TARGET SETTING: BODY CONDITION SCORES AND WEIGHTS

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1. INTRODUCTION

Quality Assurance (QA) involves setting goals *(or targets, standards or specifications)* and achieving them Quality management (QM) is management practice designed to achieve the goals or targets specified This paper looks at the issue of target setting for body conditions scores and bodyweights in deer herds, and selecting targets for production minimums, production improvement and production optimums It will also briefly discuss economic considerations and welfare A range of data for BCS and bodyweights is included to provide reference data

Data on current commercial deer farm management practices and production outcomes has been published (Audigé 1995) These provide the best current, readily accessible, reference source of achievable and achieved goals and description of management practices to achieve the optimum outcome Feeding contributes to many areas of production (Wilson *et al*, 1996), either directly - eg growth resulting in a given carcass weight, or indirectly - eg the effect on body condition score which in turn affects reproduction For venison production, bodyweight alone provides a critical and accurate marker Similarly, antler weight and grade are related to bodyweights These effects are continuous However, for some other outcomes, achievement of thresholds will determine the outcome, eg hinds less than 65 kg are unlikely to conceive, young stags will begin antler pedicle development only after achieving a threshold body weight of 47 kg Yet other production outcomes will be dependent on more than one feed-related result at a time, eg conception date in adult hinds is dependent on body weight (above the threshold), but also on body condition (Audigé, 1995) Thus, for hind reproduction body condition score may be a more useful predictor of a reproductive outcome than bodyweight alone, since almost all hinds on New Zealand deer farms have reached the minimum threshold to achieve reproductive capacity, and most herds have a mean and range of body weights well above

In terms of goal or target setting data can be used to set desired outcomes, eg reproductive percentage, growth rate, velvet weights (see Wilson *et al*, 1995) In addition, bodyweights and condition scores can be used as markers to predict the achievement of the outcome and thus are essential in monitoring management practices Thus, setting target growth rates or body condition scores is essential for monitoring so management practices can be modified if it is confirmed that targets will not be met This will become more important for venison suppliers with forward sale contracts to supply specified product

2. PRINCIPLES OF TARGET SETTING

2.1 Farmer's objective(s)

Every farmer has individual objectives Objectives may be

* financial
* life-style
* satisfaction
* efficiency (by whatever measure)
* productivity
* other
* combination of the above

It is critical that the farmer's goals, objectives and motivation are fully understood It often takes time and subtle discussion to ensure that the vet/advisor and farmer are indeed on the same wavelength This to ensure that the advice and programmes are tailored to the farmer's agenda(s) and not to the advisor's agenda

It is surprising that many farmers do not have clearly defined objectives or targets It is also notable that many find the task of setting and identifying targets as a source of motivation Only after having ascertained the farmer's objectives can the most appropriate strategies be identified The following are some examples to demonstrate these principles

Scenario 1 *The farmer wishes to have a low labour/low input system and is prepared to accept some compromises from absolute optimum outcomes*

SCENARIO 1: Objective : low labour input

Sample management decisions to achieve objective	Result	Production response
Set stocking	Reduced control of food intake Risk of underfeeding	↓ growth rates Less control over BCS of hinds - risk ↓ pregnancy rate - risk delayed calving - risk ↓ calf survival - risk ↑ dystocia - risk . weaning weight Lower weight stags - risk lower velvet wt - risk poorer velvet grades
No feed supplements	No insurance against food shortages	↑ risk of disease risk of underfeeding
No vaccination	↑ risk of disease	Higher mortality Higher subclinical losses
No stag change-over during rut	Risk of lower conception rates	↓ reproductive efficiency
Lower yard/fence maintenance	Risk stock injuries	↑ mortality, ↑ wastage
Less frequent observation at calving	Higher calf mortality Poorer feeding	. weaning % . weaning weight

Sample management decisions to achieve objective	Result	Production response
No weighing	No data	Optimum weights not achieved
No scanning	No culling empties No identification of late calving hinds	Lowered feed conversion efficiency competition for feed
No trace element monitoring	Risk of TE deficiencies	Risk ↓ growth rate, velvet production, animal diseases

Scenario 2: *The farmer wishes to achieve the maximum possible financial return and high production levels.*

SCENARIO 2: Objective : Maximum financial and production efficiency

Sample management decisions to achieve objective	Result	Production response
Stock monitoring	Detection of problems	↓ losses
Fertilizer application	Higher pasture production and quality	Higher growth rates
Strip/rotational grazing	Better feed control	Meeting growth rate and BCS targets
Use of crops/supplementary feeding	Better match of feed supply/demand	Achievement of weight and BCS targets
Subdivision	Better management of pasture	↑ stocking rate, achievement of weight/BCS targets
Strict vaccination/drenching programme	Enhanced health	↑ growth rates ↓ mortality rates
Trace element monitoring	Knowledge of status	Cost-effective supplementation
Changing stags at mating	↓ risk of infertile/sub-fertile stag	↑ conception rate
Scanning	Detection of non-pregnant hinds	Cull empties, improve efficiency ID late calvers

Production targets for each scenario would be different The decisions for Scenario 1 would be input based (ie what the farmer did or did not want to do) Assessment of the need for each management input and the corresponding predicted result, which would invariably be a compromise to potential productivity, would need to be evaluated It will become clear which inputs are imperative and which are not Production targets would be set accordingly In this instance it would be inappropriate to target the biological optimum for any of the outcomes, given that none of the inputs could actually ensure that targets could be reached

To achieve the objective in Scenario 2, targets would be set at biological potential (animal and pasture) because the imperative is efficiency and maximising returns These can only be achieved through achievement of biological potential, even though there may be a slight conflict between maximising returns financially and maximising biological efficiency The level of input will be

determined by the practices needed to achieve the targets and will invariably be greater than for Scenario 1, because the philosophy is outcome-based rather than input based

2.2 Compatibility: Objectives, Environment, Farmer Ability

A further consideration before choosing targets is to assess the farmer's objectives against the farm, its characteristics and the ability and attributes of the farmer For example, farms with high summer rainfall will be better suited to weaner production and high growth rates, and maintenance of body condition during lactation, than farms in dry summer areas A target weight on March 1 of 50 kg for weaner stags on a dry Canterbury farm may be unachievable on a consistent basis Conversely, colder areas with poor winter feed growth may not be well suited to maximal winter growth rates or early season venison production Genetic influences are also important The farmer wishing to achieve average velvet antler production of 3 kg from mixed age stags, but whose 2-year-old stags produce only 1 0 kg average and whose best breeding sire cuts only 2 8 kg is unlikely to achieve the stated objective Similarly, weight gain objectives for venison production can be achieved by genetic influences, either within a breed or between species, eg red *vs* Wapiti Target growth rates may be achievable using a hybrid whereas they may not be using a pure red strain

