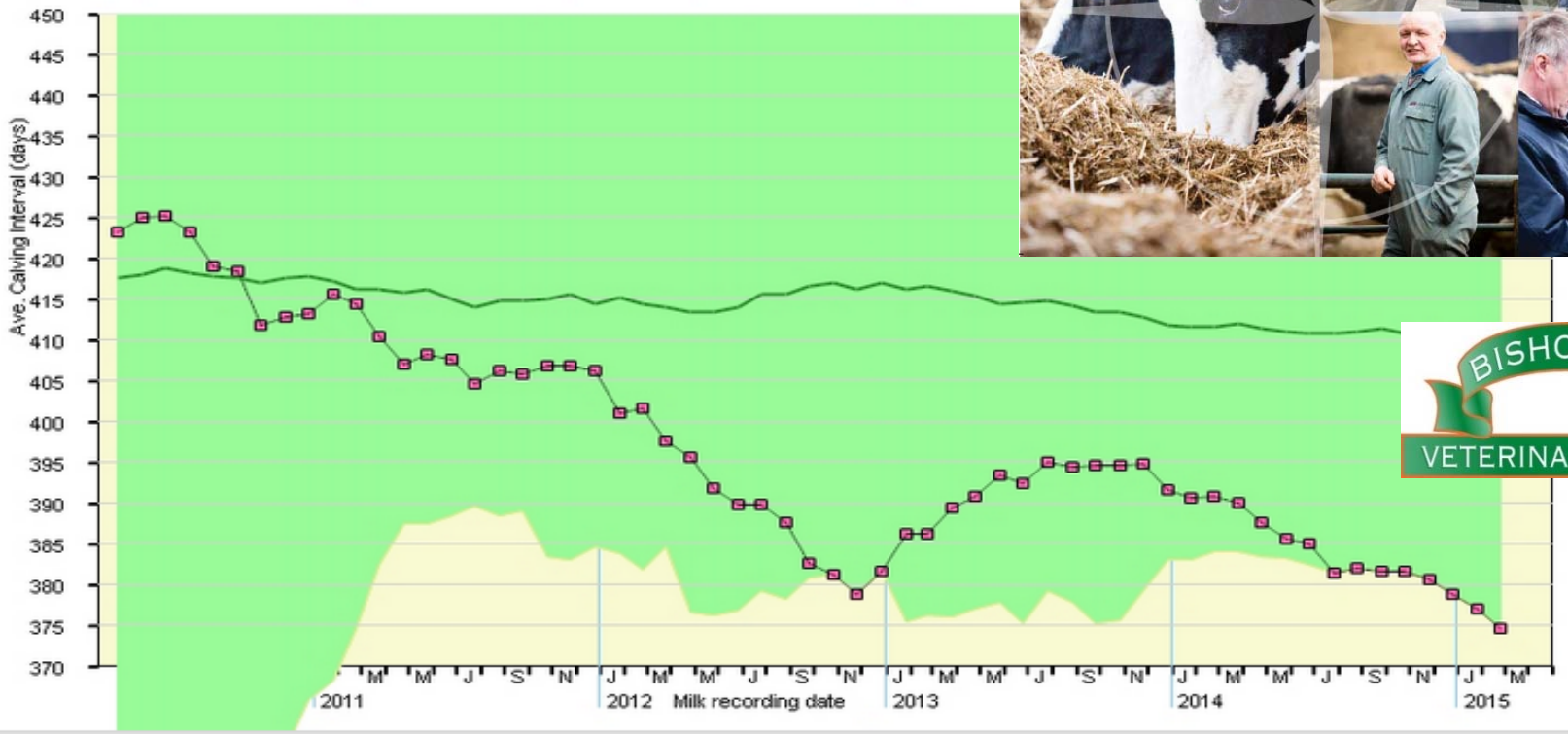
Name: H B SMITH & SON

Ave. Calving Interval

Benchmark g Bishopton: All Recorded Herds

No Years: 5 Min Y-axis: 370 Max Y-axis: 450 Change

