Practical Dairy Fertility

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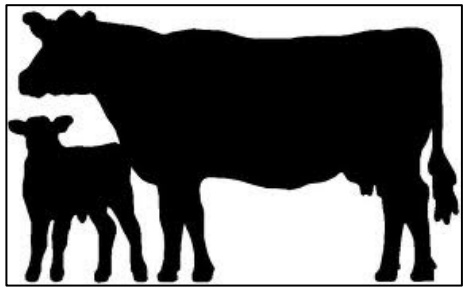

Kilmarnock

RCVS ACCREDITED PRACTICE FARM ANIMAL PRACTICE

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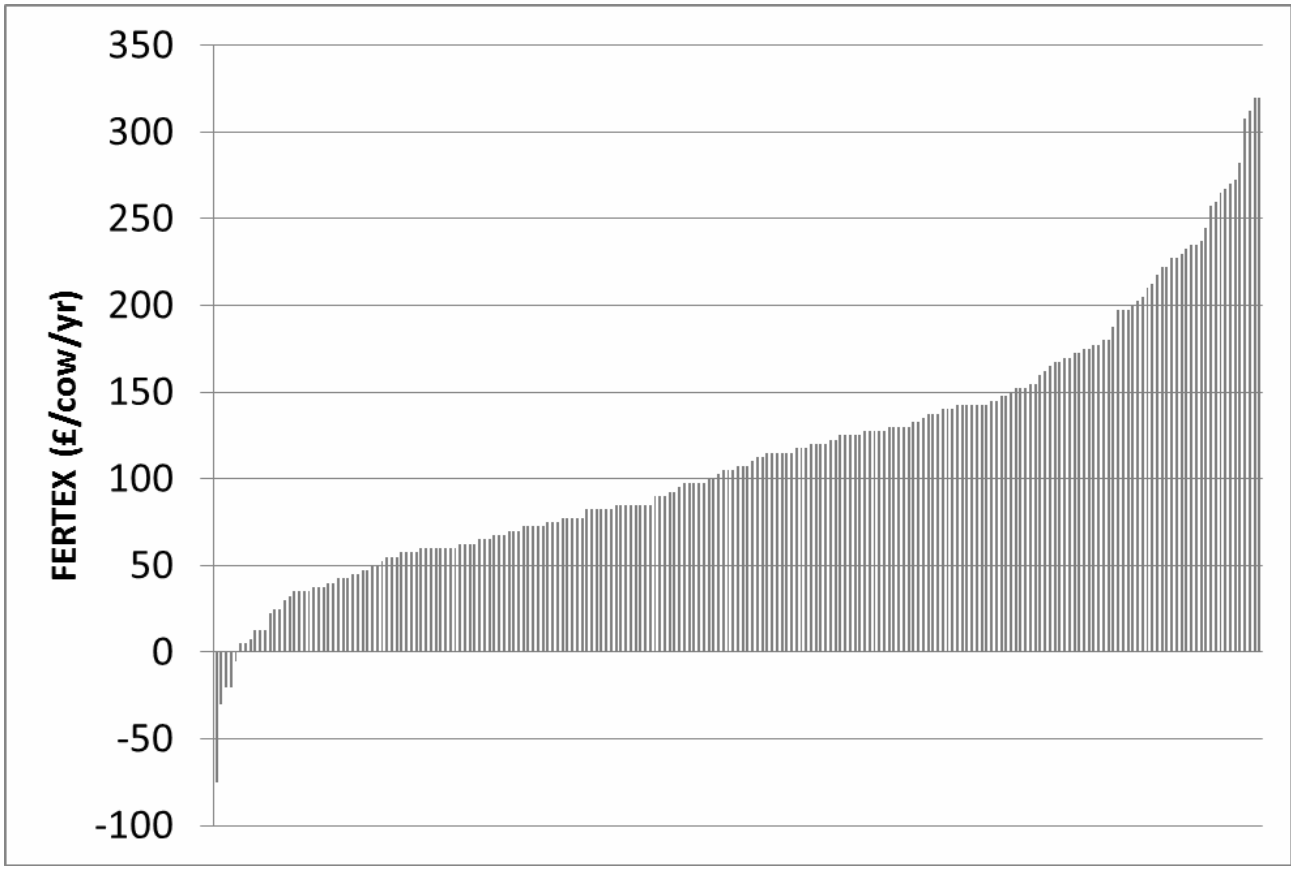
What can I do about fertility?

