

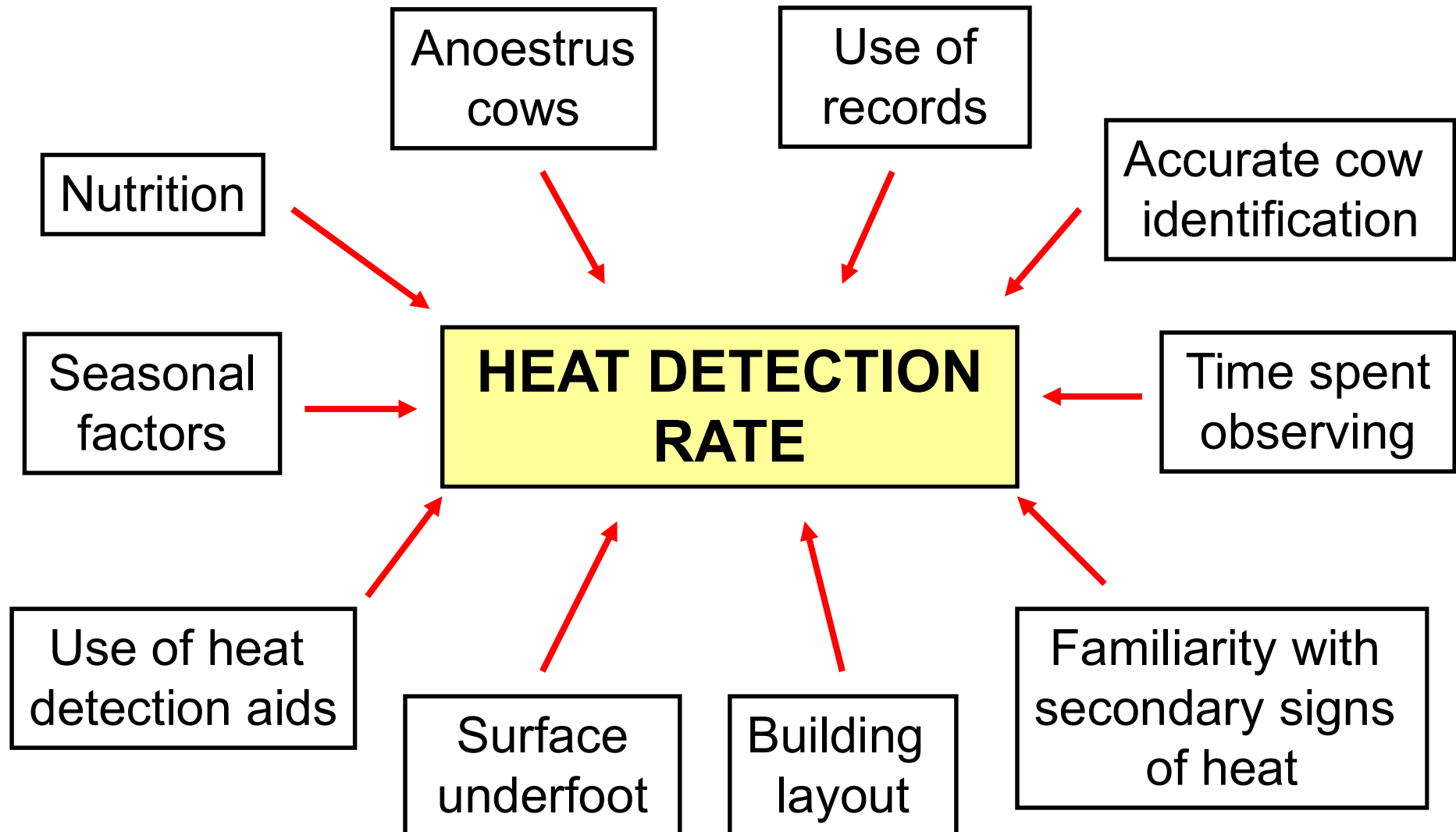
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Submission Rate Spread Calving Herds

DAIRY HERD FERTILITY CHALLENGE

EFFECTS ON HEAT DETECTION RATE



SUBMISSION RATE (1)



What is submission rate ?