Period from: 23/04/2010 to 23/04/2015



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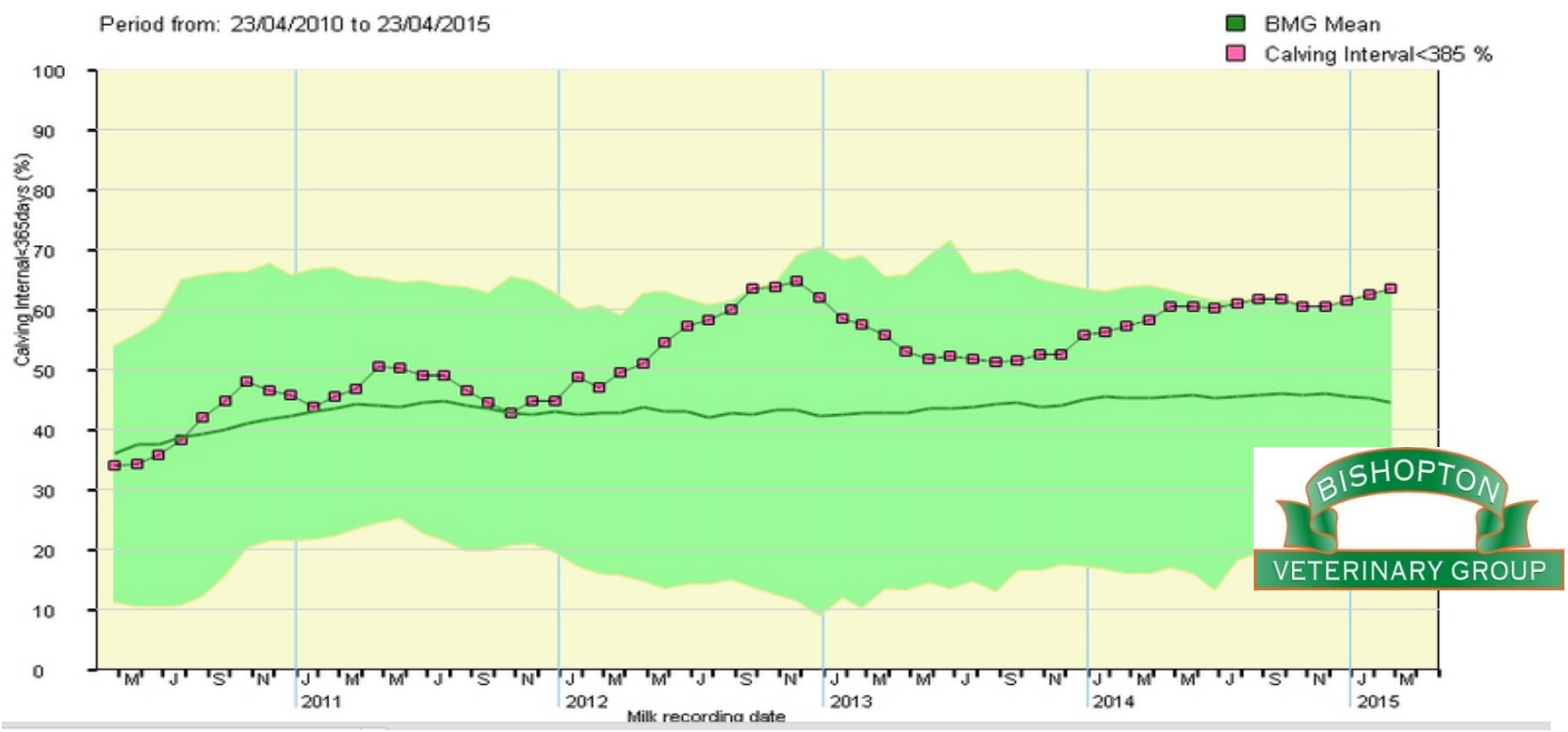
>60% In-Calf by 100 DIM