?

Distribution of modified FERTEX scores for 214 herds for lactations beginning in 2007 (Hudson et al 2010)



Calculated based on
Mean calving index (target <380 days, unit cost £2.50/day) &
Proportion of served cows not re-calving (target <8%, unit cost £1000)

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Road map

- **There are SIX key things to get right**
- **What can I do tomorrow?**

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There are SIX key things to get right

1. Targets
2. Nutrition
3. Oestrus detection / service
4. Intervention
5. Health
6. Environment

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Traditional measures of fertility are retrospective and often inaccurate

Parameter	Top 25% of UK HF herds achieve better than*:
Calving index	409
100 day in calf rate (%)	33
300 d failed to conceive rate (%)	10
All serves conception rate	40
Days to first service	87
1st service 24 day sub rate	37
18-24 day service intervals (%)	38
+50 day service intervals (%)	22

*Hanks J & Kossaibati M (2010)

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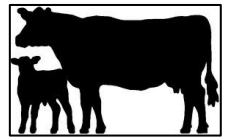

Alternative 'real time' data:

How many calvings a year do I need?

- 200
  - 50 from heifer supply
  - So 150 cows to calve
- If 40% conception rate and 5% lost after PD+ve

	# cows to inseminate	# cows to PD in calf
Every week	8	3
Every 3-weeks	23	9
Every month	33	13

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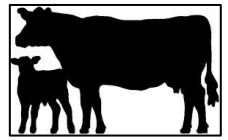
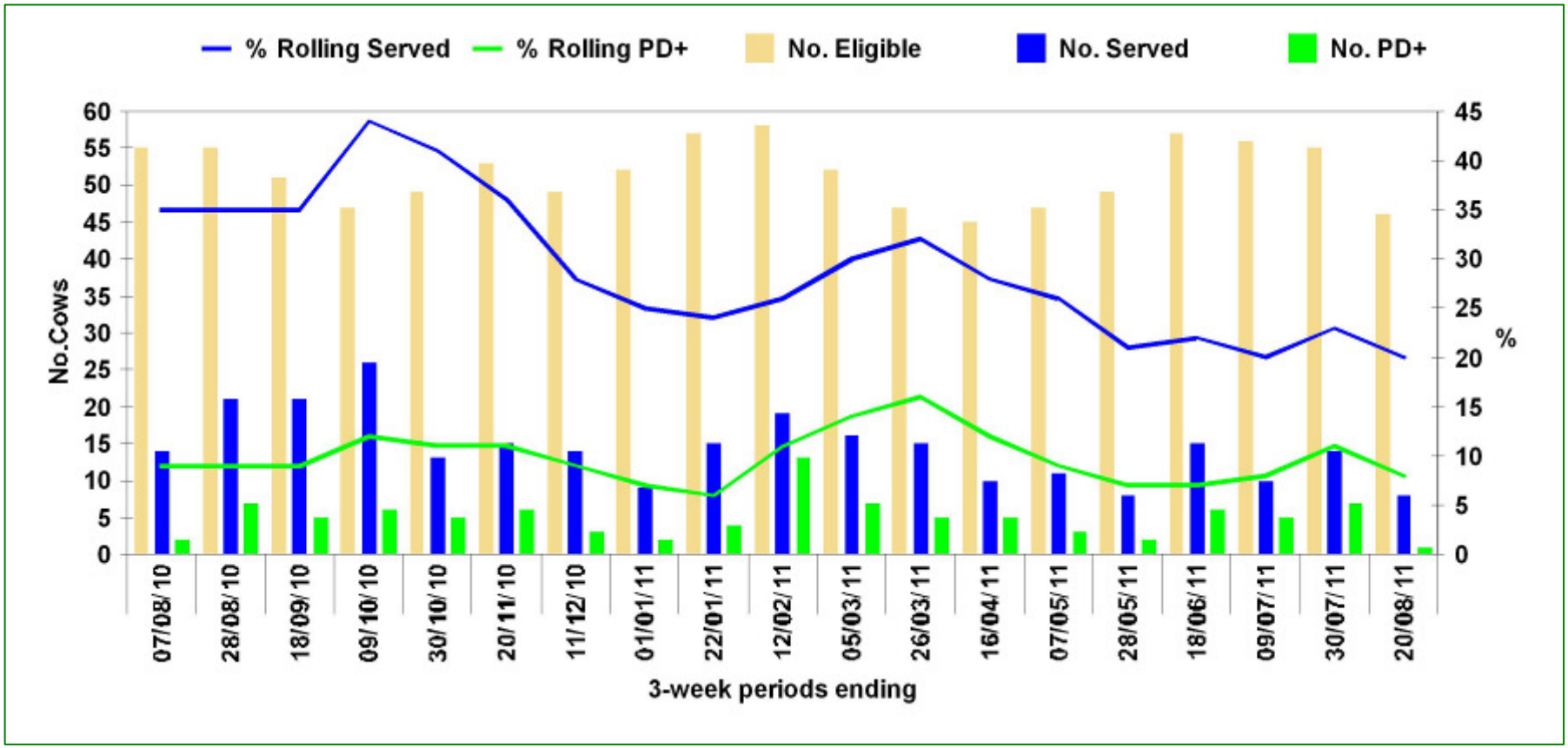