- ◆ **Number of cows bred as proportion of cows eligible (*i.e intended for breeding*).**

$$\text{SR}\% = \frac{\text{No. of cows served}}{\text{No. cows eligible for service}} * 100$$

SUBMISSION RATE (2)



What cows are eligible ?

Cows that:

- ♦ **Are intended for re-breeding**
- ♦ **Have passed their voluntary waiting period**

WHAT AFFECTS SUBMISSION RATE



**Heat Detection
Rate**

**Eligible cows seen
on heat but not
served**

**SUBMISSION
RATE**

**Voluntary Waiting
Period**

**Number of
anoestrus cows**

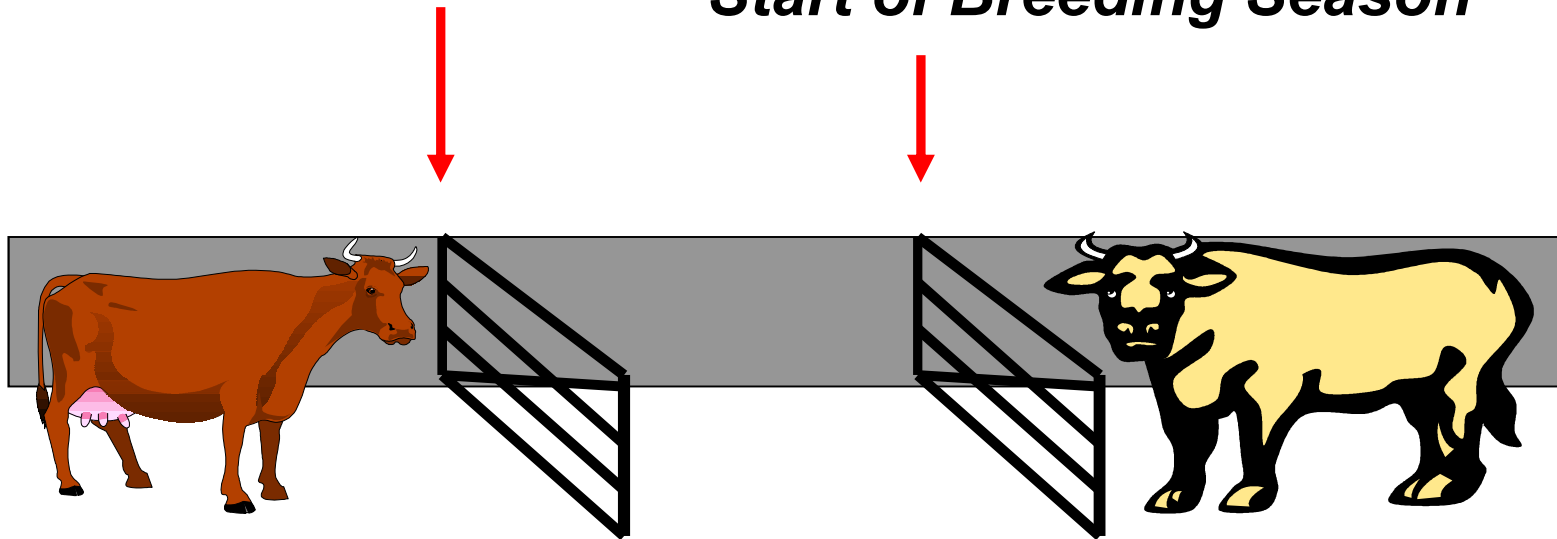
$$\text{SR}\% = \frac{\text{No. of cows served}}{\text{No. cows eligible for service}} * 100$$