Name: H B SMITH & SON

Calving Interval<385days (%)

Benchmark g: Bishopton: All Recorded Herds ▼ View KPI Graph: Calving Interval <385 (%) ▼

No Years: 5 Min Y-axis: 0 Max Y-axis: 100 Change Explain View Data Print Graph



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Fertility Visit & ‘Vetsynch’

- Weekly visit
- Post-calving checks & treatment
- Observe heat behaviour & activity from calving AND RECORD
- Team approach
- Start cows ‘ONO’

at 40-50 days (typically)

- Vet targeted treatment every week based on
  - History/External exam/Internal exam (scan)
  - Previous treatments
- Start ‘(Ov)synch’ on best day...or serve when seen

Weekly Fertility Visit
-Good Handling System

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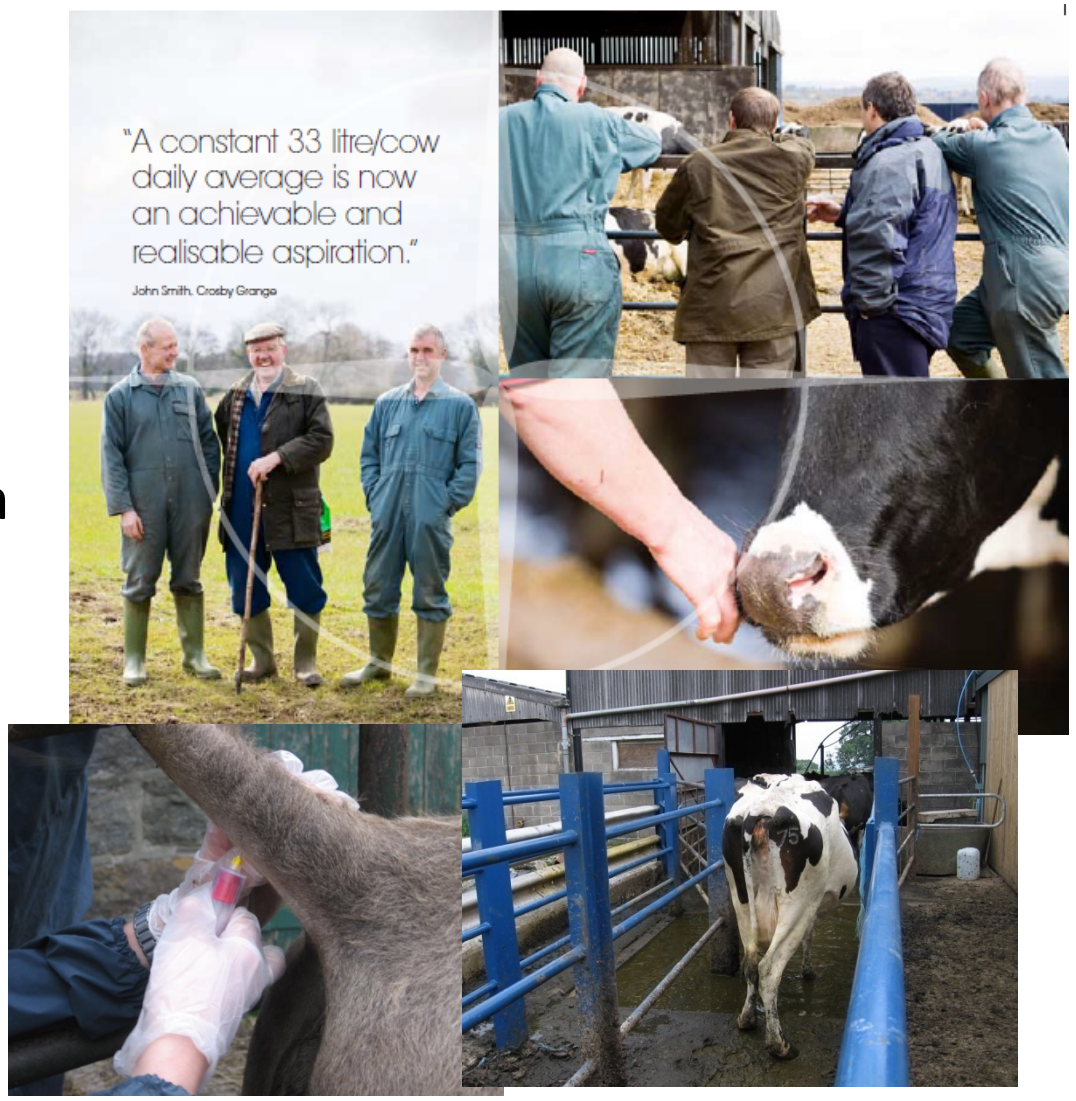
Tackle Root causes of Infertility:

- Lameness
- Social stress
- Nutrition
- Housing/Space
- Genetics-longer term
- Infectious disease

Herd health management…



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Nutrition

The Compass Programme™

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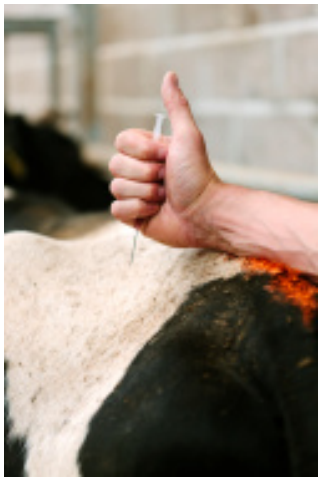
So How is 'Vetsynch' Different From Basic Ovsynching?



- Ovsynch

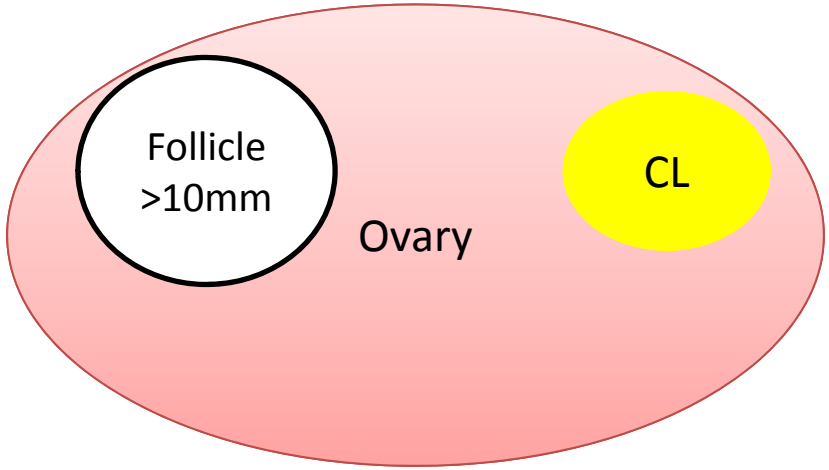
- Often based on single or no vet exam
  - Starts at random point in cow's natural cycle
  - 'Abnormal' cows can be enrolled – doesn't work
  - LOTS of hormone treatments
    - Expensive
    - Justifiable? – Hormones/POM-V
  - Compliance issues
    - Do all the jabs get done at the right time etc?

- Vetsynch
  - Vet examines cow pre-treatment, reducing wasted treatments
  - 'Abnormal' cows removed from programme and treated appropriately
  - Ovsynch started at optimal time of cow's cycle
  - Many cows don't need ovsynch = reduces costs
  - High compliance
  - Herd level problems rapidly identified and vet there to advise on possible changes
  - Weekly vet visits = good for cows/farmer efficiency

