



# Richmond Wrightson Deer Performance Project Interim Reproduction Results

*Ian Walker, Roy Fraser, Andrew Mason, Peter Wilson*

## 1. Introduction

Pregnancy scanning is an important and critical technology used in the Richmond Wrightson Deer Performance Project. This paper gives some interim results from the 1998 breeding season.

## 2. Collation of Scanning Information

In this project information was collected not only for identification of pregnancy but also for ageing of the foetus to create a conception profile for each herd

Scanning of hinds began on the 20<sup>th</sup> May 1998 and pregnancies were classified into four categories.

- |    |  |        |
|----|--|--------|
| 1. | Hinds conceiving before 1 <sup>st</sup> April.                           | Early  |
| 2. | Hinds conceiving between 1 <sup>st</sup> April & 20 <sup>th</sup> April. | Medium |
| 3. | Hinds conceiving after 20 <sup>th</sup> April.                           | Late   |
| 4. | Hinds not diagnosed pregnant.  |        |

Any hinds in which a definite diagnosis could not be made or the pregnancy was too late to be identified at the time of scanning, were rescanned about 2-3 weeks later.

**Table 1. Details of numbers of hinds scanned**

No of MA hinds in Farmer Group	2845
No of MA hinds scanned	2180*
No of R2 hinds scanned	616

\* There were 3 farmers in the group who did not want to scan all their mixed age hinds

## 3. Results of Scanning

Results are presented in Table 2

**Table 2. Numbers of hinds scanned and percent pregnant in each conception date category.**

Farm	MA Hinds					R2 Hinds				
	Total Scanned	Early	Med	Late	Non Preg	Total Scanned	Early	Med	Late	Non Preg
1	214	26	70	2	2	25	0	28	44	28
2	88	2	88	6	3	27	0	37	48	15
3	148	0	64	16	22	80	1	69	16	15
4	146	30	50	15	5	65 **	0	15	23	62
5	261	1	87	7	5	17	0	17	83	0
6	150	41	50	4	5	34	3	32	26	44
7	56	4	66	16	14	72	0	49	42	9
8	133	19	62	17	2	62	0	45	42	13
9	384	9	67	9	14	117	0	36	50	14
10	80	5	67	26	2	62	0	37	60	3
11	127	0	85	8	7	55	0	29	62	9
12 *	393	-	-	-	4	-	-	-	-	-
<b>Overall</b>	<b>2180</b>	<b>13 21</b>	<b>69 17</b>	<b>9 85</b>	<b>7 75</b>	<b>616</b>	<b>0 32</b>	<b>38 8</b>	<b>42 05</b>	<b>18 83</b>

\* Farm 12 had only pregnant or non pregnant diagnosis in portion of MA hinds

\*\* Farm 4 mated all R2 hinds even though only a portion were identified for potential replacements. This was for management reasons during drought where all stock were being supplemented on grain or silage

The overall conception rate in mixed age hinds was 92.25% (range 78-98%) and in R2 hinds is 81.17% (range 38-100%). The conception rate for R2 hinds on average becomes 86.2% if allowance is made for farm 4. It should be noted that the Hawkes Bay district experienced a severe drought in the summer of 1997-98. In that light, these pregnancy rates were very satisfactory. They compare with averages of 96.8 and 84.8 reported earlier by Wilson and Audigé (1998).

#### 4. Comparison of Scanning Results with Historical Data

The data in Table 3 are comparative figures taken from scanning data recorded by Vet Services (HB) Limited over the last four years from all deer clients whose deer were scanned.

It is worth noting that in 1998 Hawkes Bay was experiencing an exceptionally bad drought. Many hinds were in very poor condition at mating time, and this is reflected in the percentage of hinds not diagnosed pregnant during that breeding season. It is also encouraging to see the scanning results of the 11 farmers in the project who are also utilising intensive feed budgeting programs, and the impact that this has had on the non pregnancy rate in those herds. These percentages were 10 and 20 percentage points better for MA and R2yo, respectively, than those of farms not involved in the project, demonstrating the effectiveness of advice in upskilling farmers.