VOLUNTARY WAITING PERIOD IN SPREAD CALVING HERDS



***Voluntary Waiting Period
(VWP)***

Start of Breeding Season



Interval from calving

THE BREEDING PERIOD



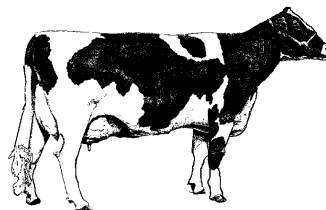
**Heat Detection
Rate**

**Conception
Rate**

**Voluntary
Waiting Period**

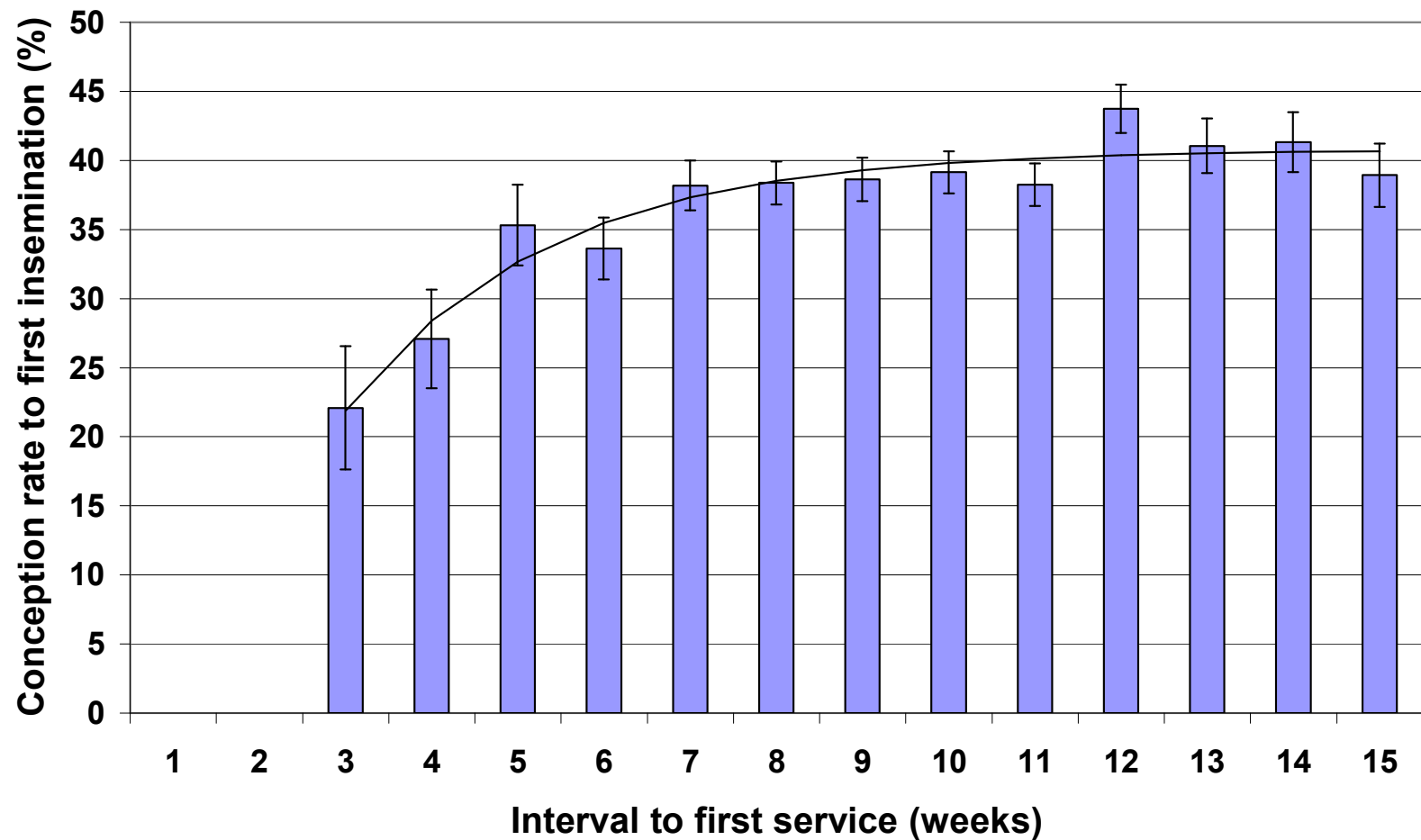
Breeding Period

In-Calf



Interval from calving

CONCEPTION RATE BY WEEK FROM CALVING



Source: AFBI Hillsborough

SUBMISSION RATE IN SPREAD CALVING HERDS



- ◆ **Breeding season lasts 6-8 months**
- ◆ **Breeding *generally* starts *around* a fixed date**
e.g. 1st December, 1st January
- ◆ **Voluntary waiting period**
e.g. 42 days, 56 days
- ◆ **Double hurdle**
Early calving cows have long interval to 1st service
Later calving cows have shorter interval to 1st service
- ◆ **Submission rate can be calculated on a rolling 3-week basis during the breeding season**