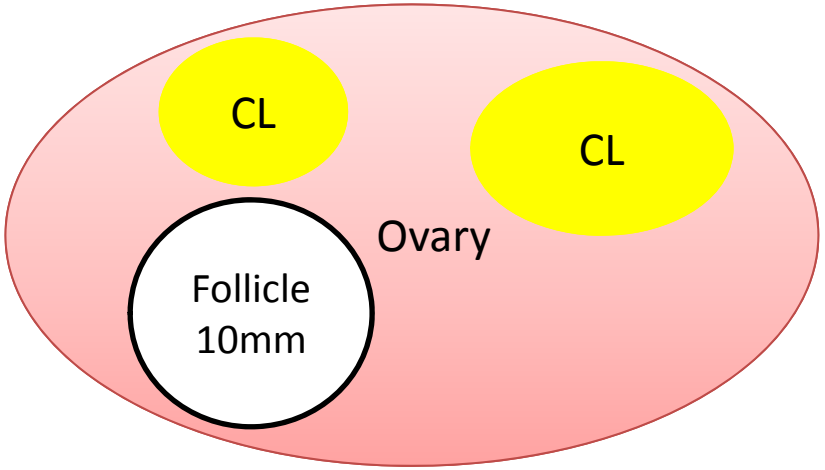
xLvets Excellence in Practice

Vetsynch-Imaging Ovaries

Ideal ovary at 1st GNRH Day 0



Ideal ovaries at PGF injection Day 7 (NB: Double CL)



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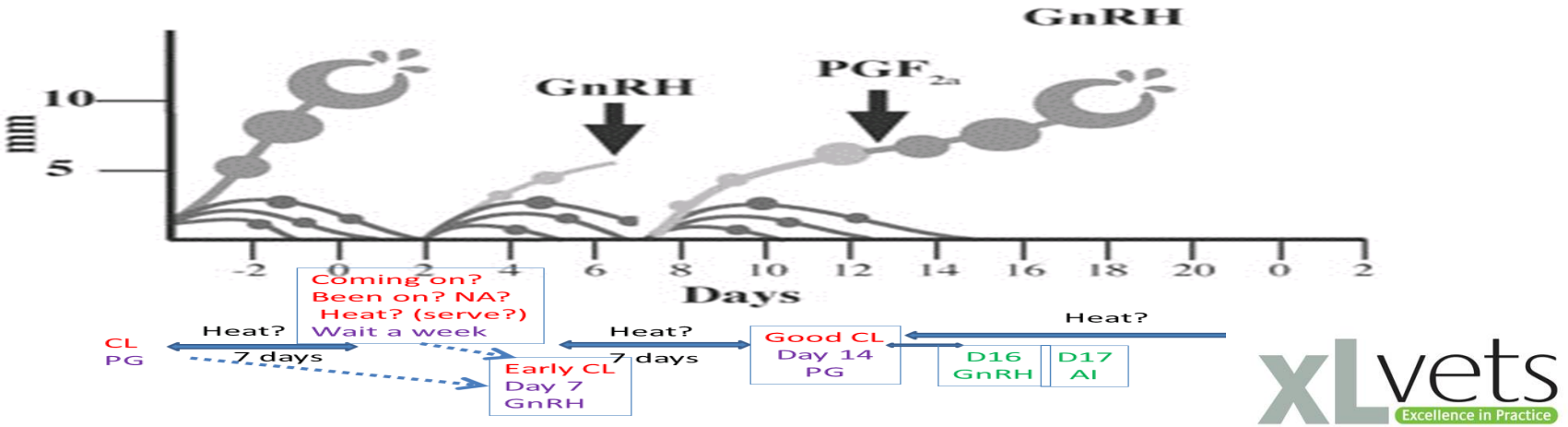
Vetsynch – possible pathways

Week of visit	Vet findings	Treatment/advice
Week 1	CL	Prostaglandin+Observe
Week 2	No structures/near bulling	Observe – possibly day 7 next week
Week 3	CL – day 7 (given history)	2.5 GnRH
Week 4	CL – day 14 (good CL..or TWO CL present)	Prostaglandin
	Day 16 – Farmer	GnRH
	Day 17 – Farmer	AI cow



'Oestrus Synchronisation used sustainably is a vital tool in dairy fertility management'

Acknowledgements:

Den Leonard-LLM, XL Vets
CEVA Animal Health