The knowledge and ability (skill) of the farmer must be assessed If a farmer is currently a poor producer, the first objective may need to be to educate/upskill the farmer by providing information and instruction

2.3 Commitment to writing

The farmer should commit the objectives to paper to provide a source of focus and reinforcement Targets should be reviewed regularly on the basis of achievement levels

2.4 Motivation

Motivation is a function of the recognised value of the outcome and the probability of success Maximum motivation is reached when this probability is around 50% Minimum motivation is when this probability is either 0% or 100% Thus setting targets to achievable, yet challenging viewed by the farmer, is required to boost motivation

Thus, an holistic approach must be taken It is simply not appropriate to adopt arbitrary objectives - all factors relating to that farm should be accounted for in setting the objectives

3. CHOOSING TARGETS

Targets can be chosen either to set a goal for improvement, or to set achievement levels between minimum and maximum

3.1 Targets to achieve minimum performance

These levels are extremes or thresholds to achieve biological outcomes The classic example is the achievement of puberty in young hinds at 65 kg That figure used to be the target for yearling hinds However, the 65 kg figure relates only to the ability to conceive as the outcome It does not take into account the timing of onset of oestrus A low bodyweight hind will have a delayed onset of oestrus, which will be a lifetime feature of that animal Thankfully it is now widely recognised through the industry that achievement of substantially greater than 65 kg is needed to optimise production from young hinds

Similarly, it has been shown that young stags must reach a bodyweight of 47 and 57-59 kg before pedicle initiation and antler development, respectively Permanent stunting may result in a hummel - a stag which never grows an antler On farms an occasional runt will occur, they should be culled

There is little reason why targets to achievement minimum performance cannot be greatly exceeded on deer farms It is easy to aspire to mediocrity An industry based on quality assurance should be aspiring to excellence

3.2 Targets for improvement

Once the actual level of performance for a given outcome has been established on a farm and compared with potential, if improvement is appropriate or desired a target can then be set The target must be realistic and achievable in the short and long term For example, given the scenario in 2 2 above a short-term target of 3 kg average velvet antler weight is not attainable A short-term target of increasing velvet weight by improving winter stag bodyweights and growth rate from June to velvetting, along with improving copper status and any other management factor which may be identified, may be more realistic Thus, with existing constraints, stock and changed management practices, a target of 1 3 kg for 2-year-old, 1 8 kg for 3-year-old and 2 4 kg for older stock during the next 12 month cycle may be realistic The 3 kg target can still be a long-term target but achievable through a range of other management factors and decisions, such as a combination of feeding with introduction of genetics through either purchase of breeding stags of superior genetic merit, or even longer term, introduction of new genes through artificial insemination or embryo transfer techniques to breed own sire replacements An economic evaluation would be appropriate before the latter sequences should be introduced

Another example could be the herd with a mean yearling hind bodyweight of 66 7 kg (see Table, Appendix 3 32) (Note this was actual data recorded from one of our survey farms) The low reproductive performance in this herd could be associated with hind bodyweight A short-term target of 102 kg (highest average) would likely be unachievable on that farm A short-term target to achieve the average farm mean yearling bodyweight (81 3 kg) in the next two years would be more realistic Usually management changes and other farming decisions have a long lead-up time and involve a whole range of management practices Another factor is that it may take months or

years for that farmer to conceptualise the systems that are needed to achieve better outcomes The target must be agreed by the farmer as being achievable if not, it is unlikely to be achieved

3.3 Targets for optimum performance

3 3.1 Body condition scores

Body condition score is related to reproduction outcomes (see Wilson *et al*, this proceedings) Our models suggest that BCS is extremely useful as both a target parameter and predictor of outcomes Thus, if optimum reproductive success is to be achieved based on our models of association between BCS and reproduction, the farmer should body condition score deer at strategic points as follows

* Weaning (early March)
  - mixed age hinds should be at or above a threshold body condition score of 2 5 If below this average they should be managed separately to achieve sufficient weight gain in the next two to three weeks to reach the pre-mating threshold target The effect of achievement of the minimum target will be to improve conception rate and advance conception date
* Pre-rut
  - yearling hinds should be of a BCS of 2 5-3 5 Higher body condition score yearlings have been shown to be at higher risk of not conceiving If below 2 5, conception rate may be reduced and conception date delayed
* Winter
  - If BCS falls below 2 5 in September there is a probability of reduced survival of progeny to weaning
* Pre-calving
  - If BCS in September is more than 4, there is a 3 4 times higher risk of dystocia in mixed age hinds

It therefore appears clear that hinds should be maintained at a reasonably steady body condition score through all stages of the reproductive cycle More discussion of BCS in hinds is to be found in Audigé (1995)

3.3.2 Bodyweights

Our studies and others have shown that bodyweight is related to many production outcomes The following summarises the principal effects (note these effects are above minimum thresholds described earlier)

Reproduction	Higher growth rates during March to June in yearling hinds increases the probability of a higher conception rate Thus it is important to have yearling hinds on an above-maintenance diet during mating
	High weight in June is positively associated with the ability of the hind to rear a calf to weaning, ie weaning rate

High weight of dam in June, ie early gestation, is related to high weaning weights of progeny, ie the heavier the hind in winter the heavier the weaner at weaning

The greater the bodyweight increase in pregnant hinds during spring, the greater the risk of dystocia

Velvet — 2-year-old velvet weight and grade were positively related to higher bodyweights in June and high winter growth rates

In adult stags high bodyweights in June were related to high velvet weights In addition, the higher the weight gain between June and velvet harvesting date, the higher the antler weight

Health — From limited models we have shown a relationship between weaning weight and the risk of the individual animal to yersiniosis The higher the weaning weight the lower the risk Within a mob, if the range of body weights was wide, regardless of the average, there was a higher risk of yersiniosis in the lightweight deer However, for malignant catarrhal fever it has been observed that the risk of MCF is greater in high bodyweight mixed age hinds These relationships needs to be examined in more detail

4. DEFINING PRODUCTION MEASURES

Production outcomes can be broadly classified as reproduction, growth, velvet and health

Before targets are set an evaluation of current productivity outcomes should be undertaken This has a two-fold effect

* identification of production areas where improvement can be made,
* provision of a guide as to the likely or possible magnitude of improvement

To achieve the former, an evaluation of all processes that contribute to the outcome is necessary For example, if mortality rate in mixed age hinds in a herd was 4% (average 1 77%), the cause(s) of death should be listed and categorised as preventable or non-preventable Target areas for improvement become obvious

Another example would be low reproductive efficiency (number of deer weaned over number of hinds mated x 100) To evaluate that outcome a further series of ratios needs to be investigated to identify where the production loss was occurring These ratios effectively define targets Example include