EXAMPLE SPREAD CALVING HERD



- ♦ **Calving season:** **Oct - Apr**
- ♦ **Breeding starts:** ***1st January***
- ♦ **Cows eligible:** **Cows calved 42 days or more**
- ♦ **Target SR%:** **75% in each 3-week period**

1. SUBMISSION RATE IN FIRST 3-WEEK PERIOD

COW	CALVED	PREBREEDING HEATS HEAT1	HEATS HEAT2	SERVE1	SERVE2	SERVE3	SERVE4	SERVE5
158	4-Oct	16-Dec		7-Jan	27-Jan	15-Feb	10-Mar	
150	5-Oct			1-Jan	20-Jan			
132	9-Oct			9-Jan				
97	11-Oct			14-Feb	7-Mar	27-Mar		
23	18-Oct	5-Dec	26-Dec	17-Jan	7-Feb			
79	19-Oct			5-Jan	16-Feb			
48	21-Oct	26-Dec		16-Jan				
41	23-Oct	Not for serving						
85	30-Oct			19-Jan	9-Feb			
104	31-Oct							
14	2-Nov	11-Dec		2-Jan				
169	9-Nov	Not for serving						
75	11-Nov			14-Jan				
100	16-Nov			15-Mar				
24	18-Nov			7-Feb				
135	21-Nov			7-Mar	29-Mar			
Period	Calved on/before	End of period	No. eligible for service	No. cows served	SR%			
1	20-Nov	21-Jan	13	9	69%			

4. Simple calculation:

No. cows served / No. cows eligible * 100

1. If breeding starts on 1st Jan and VWP is 42 days, cows are eligible if calved on/before 20th Nov.

2. Each 3-week period lasts 21 days – the first period of breeding season ends 21st January.

3. Count of number of cows eligible and number of cows served in first 3 weeks.

2. OVERALL SR%

- 1) Divide herd records into eligible 3-week periods from start of breeding
- 2) Count and record no. cows eligible & no. cows served in each 3-week period
- 3) Submission rate can be calculated for each 3-week period
- 4) Overall submission rate is sum of cows served over sum of cows eligible

