

The following article is a useful summary of performance in the Fallow deer herd at Invermay. For farmers of Fallow it provides something of a benchmark for their own recording systems.

# THE PERFORMANCE OF A SMALL FALLOW HERD

by Geoff Moore, Invermay Research Centre

## Fawning

The earliest recorded birth date for a Fallow fawn was at Invermay on December 8, and the latest was January 26. The does originated on Bob Swann's property near Fairlie and while on the Swann property, Mr Swann had recorded first-born fawns on December 9 1974 and December 5 1975. Births of fawns in late November on farms in the Waikato have been reported by Ruakura researcher, Geoff Asher.

Birth weights were recorded in 1982 (Table 1). All birth weights were recorded between 24 and 48 hours after birth and are for fawns from does aged 3 years or older. Mean birth weights were 4.5 kg (male) and 3.9 kg (female). These birth weights are heavier than the 3.9 kg (male) and 3.5 kg (female) birth weights reported for northern North Island farms by Geoff Asher.

The reproductive performance of the does has increased over the years. The first fawning in 1976 could have been expected to be low as half of the does (from Mt Creighton Station) had been wild captured by helicopter. Three fawns were found dead, one of which had become caught in a fence by a hind leg.

In the next two years, 1977 and 1978, fawning was satisfactory at 84 per cent, but fawn losses were not.

As two of the fawn deaths in 1978 were attributed to natural hazards in the fawning paddock, in 1979 the does were fawned in another paddock with fewer such hazards.

From 1976 to 1978, four out of 12 fawn deaths were directly attributable to hind legs becoming caught up in the fence netting which was the standard 13 wire 150 mm stay deer netting.

To overcome this problem, runner wires were placed round the boundary of the fawning paddock and these halved the third and fourth gaps above ground in the standard netting. Subsequently, only one fawn

was lost, caught in the fence, during the following three fawn seasons.

In 1979 the fawning percentage was 100, and at three months from fawning, 95 per cent. In 1980 and

1981 fawning percentages were again good with 87 per cent and 86 per cent recorded from counts in March. This compares with surveys by Geoff Asher and Mike Adam of commercial Fallow deer farms in the northern North Island during 1980-1983, which showed a fawning rate of 83 per cent to 76 per cent with a fawn mortality rate of 16 to 13 per cent.

In 1982 the breeding herd of adult does was transferred to the flat deer farm. The fawning rate was 94 per cent with no loss of fawns. Three individual does were observed to mate on April 25, April 26 and May

Table 1: Birth weights of Fallow deer fawns.

	Birth weight (kg)		
	Mean	Range	n
Male	4.5	3.9-5.0	8
Female	3.9	3.1-4.6	11

Table 2: Reproductive performance of adult Fallow deer.

Breeding season	Number of does	Fawns born	% at birth	Fawns weaned	March fawn %
1976	24	19	79	16	87
1977	20	14	70	9	45
1978	19	16	84	12	63
1979	21	21	100	20	95
1980	23	7	7	20	87
1981	22	20	91	19	86
1982	17	16	94	16	94

Table 3: Mean date of casting old antler stumps by Fallow bucks.

Cohort born	(n)	2 yr	3 yr	Age rising 4 yr	5 yr	6+ yr
1976	(5)	9 Nov.	8 Nov.	—	21 Oct.	
1977	(1)	3 Nov.	—	18 Oct.		
1978	(2)	—	20 Oct.			
1979	(3)	7 Nov.	7 Nov.			
1980	(9)	11 Nov.				
unknown	(1)	—				24-27 Oct.
Range of casting						
Earliest		2 Nov.	16 Oct.	18 Oct.	15 Oct.	24 Oct.
Latest		20 Nov.	27 Nov.	—	27 Oct.	27 Oct.

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▷ 4 and to fawn on December 14, December 14 and December 26 with gestation periods of 233, 232 and 236 days respectively.

An accurate assessment of the sex ratios of fawns at birth could not be made as the sex of many dead fawns could not be determined, due to advanced decomposition. The sex ratio of all 116 fawns alive at 3 months of age was 47 males : 53 females.

Many of the young females were transferred from the farm before reproductive performance could be ascertained. Thirteen out of 16 does mated at 16 months of age at an average liveweight of 38.7 kg had fawns. The two lightest does, weighing 29 kg and 33 kg at mating, did not fawn. Yearling does weighing 35 kg and over all produced fawns except for one doe weighing 42 kg at mating. Target threshold mating weight for yearling does appears to be about 35 kg.