* number of hinds pregnant at scanning over number of hinds mated x 100%
* number of hinds calving over number of hinds scanned pregnant x 100%
* number of hinds with live calf 24-48 hours after birth over number of hinds calving x 100% (ie a measure of perinatal loss)
* number of hinds rearing a calf to weaning over number of hinds producing a live calf x 100% (a measure of progeny survival)

Alternatively, the objective may be one of early calving, in which case the rates above pertain to conception, for example before May 1, and all subsequent ratios would relate to that pattern

Usually these figures are not available retrospectively Part of farm performance monitoring will involve a programme of recording to provide the diagnostic information needed to identify poor outcomes and their components, and therefore to identify target areas for improvement as well as quantifying the new targets Thus, while the gross outcomes - for example, weaning percent, bodyweights, velvet weights and mortality rates - are easy to measure, the factors that contribute to them require much more intensive data collection, because each outcome is a result of a multitude of factors (the "causal web")

The precise definition of targets should be established for each property They may not be the same between properties

5. ECONOMIC CONSIDERATIONS

In setting new targets there are a number of economic considerations

* **Does achievement of target involve cash flow?** Eg purchase of supplementary feed, purchase of new breeding sires If yes, the economic benefit of making change may be of concern to the farmer Cash flow, debt structure, taxation and personal considerations all contribute Thus the financial situation and goals of the farmer need to be known and discussed Advice which involves costs that cannot be afforded because of debt or cash flow problems is useless at best, and counter-productive at worst, by alienating or distressing the farmer

* **What return can be expected from the cost?** Eg if reaching a target of improving growth depends on buying a Wapiti hybrid stag Firstly optimum use should be made, ie a high stag/hind ratio, even though a slight reduction in conception rate may occur This may be offset by an increased number of progeny A simple scenario could be

-	purchase of a stag		$3 000 00	
-	opportunity cost 10%		$300 00	
-	stag/hind ratio	1/60		
-	weaning rate	85%		
-	increased weight at weaning			
	Male	10kg		
	Female	8 kg		
-	increased return at weaning			
	Male	10 x $5* x 25 5	=	1275
	Female	8 x $4* x 25 5	=	816
				$2 019

* conservative value/kg liveweight

Note If weaners were kept through winter the additional cost of feeding or lower stocking rate would need to be budgeted in, ie a 25% increase in growth rate of hybrids may require approximately a 10% reduction in stock numbers

Thus the cost benefit ratio is so obvious that intricate financial analysis is unnecessary

A second example could be an attempt to improve weaner growth rates in winter by supplementary feeding, eg

* target + 50 g/day for 100 days
* method - feed barley
* requirement - approx 2 MJME/day - total 200 MJME/head
* Barley @ 12 5 MJME/kgDM - approx 18 kg barley needed/head
* @ $300/tonne - cost per 100 days = $5 33 per deer
* return - 5 kg liveweight less estimated 60% compensatory growth† in spring = 2 kg liveweight at slaughter in December
* 2 kg @ 56% = 1 12 kg carcass @ $7 50 = $7 84
* Nett + $2 51 per deer

† there is dispute about compensatory growth in deer This figure is possibly high

Note this calculation does not account for an increased cost of spring grazing of approximately 20 kgDM/deer, or the benefit of improved health or reduction of mortality

On the other hand, if nitrogen was applied as urea to pasture in the autumn @ $500/tonne

* $1/kgN
* estimate response 15 kgDM/kgN
* 18 5 kg pasture DM needed to supply 200 MJME
* Cost $1 23
* Nett return $6 61

These calculations conclude that the target increase growth rate will yield an increase in venison sales and that this more than offsets the cost incurred by two possible methods of achieving the target

Every new target can be evaluated by a similar means While many calculations will not be precise, they should give a reasonable indication of the probability of cost benefit

6. ANIMAL WELFARE

Production targets must take into account the wellbeing of the animal For example, if a target for production is to reduce the body condition score and weight of hinds during winter as a means of overcoming a predicted feed deficit, or as a short term target during late winter to decrease the risk of dystocia, the effect of that below-maintenance diet in itself needs to be accounted for For example, in fine weather the hind may not suffer unduly through sub-maintenance feeding levels However, in inclement weather the requirement for body heat increases and increases the risk of stress-related diseases such as MCF

Provision of shelter, supplementary feeds and a range of management practices impinge on the wellbeing of the animal Setting a target must take all events and possible outcomes into consideration

7. PRODUCTIVITY DATA

The following tables and graphs are from the PhD thesis, *Deer Herd Health and Production Profiling* by Laurent Audigé Data presented in these Tables are collected from 16 farms in the lower half of the North Island (coded 1-16)

Data is collected in one of three levels

- Farm data giving mean and range for a given measurement for each farm to allow between farm comparison, eg Figure 3 16 shows the mean and range of body condition scores on each farm,

- Farm mean data this data shows the average for a given measurement for that farm, eg Figure 3 17 shows the means of BCS for each farm, not the full range of BCS for all animals over all farms
- Individual animal data eg Table 3 16 shows the full range of weights over all individual deer on all farms pooled together Similarly Figure 3 25 shows all individual animal data combined over the 16 farms

Please read the Figure and Table legends carefully to correctly interpret the data

REFERENCES

Audigé (1995) Deer Herd Health and Production Profiling PhD Thesis, Massey University

Hamilton WJ, Blaxter KL (1980) Reproduction in farmed red deer I Hind and stag fertility J Agric Sci Camb **95**, 261-73

Wilson PR, Audigé LJM and Barry TN (1996) Deer feeding Fertile ground for quality improvement These Proceedings

Wilson PR Deer Herd Health and Productivity Measurement data collection and assessment Deer Course for Veterinarians Proc No 12, Deer Branch NZVA Ed P R Wilson, pp7-30

Figure 3.16 : Mean pre-mating yearling and adult hind body condition score (±SD) between farms in 1992 and 1993.