**Table 3. Pregnancy rates of deer scanned by Vet Services (HB) 1995-98, compared with those in the performance project in 1998.**

Year	MA HINDS		R2 HINDS	
	No. Scanned	% hinds not diagnosed preg	No. Scanned	% hinds not diagnosed preg
1995	3562	10.7	1430	26.0
1996	2711	6.86	1693	19.49
1997	2618	5.04	2191	16.7
1998	5954	17.65	2327	38.8
1998 Richmond Wrightson Group	2180	7.75	616	18.8

## 5. Influence of Weaning Date on Conception Profile

All herds within the project weaned fawns at the beginning of March. However, the opportunity arose from outside the project to look at two herds which weaned post rut.

The results are summarised in Table 4.

**Table 4. Comparative Conception Profile between pre and post rut weaning**

	MIXED AGE HINDS	
	All herds in Group	Late weaning herds
% mated before 1/04/98	13.21	0.0
% mated between 1/04/98 & 20/04/98	69.17	42.03
% mated after 20/04/98	9.85	44.19
% Not diagnosed pregnant	7.78	13.79

In a hind mating year like 1998 in Hawkes Bay, ie. a very severe drought, the effect of late weaning on the conception profile is very significant. Calculations suggest the mean fawning date is 12-14 days later in the post-rut weaning mobs. The birth date of the fawn has a strong influence on the weaning weight. However, these data must be interpreted carefully, because the pregnancy rate in the late weaned herds was higher than the district average (see Table 3), and there was no comparable data for conception profile in herds in Table 3 which were not involved in the Richmond Wrightson project.

## 6. Mating Management Influence on Conception Profile of R2 hinds

A list of management recommendations were made to group participants re mating procedure of yearling hinds, as follows:

- Join yearling stags with yearling hinds prior to mating – January onwards.
- Select hinds prior to mating based on body weight and size. (Should be at least 85% of mature hind weight at 12 months of age).

- Yearling hinds that are overfat (CS greater than 4.0) or too lean (less than 2.5) will have a reduced conception rate.
- Avoid combining yearling hinds with large mobs of older hinds for mating. However a couple of non-dominant quiet adult hinds can be included.
- Try and select paddocks away from human disturbance for yearling mating ie. vehicles, people other stock traffic.
- It is preferential to use an experienced sire for mating yearlings, particularly in single sire mating.
- If an inexperienced stag is used, a back up stag should also be used.
- A group of yearling stags can be successfully used to mate yearling hinds at a ratio of about 1:10.
- To get yearling hinds to conceive as early as possible, place sire with hinds from late February onwards. Benefit of social contact.
- Stag withdrawal from hinds should be no later than 10-15 May, to minimise late fawns.
- Maintain good nutrition levels during mating to ensure continued good growth rates. The objective is to have these hinds on a plane of nutrition sufficient to allow weight gain during the autumn

As an example, in one farm with 80 Red R2 hinds to be mated adopted the following procedures:

- All R2 hinds to be mated were a minimum weight of 90kg at 1<sup>st</sup> February 1998.
- All hinds were treated with an effective anthelmintic and Vitamin B12.
- The R2 hinds were mated with 25 top spikers selected on body weight and spike circumference, the joining date being 1<sup>st</sup> February 1998.
- A high plane of nutrition was maintained until the end of April.

Conception profile comparing this farm with the rest of the group is in Table 6

**Table 6. Conception Profile of R2 hinds**

	R2 HINDS	
	All herds in Group	80 x R2 hinds
% of herd mated before 1/04/99	0 32	1 25
% of herd mated between 1/04/99 and 20/04/99	38 80	67 5
% of herd mated after 20/04/99	42 05	16 25
% not diagnosed in fawn	18 83	15 00

This data clearly indicates the earlier mating profile of those R2 hinds. Overall pregnancy rate was not greatly different, possibly because of early stag withdrawal from the test herd. In fact 5 of the hinds in that group fawned before the 3<sup>rd</sup> of November.

This trend was also reflected in the mid lactation liveweights of these fawns. The average liveweight of fawns from R2 hinds on 15<sup>th</sup> January 1999 for all farms was 26.3kg, and from this mob of R2 hinds the fawns averaged 30.4kg and were weighed 8 days earlier. Thus the influence of birthdate on fawn weights during lactation made these fawns effectively 8.0kg heavier on 15<sup>th</sup> January 1999. (Average fawn growth rate from birth until 15<sup>th</sup> January 1999 was 500gm/day).

## **7. Conclusion**

Even though the information presented here is reasonably superficial, some clear on farm management messages are beginning to emerge. Information will become more complete as weaning details are added to the database.

## **8. Acknowledgements**

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## **References**

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