COW	CALVED	PREBREEDING HEATS		SERVE1	SERVE2	SERVE3	SERVE4	SERVE5
		HEAT1	HEAT2					
158	4-Oct	16-Dec		7-Jan	27-Jan	15-Feb	10-Mar	
150	5-Oct			1-Jan	20-Jan			
132	9-Oct			9-Jan				
97	11-Oct			14-Feb	7-Mar	27-Mar		
23	18-Oct	5-Dec	26-Dec	17-Jan	7-Feb			
79	19-Oct			5-Jan	16-Feb			
48	21-Oct	26-Dec		16-Jan				
41	23-Oct	Not for serving						
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75	11-Nov			14-Jan				
100	16-Nov			15-Mar				
24	18-Nov			7-Feb				
135	21-Nov			7-Mar	29-Mar			
105	27-Nov			4-Feb	18-Mar	13-Apr		
68	30-Nov			4-Feb	4-Mar			
77	8-Dec			4-May				
114	10-Dec			24-Feb				
25	12-Dec			16-Feb	14-Mar			
143	15-Dec	17-Jan		7-Feb	28-Feb			
92	26-Dec			28-Feb				
21	30-Dec	Not for serving						
20	4-Jan	9-Feb		3-Mar				
127	4-Jan			20-Apr	10-Jun	2-Jul		
88	11-Jan			1-Mar	22-Mar			
45	18-Jan			4-Apr	25-Apr			
123	18-Jan			27-Mar	18-Apr			
102	25-Jan			22-Apr	13-May			
83	28-Jan			6-May				
82	4-Feb			7-Apr				
50	5-Feb			2-Apr	25-Apr			
93	6-Feb	Died						
132	10-Feb			19-Apr				
154	15-Feb			5-Apr				
38	17-Feb	20-Mar		9-Apr	30-Apr			
136	24-Feb			8-May	29-May	15-Jul	5-Aug	25-Aug
80	5-Mar			6-May	9-Aug	28-Aug	18-Sep	
5	10-Mar			4-Jun	31-Dec			
134	10-Mar			29-Apr	21-May	23-Jul		
120	14-Mar			3-Jun				
70	18-Mar			5-May				
60	22-Mar			23-Jun	24-Jul	2-Sep	26-Nov	
122	28-Mar			16-May	7-Jun			
53	7-Apr			30-May	19-Jun	10-Jul		
49	8-Apr			30-May				
125	12-Apr	Not for serving						
167	12-Apr			21-Jun				
63	19-Apr	Not for serving						
Period	Calved on/before	End of period	No. eligible for service	No. cows served	SR%			
1	20-Nov	21-Jan	13	9	69%			
2	11-Dec	11-Feb	5	2	40%			
3	01-Jan	04-Mar	3	3	100%			
4	22-Jan	25-Mar	5	2	40%			
5	12-Feb	15-Apr	6	3	50%			
6	05-Mar	06-May	3	2	67%			
7	26-Mar	27-May	5	2	40%			
8	16-Apr	17-Jun	4	3	75%			
Total			44	26	59%			

3. SUBMISSION RATE IN SUCCESSIVE 3-WEEK PERIODS



$$\text{3 - week SR\%} = \frac{\text{No. eligible cows served in 3 - week period}}{\text{Total no. eligible cows at start of period}} * 100$$

Breeding starts: 1st Jan Voluntary Waiting Period = 42 days

Period	Calved on/before	End of breeding period	Total no. cows calved	No. cows for rebreeding	No. cows served	SR%
1	20 Nov	21 Jan	15	13	9	69
2	11 Dec	11 Feb	5	5	2	40
3	1 Jan	4 Mar	4	3	3	100
4	22 Jan	25 Mar	5	5	2	40
5	12 Feb	15 Apr	7	6	3	50
6	5 Mar	6 May	3	3	2	67
7	26 Mar	27 May	5	5	2	40
8	16 Apr	17 Jun	5	4	3	75
9	7 May	8 Jul	1	0	-	-
			50	44	26	59%

TARGET SUBMISSION RATES



$$\text{SR\%} = \text{No. cows served} / \text{No. cows eligible} * 100$$

Target SR%

**Seasonal calving
herds**



**85% in first 3 weeks of
breeding**

**Spread calving
herds**



**75% in each 3-week period
from start of breeding**

**Year-round calving
herds**



**75% in each 3-week
breeding period**



FERTILITY BENCHMARKING *Online*



INTERIM REPORT

Farmer: GreenMount Farmer

Breeding Season: 2003/2004 (Finished)

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Heat Detection Efficiency

Conception Rates

Individual Herd Report

This report gives a comparison of first service submission rate between your herd and all the other Autumn Calving herds in Northern Ireland regardless of their breeding season status.