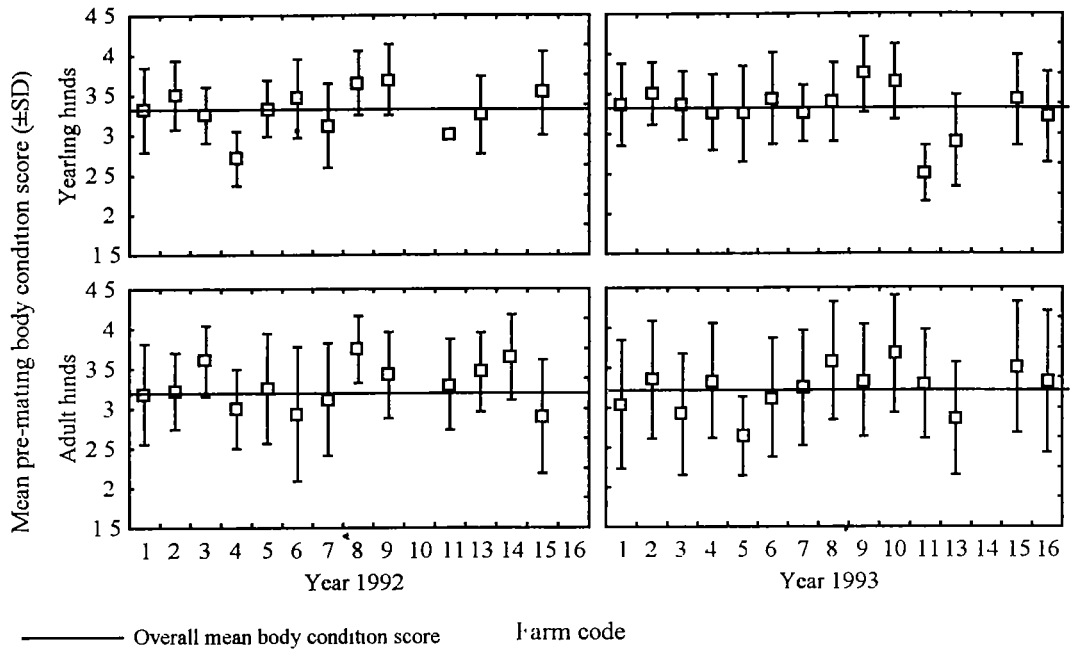


Figure 3.17 : Range and quartiles of farm mean yearling and adult hind body condition score recorded pre-mating, post-winter and at weaning in 1992 and 1993.

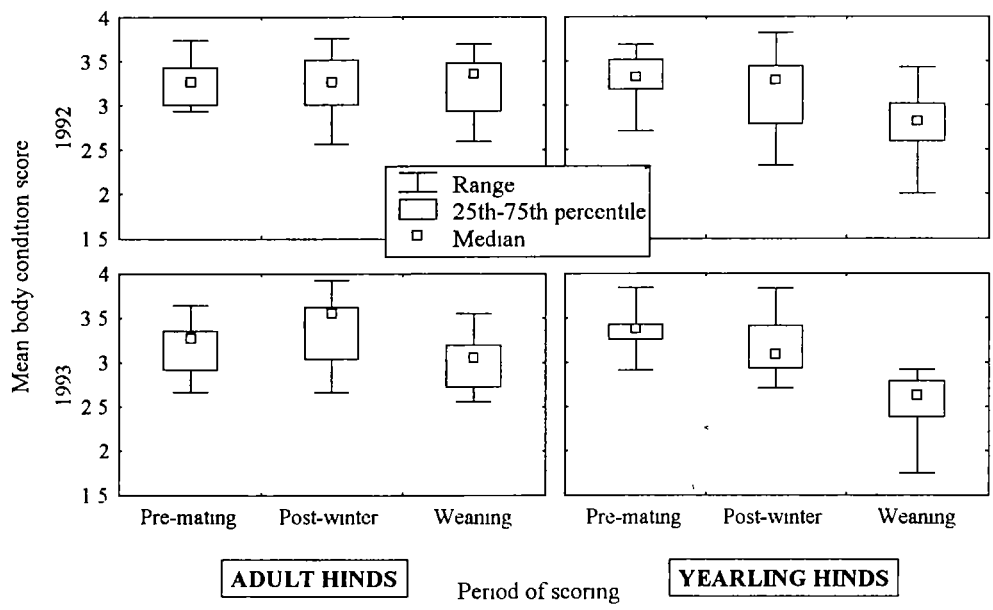
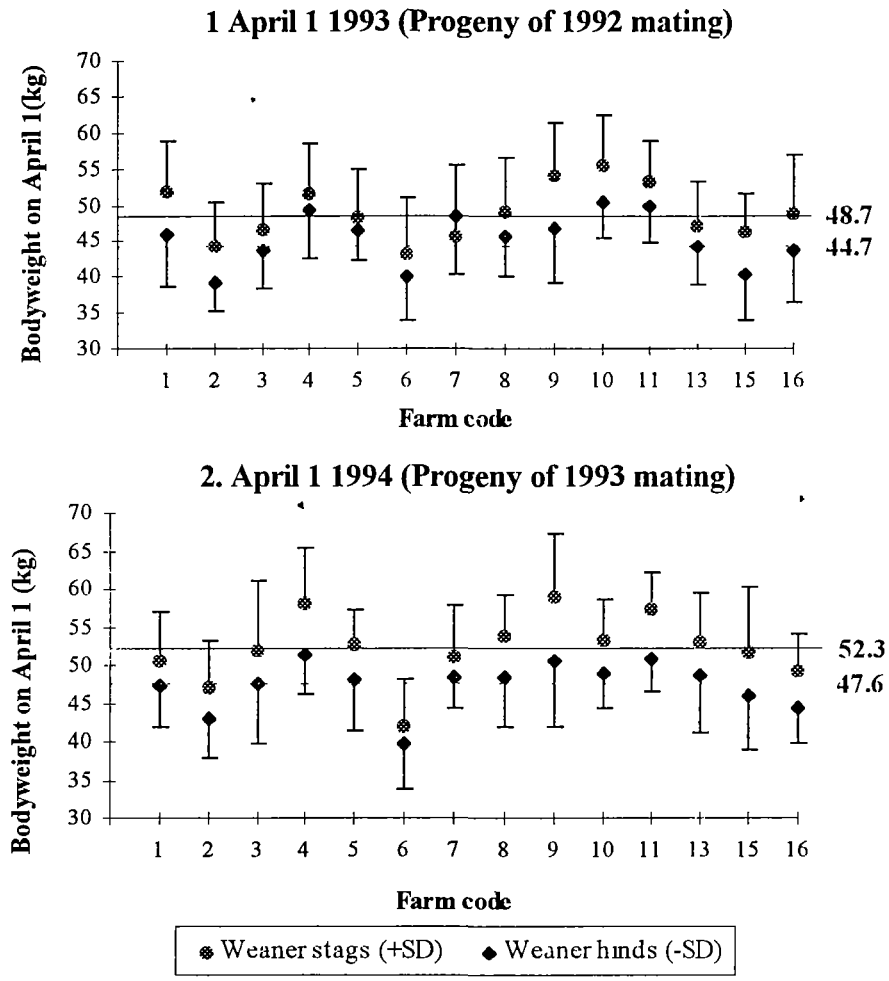


Table 3.16 : Descriptive summary of yearling and adult hind bodyweights (kg) in 1992 and 1993

	Yearling hinds					Adult hinds				
Year	Number of hinds	Mean	Min	Max	SD	Number of hinds	Mean	Min	Max	SD
MARCH (Pre-mating)										
1992	311	82 8	52 0	107 0	9 4	1158	98 0	65 0	133 5	10 6
1993	442	81 3	44 0	113 0	8 5	1422	98 7	56 0	144 5	10 7
JUNE										
1992	325	84 8	53 5	114 0	10 2	1167	97 1	66 5	130 0	10 1
1993	417	85 1	59 5	118 0	8 6	1408	99 5	66 0	140 0	9 6
SEPTEMBER										
1992	177	80 5	58 0	109 5	10 4	637	94 2	57 5	136 5	10 7
1993	323	85 3	58 5	115 0	9 1	1403	98 4	68 5	135 5	9 3
NOVEMBER (Pre-calving)										
1992	258	91 0	52 0	119 0	11 5	925	102 9	67 0	139 0	11 6
1993	139	96 8	75 0	124 0	8 8	564	109 9	78 0	156 5	10 7

Min = minimum, Max = maximum, SD = standard deviation

Figure 3.24 : Mean and standard deviation of bodyweight (kg) of weaner hinds and stags calculated on each survey farm on April 1 1993 and 1994.