Use data to

1. Check performance

2. Identify potential for improvement



TARGETS	# cows to inseminate	# cows to PD in calf
Every 3-weeks	23	9

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There are SIX key things to get right

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Energy nutrition is key

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TWO reasons why excessive weight loss in the dry period & early lactation damages fertility

1. Eggs start development

   <u>90 days before ovulation</u>

   - Weight loss causes
     - Poor quality eggs
     - Low viability embryo
     - Weak signs of oestrus

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TWO reasons why excessive weight loss in the dry period & early lactation damages fertility

2. Weight loss reduces cows immune response
   - Retained cleansings
   - Metritis
   - 'Dirty cows' - poor fertility

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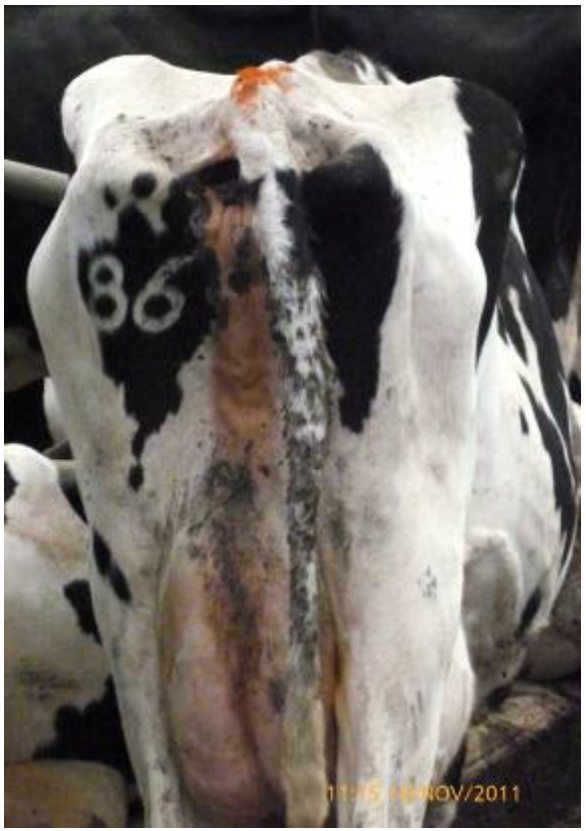
Optimise energy nutrition for maximum fertility

- Late dry period: No weight loss
- To 70 days in milk:
  - BCS loss : <1
  - preferably <0.5
- Fit (BCS 2.5-3.5) not fat cows



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There are 3 rations fed to the cow!

1. The calculated ration

2. What the farmer thinks he is feeding

3. What the cows are actually eating

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Ask the cow what she is eating!