The breeding herd of adult does was transferred to the Ruakura Agricultural Research Centre in July 1983.

### Antlers

The casting date of old antlers was recorded for many of the bucks (Table 3). As rising two-year-olds, bucks cast their antlers between November 2 and 20, and as rising three-year-olds between October 16 and November 27. Bucks over four

years of age cast between October 15 and 27.

Casting dates for Fallow become earlier as they mature, like Red deer stags, but are considerably later than for Red stags of the same age. Rising two-year-old stags at Invermay cast antlers from October 5 to November 9 (mean — October 25) and rising 5-year-old stags between August 20 and September 18 (mean — September 4).

Another difference observed between Red and Fallow deer is that the Fallow deer spikers commence cleaning their spikes of velvet in early February. This is several weeks earlier than the older bucks and earlier than Red deer. Red spikers and older stags generally clean their antlers of tattered velvet about the same time.

### Use of Ralgru

The velvet antlers of Fallow deer are not highly valued commercially, and their removal is largely of nuisance value, but necessary to prevent animals injuring one another and of course for transport to slaughter. The effect of Ralgru on the development of antlers on Fallow bucks was investigated following observations on Red deer stags.

In 1976, 10 rising 2-year-old Red stags were given 36 mg of Ralgru (zeranol) subcutaneously in the neck on October 13. This trial indicated the administration of Ralgru to stags about the time they are due to cast old antlers can prevent or delay antler

casting. Further trials in 1980 showed that treatment with Ralgru could be effective in preventing a higher percentage of bucks casting if administered in early October — about 7 to 10 days before casting is calculated to commence.

Four rising yearling bucks were given 36 mg Ralgru on September 20, when pedicles had commenced development. The treatment did not prevent pedicle development, but the bucks grew only small knobly "spikes" less than 1.5 cm in length. (NB. It should be noted that "Ralgru" is not registered for use in deer and for marketing reasons the Game Industry Board advises against its use in animals destined for slaughter as venison).

### Liveweights and growth rates

Fawns were usually not yarded or weaned before the rut because at this age the fawns are light, somewhat frail and hence liable to injure themselves when panicked. Weaning before the rut also upsets the dams and it was considered this could delay onset of breeding.

Spring summer growth rates of young males (Table 4) varied between 84 and 120 g/day over the years. Liveweights of young males in September were uniform for three years, with males weighing 32 kg at 9 months of age in September at the end of the winter and 51 kg in March when aged 15 months. Growth rates of female fawns recorded were less than males over spring summer, when they grew at 60 g/day, reaching 34 and 41 kg at 15 months of age in the two groups recorded.

One group of males, run together until slaughter at 25 months of age, weighed 33 kg at nine months, 51 kg at 14 months, 53 kg at 18 months and 68 kg at 25 months. March liveweights of adult bucks ranged from 70 to 92 kg. Liveweights of the mature does (Table 5) varied between 38 and 51 kg at mating (April) and 39-59 kg shortly before fawning (December). Average liveweight of the does was 45 kg at mating and rose to over 50 kg pre-fawning.

Liveweights of Fallow deer have been recorded by Geoff Asher in the northern North Island. Fawns weighed 20 kg (male) and 17 kg (female) in early March, and at 15 months males weighed 45 kg and females 33 kg. Adult does weighed 37 kg in March and 44 kg pre-fawning in late November. These liveweights are considerably lighter than for Invermay does. ○

Table 4: Liveweights and growth rates of Fallow fawns from 9-15 months of age.

Cohort (N = n, f) born	Male			Female		
	Sept.	March	Growth rate (g/day)	Sept.	March	Growth rate (g/day)
1978 (4,6)	28.5±0.5	44.8±0.5	96±3	24.3±0.8	34.5±1.3	62±3
1979 (4,13)	32.8±1.1	51.6±2.0	84±5	26.9±0.2	40.6±0.5	60±2
1980 (9,0)	32.7±0.9	51.4±1.2	106±4	—	—	—
1981 (6,0)	32.4±1.0	50.9±1.1	120±2	—	—	—

Table 5: Seasonal weight changes in 14 adult Fallow does.

	Liveweight (kg)					
	1979			1980		
	27 April	6 Dec	19 April	18 June	9 Sept.	3 Dec.
Mean	44.6	53.0	43.7	44.5	43.3	49.9
range	40-49	49-59	38-51	40-49	37-48	39-57