Note Solid and broken lines are overall mean weaner stag and hind bodyweights, respectively

Figure 3.25 : Mean and standard deviation of bodyweights of weaner hinds and stags. All survey farms and both years 1992 and 1993 combined.

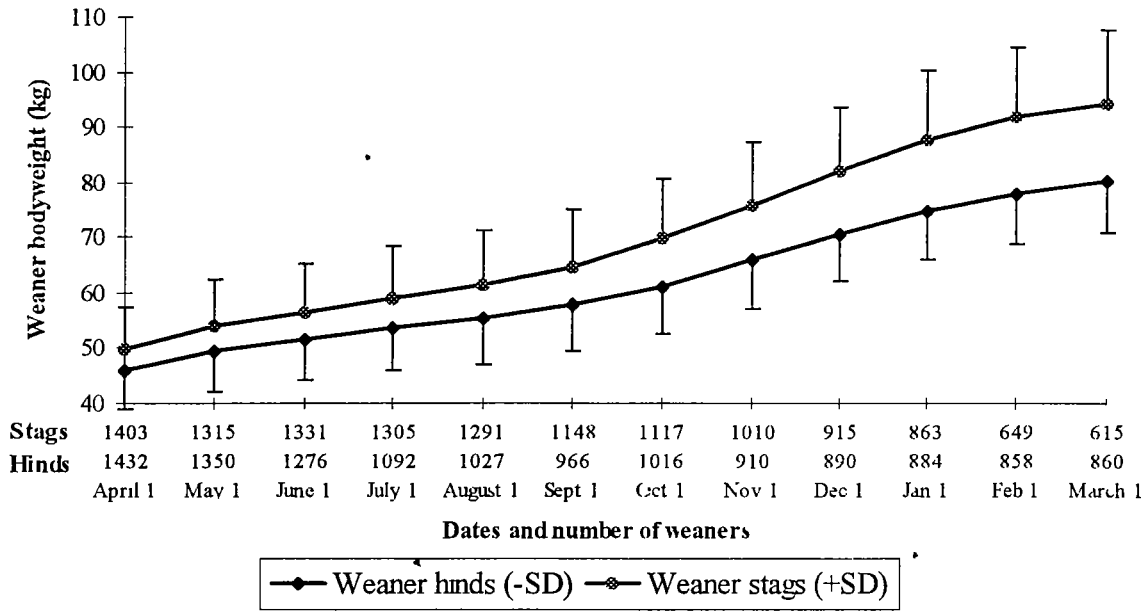
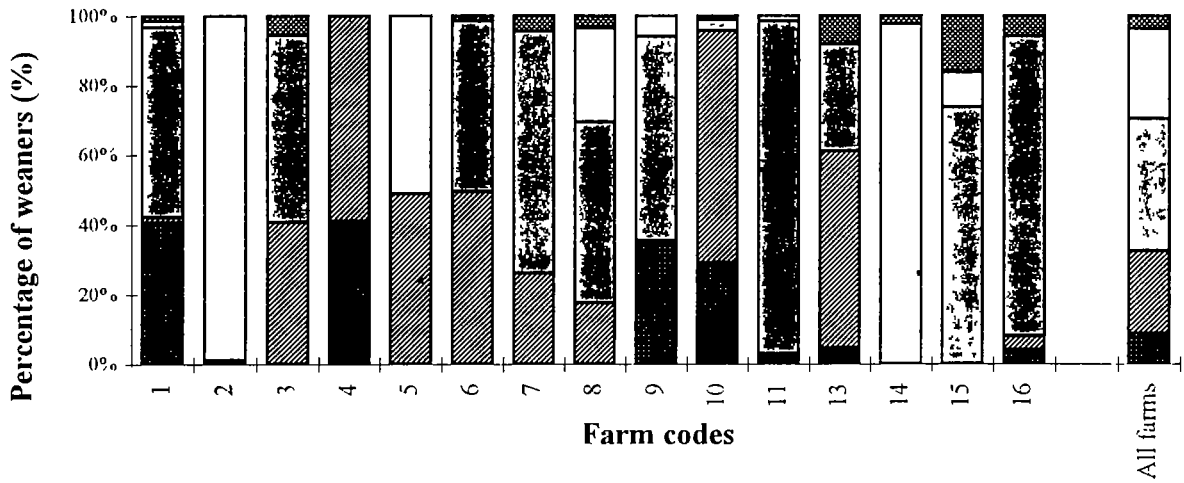
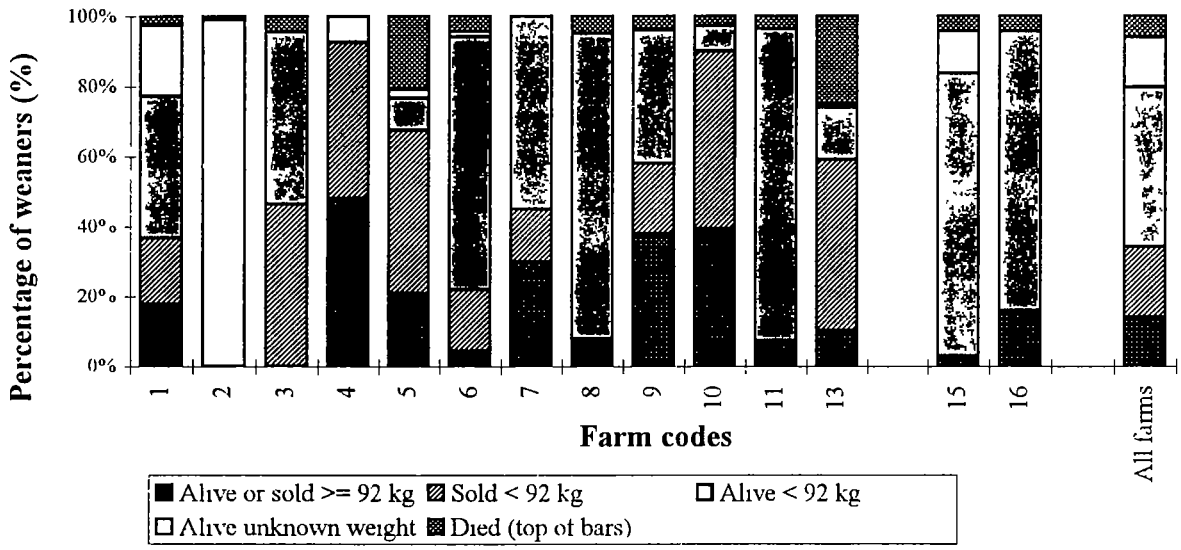