Monitor the cows nutrition by

- Body condition scoring
  - retrospective
- Mini-metabolic profile – energy balance
  - 'real time'
- Have we the discipline?

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The Holstein COW shows oestrus poorly

Changes in the mean duration of oestrus (hours) in dairy cows and heifers - published data.

Reference	Cow	Heifer
Hammond 1927	19.3	16.1
Trimberger 1948	17.8	15.3
Dransfield et al. 1998	7.1	-
Nebel & Jones 2002	10.8	-
Båge et al. 2002	-	15.2
Lopez et al 2004	8.7	-
Yashid and Nokao 2005	6.6	-

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Use every aid to oestrus detection you can!

CI = Calving Index (Days), CR = Conception Rate

Heat Detection	CI @ 30% CR	CI @ 40% CR	CI @ 50% CR
95	382	373	364
85	387	378	369
75	392	384	376
65	398	390	383
55	404	398	392
45	405	401	397
35	415	412	408
25	430	427	425
15	441	441	440

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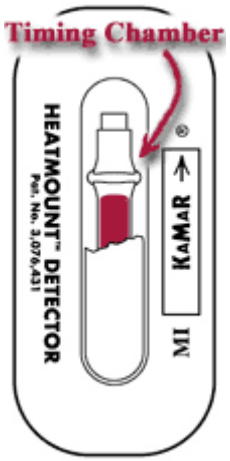
Use every aid to oestrus detection you can!

Pedometers, neck collars, scratch cards, KaMaRs & observation compared*

- Detection rates:
  - All methods together: **74%**
  - Each method separately: **60%**
    - except scratch cards (36%)



- KAMARs & pedometers: more false +ves
- **Best results: observation + ≥1 aid**

*Holman A and others (2011)

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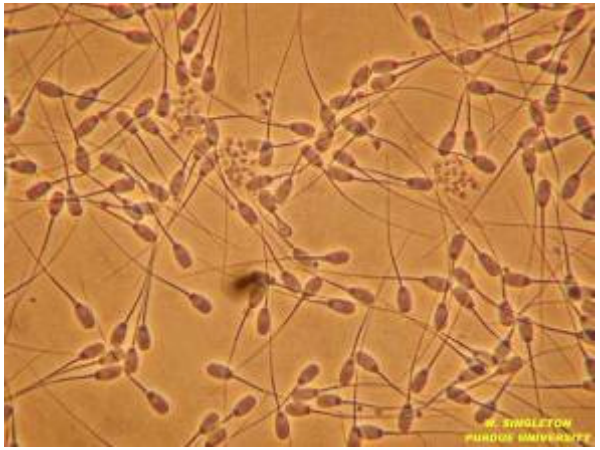
Don’t assume the ‘male’ is OK!

- DIY AI technique
- Tank maintenance
- Timing



- Bull infertility
  - Temporary
  - Permanent
  - Venereal infection (Campylobacter)

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Objectives of vet fertility visits

- **Maximise breeding efficiency**
- **Minimise losses of time & stock through failure to become pregnant**

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TWO benefits of vet fertility visits

1. **The back end of the cow**

- Cows fit for service
- Service at optimum time
- Identify non-pregnant cows rapidly

