



## Utilising Data From Ultrasound Scanning for pregnancy *D.W.Lawrence, Lori Linney*

### Abstract

7500 hinds on 46 farms were scanned using a rectal probe in the lower South Island by the authors in 1997. Average conception rate in mixed age hinds was 93.5% and first calvers 76.7%. In either age group there was no difference detected in conception rate (CR) between Red deer or Wapiti. Multisire mating with spikers achieved 85.6% CR in first calvers.

**Keywords:** Scanning , Southland, Conception Rate, Deer, Reproduction.

### Introduction

We have been scanning deer for pregnancy in our practice for approximately 8 years. We use an "Alohka 210" with 5MHz linear array rectal probe. Almost all deer are scanned in a physical restraining device.

The numbers of hinds scanned has escalated over the last few years such that collating the information at the time of scanning could enable us to establish normal pregnancy rates in our area. Is the much touted 98% fawning a reality ?

Reasons for scanning were varied:

- Identify problem stags
- Investigate poor calving performance
- Identify late calvers
- Identify dry hinds
- Increase flexibility of management / capitalise on schedule prices
- Sale animals requiring certified pregnancy
- Confirmation of AI/EI programmes
- Specific hinds with poor reproductive history
- Specific mating mobs which concerned a farmer
- Sire verification (early scanning)

### Results

In 1997 we scanned 11,520 hinds on 60 farms spread over the greater Southland area and Central Otago.

- 1280 hinds were scanned on 19 properties for sale purposes.
- 1566 hinds were scanned on 24 properties to confirm results of AI/ET
- 1113 hinds were scanned on 13 properties for miscellaneous reasons.

7561 hinds were scanned on 46 properties where the whole herd and/or first calvers were involved. This latter group provided the data base to calculate pregnancy rate (conception rate)

**Table I** Pregnancy rates at scanning by Central Southland Vet Services (CSVS) compared with data from the lower North Island by Audigé (1995) (LA)

	CSVS	LA <sub>(1)</sub>
Average for MA hinds	93.5%	96.8%
Average for 1 <sup>st</sup> calvers	76.7%	84.7%
Overall	89.5	

**Table II** Pregnancy rates of red and red X wapiti hybrid hinds

	MA HINDS			1 <sup>st</sup> CALVERS		
	No. Farms	Average	Range	No. Farms	Average	Range
RED	14	93%	89%-99%	14	77%	33%-98%
WAPITI/HYBRID	6	94%	80%-97%	9	75%	35%-100%

**Table III** Pregnancy rates of mobs with different mating systems

MA HINDS ON 20 FARMS		
SYSTEM	FARMS	CR
Single sire with back up	11	94.4%
Single sire and no backup	2	96.2%
Multisire mating	7	92.8%
1 <sup>st</sup> CALVERS ON 26 FARMS		
Single sire with back up	14	77.5%
Multisire older stags	2	56.3%
Multisire spikers	10	85.6%

## Discussion

Conception rates in our survey were less than those of L. Audigé for both MA hinds and first calvers (Table I).

When our figures were broken down by hind species there was no real difference evident between Wapiti and Red Deer in either age group. This would appear to contradict the often quoted – “Wapiti are harder to get in calf”.

The range of mating systems were almost as varied as farmers in our survey. A comparison of similar management systems is presented in Table III

The best result in MA hinds of single sire and no back up is not to be recommended because of the risk. Audigé showed this to increase the risk of lower conception rates. Relatively small hind numbers on 2 farms achieved this and likely more by good luck than good management. On the other 18 farms I don't believe there is a significant difference in CR between single sire versus multisire mating (Please note that none of our data has been subject to statistical analysis.)

Mob sizes varied from 30 to 175 but there was no pattern in CR relating to mob size.

The poor result with multisire mating of first calvers by older stags should be viewed with caution as only 2 farms used this system. In this study CR did not relate to mob size (a range of 18 to 75 existed). Other research suggests a maximum of 40 first calvers per mob.<sup>(1)</sup>

As shown in other research good results are achieved with first calvers using spikers in a multisire set up.<sup>(1)</sup> The ratio on the 10 farms in this study varied from 1:1 to 1:10 (A ratio of 1:8 has been recommended)

An interesting observation on two farms was a poor conception rate in first calvers which were bought in immediately prior to the “roar” Both properties had home bred first calvers which had 50% higher conception than their “bought in” counterparts.

We charge scanning on a per hour basis rather than per head because we don't think a well organised farmer with good facilities should subsidise the not so good client. Based on \$120 incl. hourly charge our overall average worked out to \$2.29 per hind, compared with the \$3.27 published in the December 1997 NZVA survey

To give our clients an approximate guide on cost we work on number splits.

Number of hinds	Cost per hind
1 - 20	\$3.93
21 - 100	\$2.95
100 +	\$2.06

Time of scanning is important. With a rectal probe we are comfortable from 30 days of pregnancy onwards. Scanning early in pregnancy is encouraged as we believe it can provide more information for the farmer. Last year we scanned hinds to about 150 days gestation. In the hands of experienced operators we don't consider accuracy is compromised at this late stage of pregnancy with a rectal probe.<sup>(2)</sup>

Early scanning allows more accuracy with aging (eg. assist with sire verification). In this circumstance however, always record the date the stag was removed and be mindful that due to

variable gestation length within breeds and between breeds your calving pattern may vary considerably from mating pattern the hands of the profession as to whether it stays that way

Scanning supplies important information which can contribute to good reproductive performance and profitability on a deer farm. We have found scanning an essential tool in assisting our deer farmers.

## **References**

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Bingham, C (1997) Abdominal ultrasonography in Red Deer, *Proceedings of a Deer Course for Veterinarians No 14*