Figure 3.26 : Proportion of weaner stags that reached 92 kg bodyweight by December 1 (%), that did not reach 92 kg by December 1 (sold or not), and that died before December 1 on each survey farm in 1992 and 1993.

a Year 1992



b Year 1993



Note The bodyweight on December 1 of weaners sold in November was estimated from their last bodyweight record (in October or in November) and their Spring growth rate
Sold<92kg includes weaner sold alive, slaughtered or taken away by their owner
Died includes weaners that died, escaped or were missing, or were killed by the farmer because of injuries or diseases

Figure 3.27 : Mean and standard deviation of seasonal growth rates of weaner hinds and stags. Data from 1992 and 1993 combined.

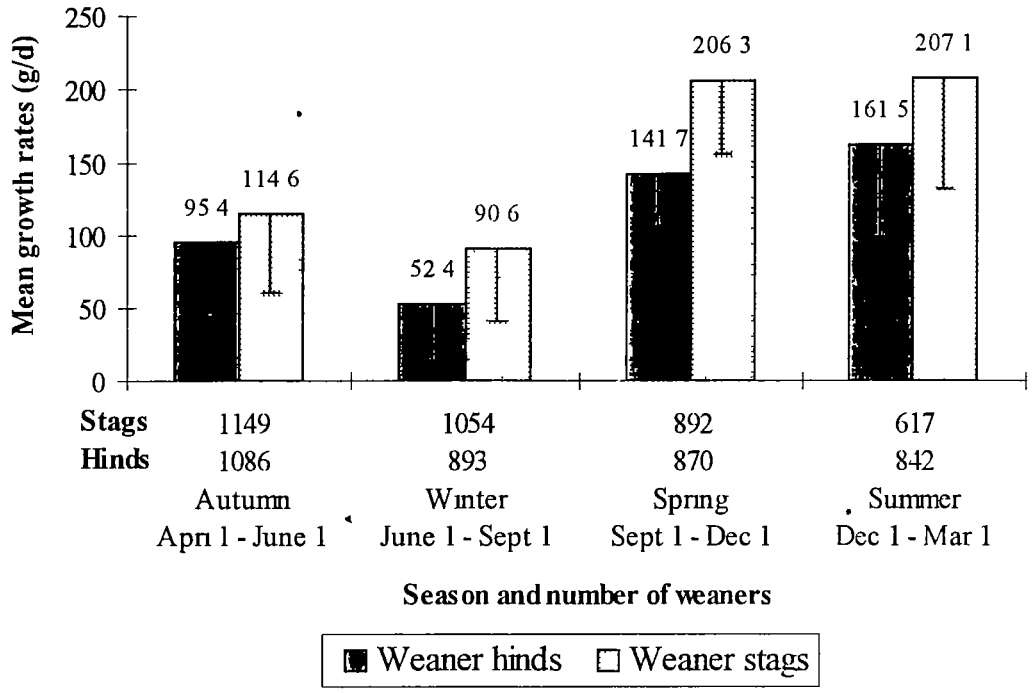


Figure 3.28 : Median (line) and range (dots) of farm mean bodyweights of weaner hinds and stags. Data from 1992 and 1993 combined.

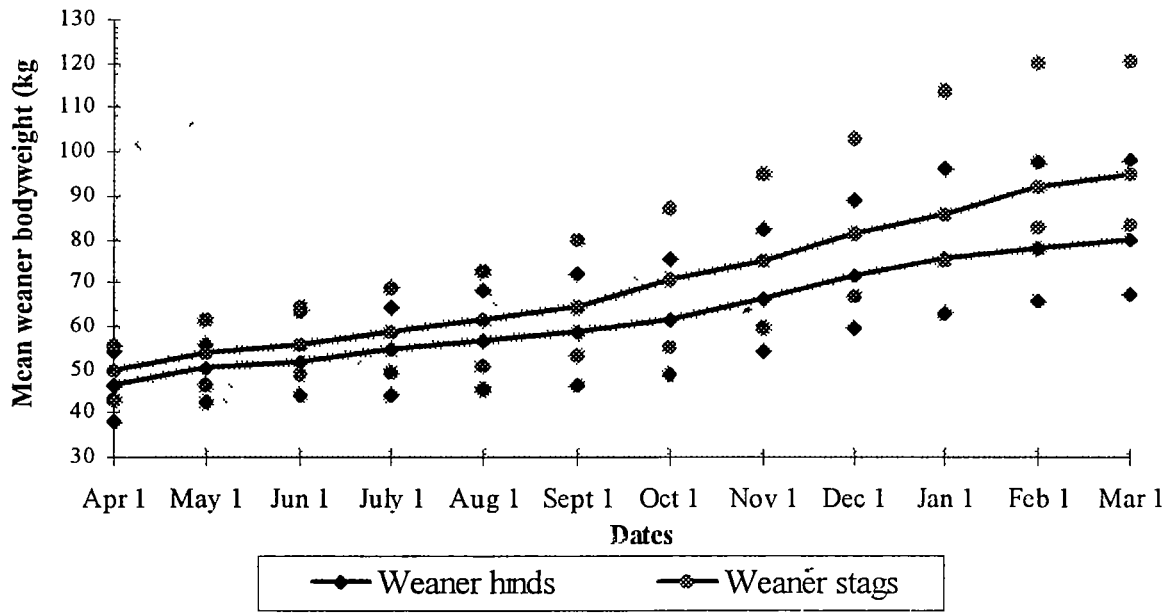


Table 3 24 : Summary statistics of farm mean weaner (deer 3-15 months old) seasonal growth rates and bodyweights both years 1992 and 1993 combined.