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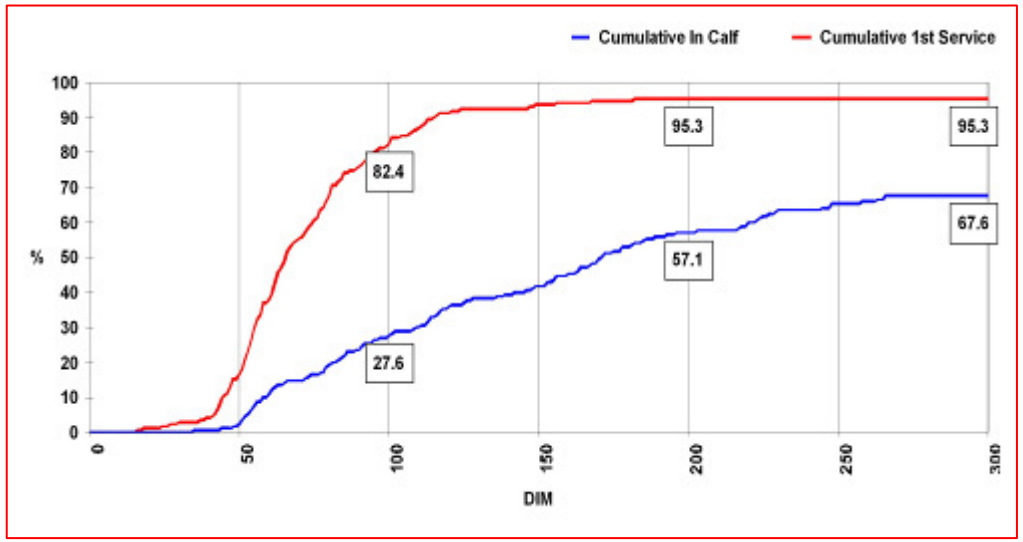
TWO benefits of vet fertility visits

2. **Herd level intervention**
   - Nutrition
   - Environment
   - Fertility management
   - Records / data
   - etc



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Cows are submitted for vet fertility visit to **minimise delays to service**

Post natal check for cows with disease problem around calving	from **21 days** post calving
Oestrus not observed	from **60 days** post calving
Not served	from **70 days** post calving
Pregnancy diagnosis	from **28 days** post service
Others	•abnormal vaginal discharge •showing oestrus at <18 d intervals

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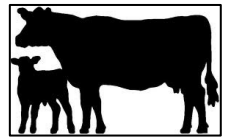

Longer visit intervals have longer delays to intervention

Oestrus not observed intervals

Weeks after calving	1	2	3	4	5	6	7	8	9	10	11	12	13
Monthly visits													
2-weekly visits													

Pregnancy diagnosis intervals

Weeks after service	1	2	3	4	5	6	7	8	9	10
Monthly visits										
2-weekly visits										

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Recommended visit frequencies to maximise cost-effectiveness of veterinary work …….

Herd size	Visit frequency
<100	Monthly
100-150	Every 3-weeks
150-200	Every 2-weeks
>200	Weekly