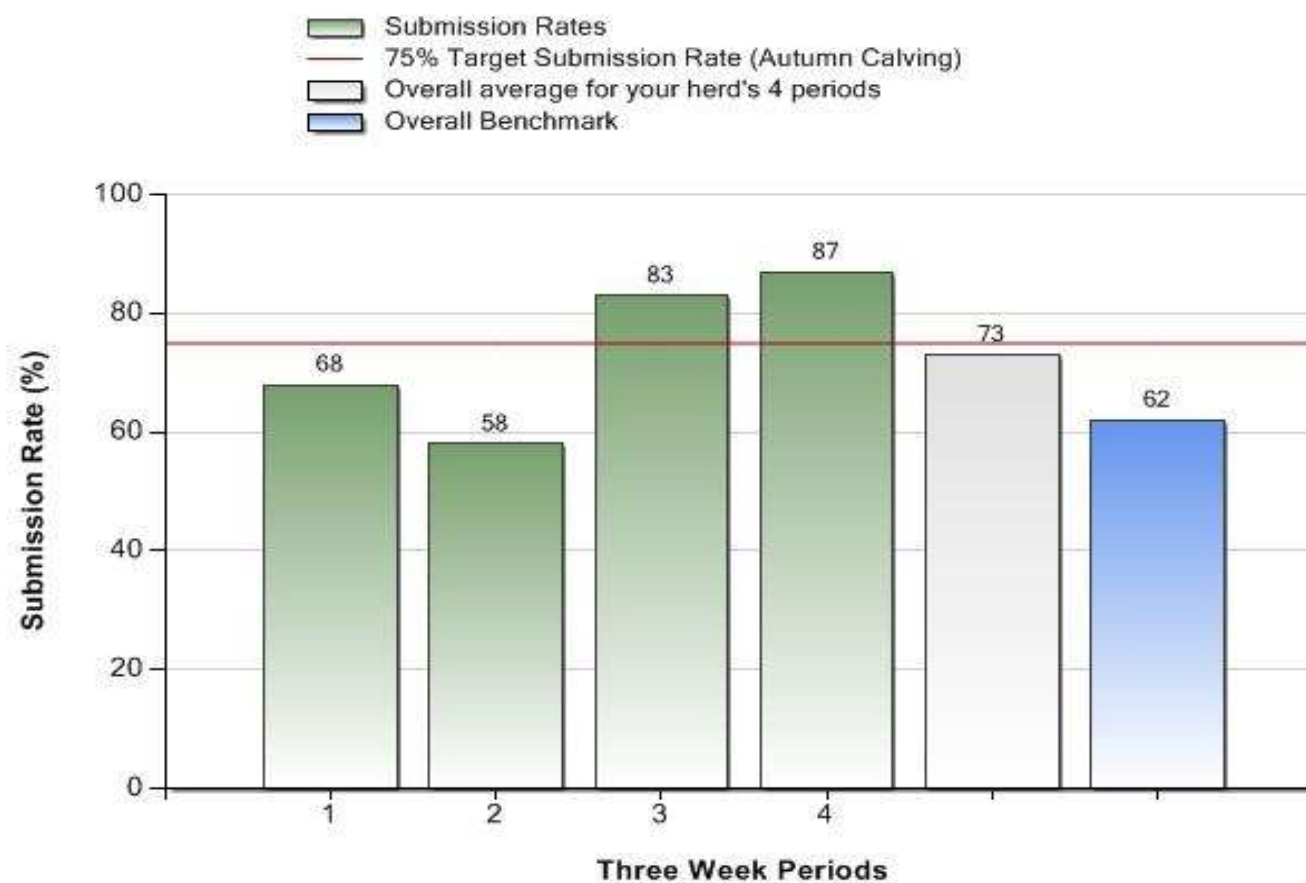
First service submission rate.

	Autumn Calving	Spread Calving	Overall
Your Herd (%)	73	-	-
Benchmark Average (%)	62	51	55
Top 25% Benchmark (%)	75	76	78

First service submission rate is a measure of heat detection efficiency indicating how quickly cows due for rebreeding are bred once they have passed their voluntary waiting period. The first service submission rate displayed for your herd in the table above is the average over the entire breeding season while the submission rate for consecutive 3-week periods throughout your herd's breeding season is displayed in the graph below. Please note the graph only shows a maximum of 14 periods.



FERTILITY BENCHMARKING *Online*



This shows the first service submission rate for your herd based on consecutive three week periods, with weeks ending; Week 1: 11/12/2003 Week 2: 01/01/2004 etc

SUMMARY SUBMISSION RATES



- ◆ **Proportion of eligible cows that are served.**
- ◆ **Major factor contributing to overall fertility performance which you can control.**
- ◆ **Can be monitored throughout breeding season.**
- ◆ **Should be assessed in successive 3-week periods.**
- ◆ **Early action can be taken.**