		Weaner stags							Weaner hinds						
Date	Code*	Number of farm-years	Min	25th percentile	Mean	Median	75th percentile	Max	SD	Number of farm-years	Min	25th percentile	Mean	Median	75th percentile	Max	SD
April 1	n	25	12	33	56	54	68	119	26	25	8	33	57	54	76	136	29
	MW4	25	43 0	46 5	49 6	49 8	52 0	55 5	3 5	25	38 3	43 8	46 1	46 4	48 3	54 4	3 9
	n	24	12	30	48	39	59	119	26	24	8	31	45	40	56	136	27
	MGR46	24	53 9	90 0	118 0	120 0	145 6	203 5	40 5	24	33 9	69 0	100 2	99 6	132 0	170 4	38 6
June 1	n	26	23	32	51	42	64	119	24	27	8	32	47	41	59	136	26
	MW6	26	49 1	51 4	56 5	55 9	61 4	64 4	5 0	27	44 0	47 2	52 0	51 8	55 6	63 4	5 2
	n	24	16	31	44	36	56	98	20	25	5	25	36	35	49	63	18
	MGR69	24	7 5	74 8	95 9	94 2	125 8	185 2	42 8	25	4 7	34 9	54 9	54 8	66 6	137 1	32 2
September 1	n	26	19	30	44	39	53	98	19	26	5	26	37	35	50	74	19
	MW9	26	53 2	56 8	65 2	64 4	70 6	79 5	8 1	26	46 4	51 7	58 0	58 5	62 7	71 8	6 9
	n	21	22	31	42	38	47	96	16	25	5	24	35	35	47	61	17
	MGR912	21	120 4	182 3	205 6	203 2	224 9	292 0	40 3	25	86 1	122 8	141 0	142 3	159 2	191 9	27 5
December 1	n	21	22	32	44	38	50	97	17	25	5	25	36	35	48	68	18
	MW12	21	66 7	76 1	82 3	81 2	86 5	102 9	8 9	25	59 4	65 0	71 0	71 4	75 3	88 9	7 7
	WS92	29	0	0	15 4	7 5	29 5	48 0	16 4								
	n	18	4	24	35	32	47	66	16	24	5	27	35	37	50	63	18
	MGR123	18	111 7	167 3	211 1	209 6	255 8	305 3	54 6	24	53 5	99 8	154 2	157 5	196 5	262 5	57 8
March 1	n	17	4	25	37	32	47	68	17	24	5	28	36	37	50	64	19
	MW3	17	83 2	85 2	95 4	94 6	100 3	120 4	9 8	24	67 1	75 9	80 7	79 9	87 9	98 3	8 1

n = number of weaners in the mob, Min = minimum, Max = maximum, SD = standard deviation

* Codes are described in Table 2 37

Note descriptive statistics of individual weaner bodyweights per farm are presented in Appendices 3 41 to 3 44 (mean bodyweights) and in Appendices 3 46 and 3 47 (mean growth rates)

Appendix 3.32 : Bodyweights of yearling hinds mated on each survey farm in 1992 and 1993.

	MARCH						JUNE					
Farm code	Date	Number of deer	Mean	Min	Max	SD	Date	Number of deer	Mean	Min	Max	SD
Year 1992												
1	01-Mar	36	83 3	69 0	101 5	6 7	22-Jun	13	85 8	75 5	98 0	7 6
2	20-Mar	41	77 8	59 0	93 5	8 6	23-May	45	86 1	60 5	101 0	9 4
3	03-Mar	4	83 5	73 0	91 0	7 4	29-Jun	4	81 8	69 0	95 5	10 9
4	29-Feb	14	92 4	85 0	103 0	4 6	19-May	14	95 9	88 0	109 0	4 8
5	NR						NR					
6	17-Mar	47	76 2	52 0	90 0	7 1	NR					
7	07-Mar	18	80 8	68 2	92 8	5 2	01-Jun	27	79 3	71 8	90 0	4 7
8	21-Feb	31	87 8	78 0	107 0	6 5	25-Jun	32	91 5	78 5	111 5	6 8
9	11-Mar	34	89 8	70 0	105 0	8 1	03-Jun	34	96 4	76 0	114 0	8 9
10	06-Mar	22	93 4	82 0	107 0	5 3	01-Jun	22	91 5	80 5	104 5	5 0
11	23-Mar	1	103 0				27-May	1	101 0			
13	04-Mar	48	77 3	61 0	98 5	7 8	25-Jun	46	84 4	69 0	95 0	5 8
15	23-Mar	15	84 3	73 0	100 0	7 2	27-Jun	46	78 1	66 0	91 5	5 8
16	NR						01-Jul	41	72 3	53 5	83 5	6 1
All farms		311	82 8	52 0	107 0	9 4		325	84 8	53 5	114 0	10 2
Year 1993												
1	11-Mar	43	84 8	66 0	100 0	7 3	03-Jun	43	88 8	66 0	105 0	7 0
2	20-Jan	27	79 2	68 0	88 5	4 6	NR					
3	17-Mar	30	79 7	44 0	101 0	11 4	11-Jun	17	84 9	75 0	98 0	6 6
4	26-Feb	12	95 8	86 0	104 0	5 0	20-May	12	96 3	83 0	106 0	5 7
5	NR						23-Jun	7	89 4	80 5	100 0	6 0
6	17-Mar	26	78 1	61 0	93 0	7 4	19-May	26	77 2	62 0	87 0	6 4
7	20-Mar	12	74 2	57 5	83 0	7 4	07-Jun	12	78 8	59 5	85 0	7 8
8	02-Feb	56	79 3	62 0	91 0	7 0	26-May	57	83 0	61 5	96 0	7 2
9	27-Feb	47	87 7	78 0	113 0	6 1	05-Jul	47	94 8	80 0	118 0	7 3
10	03-Mar	35	89 4	77 0	99 5	5 3	08-Jun	35	90 8	78 5	102 0	5 0
11	15-Feb	1	84 0				25-May	1	90 0			
13	25-Mar	45	80 9	66 5	97 5	5 6	08-Jun	44	82 5	72 0	100 0	5 3
15	29-Mar	71	74 7	60 0	93 5	6 5	14-Jun	76	79 6	64 0	99 0	7 3
16	17-Mar	37	79 6	72 0	93 0	4 9	01-Jul	40	83 6	74 0	99 0	5 3
All farms		442	81 3	44 0	113 0	8 5		417	85 1	59 5	118 0	8 6
All hinds combined		753	81 9	44 0	113 0	8 9		742	84 9	53 5	118 0	9 3