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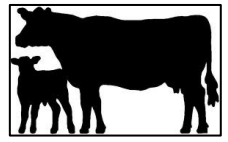
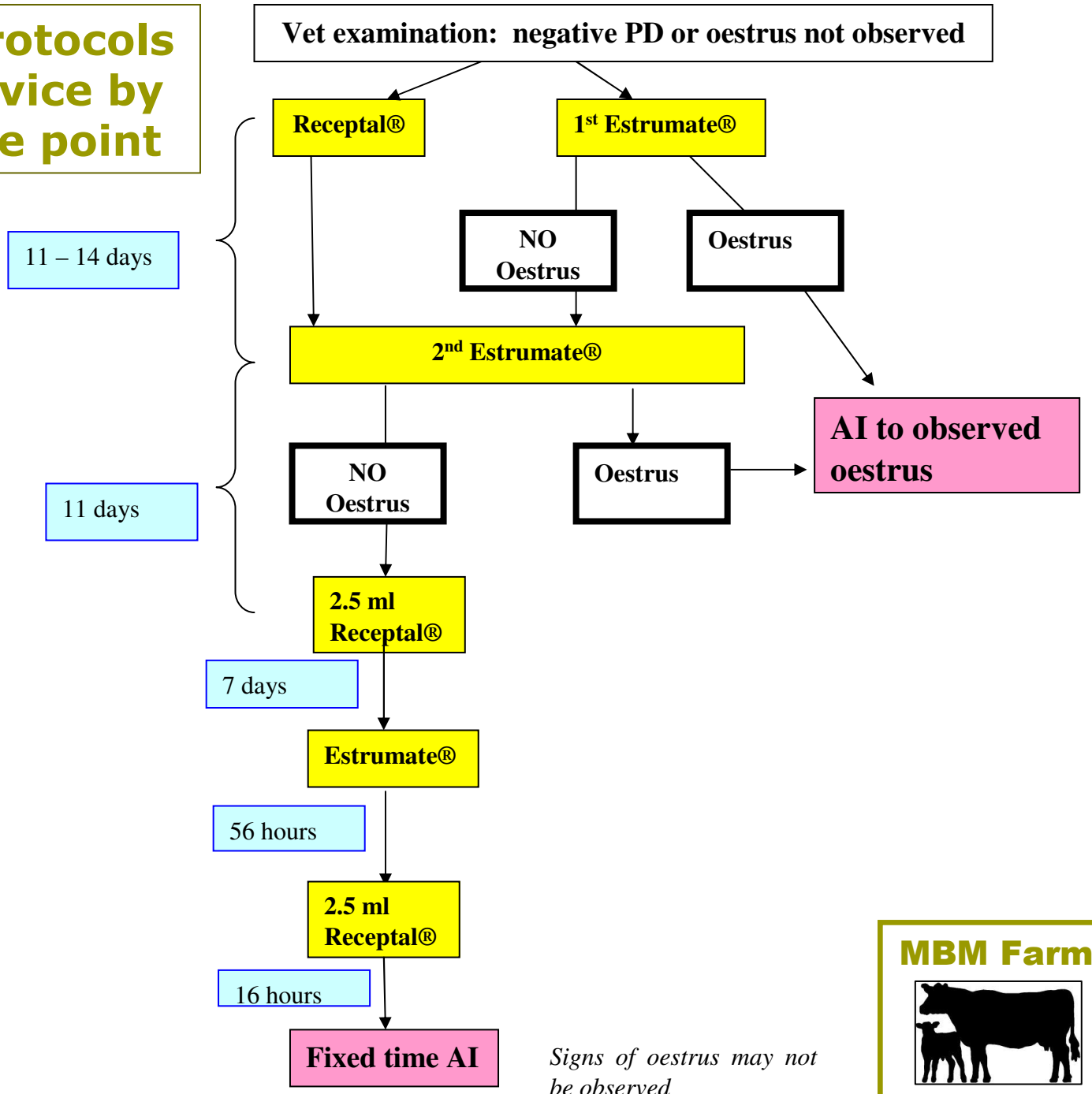


Submission protocols guarantee service by an agreed time point



Signs of oestrus may not be observed

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Fresh cow monitoring is underused & misunderstood!

- Of critical importance on certain farms
  - High incidence of
    - 'Dirty cows'
    - Herd exits in 1st 60 DIM

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Health

- Infectious disease - at minimum
  - Control BVD and leptospirosis
  - Aborted foetuses to lab
- Minimise lameness and mastitis
  - Clear evidence both reduce fertility

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Cow comfort and somewhere to clearly display oestrus are essentials

- Cubicle comfort
- Non- slip underfoot surface
- Loafing area
- Heat stress

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Road map

- There are SIX key things to get right
- **What can I do tomorrow?**

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What can I do tomorrow?

1. Targets

- # cows to AI & PD in-calf / mth
- Review and act – monthly / quarterly

2. Nutrition

- Ask the cow quarterly and act
  - BCS
  - Mini metabolic profile

3. Oestrus detection / service

- visual observation + one or more aids

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What can I do tomorrow?

4. Intervention

- Vet fertility visits at correct interval
  - stick to the plan!
- Agreed submission protocols

5. Health

- Fresh cow monitoring
- BVD and lepto control plan
  - Lab ex. aborted foetuses

6. Environment

- Cow comfort
- Somewhere to show oestrus

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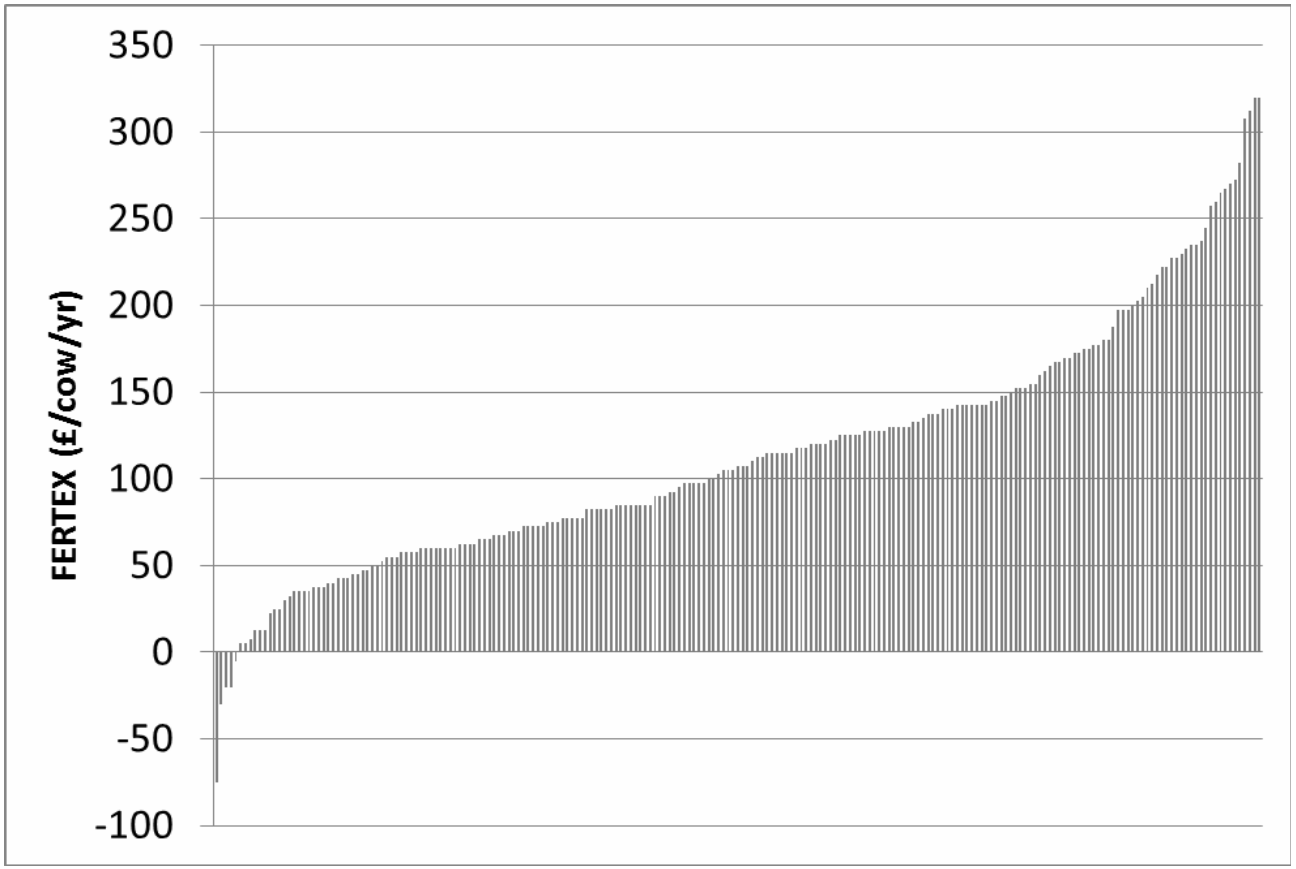

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Fertility management packages from McKenzie, Bryson and Marshall

	SERVICE	Package 1	Package 2	Package 3
4	**Routine visit** to examine cows for pregnancy (from 28 days post service), non observed oestrus etc. Agree frequency dependent on herd size.	√	√	√
4	Agree **management** / **treatment protocol** to guarantee submission of most cows for service by an agreed # of days in milk	√	√	√
2	**Routine body condition scoring** of late lactation, late dry cows and cows at peak yield		√	√
ALL	**Fertility review and action plan:** Quarterly upload of farm data for full data analysis and farm walk to identify areas for improvement and agree / monitor actions to improve fertility		√	√
2	**Mini metabolic profile** on late dry cows and cows 1-3 weeks calved quarterly			√
ALL	**Dairy 'fertility club'** meeting annually near Kilmarnock to share ideas with like minded farmers / relevant speaker	√	√	√

1. **Targets**
2. **Nutrition**
3. **Oestrus detection / service**
4. **Intervention**
5. **Health**
6. **Environment**

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