	SEPTEMBER						NOVEMBER					
Farm code	Date	Number of deer	Mean	Min	Max	SD	Date	Number of deer	Mean	Min	Max	SD
Year 1992												
1	05-Sep	36	84 4	65 0	104 0	7 8	14-Nov	23	98 3	83 0	119 0	9 2
2	NR						16-Nov	20	104 8	95 5	115 5	5 0
3	NR						07-Nov	2	97 5	93 0	102 0	4 5
4	NR						10-Nov	14	93 4	82 0	106 0	5 2
5	27-Aug	9	91 4	86 0	99 0	4 9	NR					
6	NR						09-Nov	46	79 0	52 0	95 0	9 4
7	12-Sep	23	78 5	67 5	88 5	5 8	07-Nov	16	85 4	72 0	97 0	7 3
8	NR						28-Oct	23	89 9	79 0	113 0	7 2
9	NR						26-Oct	31	96 0	77 0	113 0	7 9
10	31-Aug	22	95 5	86 5	109 5	5 0	NR					
11	NR						NR					
13	NR						16-Nov	44	98 5	78 5	110 0	7 3
15	21-Sep	47	79 3	66 0	101 0	6 9	NR					
16	14-Sep	40	69 0	58 0	81 0	5 5	15-Nov	39	83 1	65 5	99 0	8 1
All farms		177	80 5	58 0	109 5	10 4		258	91 0	52 0	119 0	11 5
Year 1993												
1	09-Sep	43	88 5	64 0	104 0	7 6	NR					
2	NR						NR					
3	10-Sep	17	82 6	71 0	98 0	6 4	02-Nov	17	86 8	75 0	100 0	6 2
4	09-Sep	12	101 5	89 0	109 0	5 2	NR					
5	NR						NR					
6	16-Sep	26	75 4	58 5	87 5	7 4	NR					
7	28-Aug	6	80 4	78 0	83 0	1 6	17-Nov	3	89 8	87 5	92 0	1 8
8	NR						NR					
9	29-Sep	47	92 9	78 0	115 0	7 6	05-Nov	47	98 8	83 0	124 0	8 6
10	01-Sep	32	89 5	82 0	100 5	4 9	NR	32	103 3	92 5	119 5	6 4
11	02-Sep	1	88 0				NR					
13	02-Sep	24	87 1	78 5	104 5	5 8	NR					
15	09-Sep	75	78 6	62 0	93 5	6 6	NR					
16	05-Oct	40	84 6	73 5	98 0	5 2	17-Nov	40	94 1	82 0	112 0	6 3
All farms		323	85 3	58 5	115 0	9 1		139	96 8	75 0	124 0	8 8
All hinds combined		500	83 6	58 0	115 0	9 8		397	93 0	52 0	124 0	11 0

Note No yearling hinds were surveyed in farm 14

Min = minimum, Max = maximum, SD = standard deviation, NR = not recorded by the farmer

Appendix 3.33 : Bodyweights (kg) of adult hinds mated on each survey farm in 1992 and 1993.

	MARCH						JUNE					
Farm code	Date	Number of deer	Mean	Min	Max	SD	Date	Number of deer	Mean	Min	Max	SD
Year 1992												
1	01-Mar	112	103 4	81 5	130 5	8 5	30-May	125	104 8	81 5	124 0	8 8
2	20-Mar											
3	03-Mar	146	97 8	78 0	124 0	9 1	29-Jun	145	96 8	80 5	130 0	8 8
4	29-Feb	76	99 7	82 0	129 0	9 0	19-May	62	101 2	87 0	122 0	8 4
5	16-Mar	78	96 1	71 5	118 0	10 4						
6	17-Mar	117	91 6	68 0	124 0	9 6						
7	07-Mar	51	89 1	67 6	110 0	7 5	01-Jun	52	89 3	70 2	115 0	7 7
8	NR						25-Jun					
9	11-Mar	86	98 5	80 0	121 0	8 5	02-Jun	86	103 9	86 0	125 0	8 6
10	06-Mar	166	106 4	84 5	133 5	9 0	01-Jun	169	98 7	82 0	126 5	8 1
11	23-Mar	129	94 5	76 0	115 0	8 3	27-May	129	95 2	78 0	116 0	7 9
13	04-Mar	175	95 6	65 0	132 0	11 3	25-Jun	140	94 4	66 5	126 5	11 7
14	09-Mar						02-Jul					
15	23-Mar	22	104 4	90 5	120 0	8 7	27-Jun	138	96 9	71 0	117 0	9 0
16							01-Jul	121	89 2	69 0	114 0	9 4
All farms		1158	98 0	65 0	133 5	10 6		1167	97 1	66 5	130 0	10 1
Year 1993												
1	11-Mar	140	102 0	77 0	124 0	8 9	03-Jun	136	105 5	85 0	128 0	8 9
2	NR											
3	17-Mar	139	97 6	77 0	121 0	7 6	11-Jun	127	96 9	82 0	119 0	7 5
4	25-Feb	64	104 1	86 0	124 0	9 1	20-May	63	102 8	88 0	122 0	8 2
5	10-Mar	59	89 0	73 0	110 5	6 5	23-Jun	62	92 1	75 0	109 0	6 5
6	18-Mar	144	97 6	69 0	127 0	9 9	19-May	117	94 9	66 0	123 0	9 6
7	20-Mar	52	90 1	75 0	115 5	6 9	07-Jun	53	89 9	76 5	115 5	7 1
8	NR						26-May	188	102 7	84 0	125 5	7 6
9	04-Mar	106	107 8	89 0	128 0	8 5	05-Jul	105	105 8	93 0	128 0	7 6
10	03-Mar	155	107 1	85 5	144 5	8 8	08-Jun	154	104 8	87 0	140 0	8 1
11	18-Mar	107	98 6	83 0	120 0	7 2	25-May	106	96 7	81 0	114 0	6 9
13	15-Mar	180	92 7	71 0	128 0	9 1	08-Jun	46	93 5	74 0	104 0	8 1
15	06-Apr	141	96 2	56 0	122 5	12 0	14-Jun	117	98 5	74 5	125 0	10 6
16	17-Mar	135	96 5	72 0	127 0	11 5	01-Jul	134	94 9	73 0	122 5	9 2
All farms		1422	98 7	56 0	144 5	10 7		1408	99 5	66 0	140 0	9 6
All hinds combined		2580	98 4	56 0	144 5	10 6		2575	98 4	66 0	140 0	9 9

	SEPTEMBER						NOVEMBER					
Farm code	Date	Number of deer	Mean	Min	Max	SD	Date	Number of deer	Mean	Min	Max	SD
Year 1992												
1	05-Sep	134	99 7	83 0	116 0	7 6	11-Nov	126	111 5	91 0	132 0	8 4
2	NR						16-Nov					
3	NR						07-Nov	140	101 3	80 0	130 0	8 6
4	NR						10-Nov	62	105 6	84 0	125 0	8 6
5	27-Aug	62	92 5	72 0	110 0	8 9	NR					
6	NR						09-Nov	102	92 1	67 0	116 0	9 0
7	12-Sep	49	88 9	76 5	114 5	7 6	07-Nov	47	93 4	70 5	120 5	8 9
8	NR						28-Oct					
9	NR						26-Oct	76	105 5	89 0	124 0	8 1
10	31-Aug	153	102 1	86 0	136 5	8 1	NR					
11	NR						23-Oct	106	99 8	79 0	120 0	8 2
13	NR						17-Nov	147	110 2	84 0	139 0	14 2
14	NR						NR					
15	21-Sep	118	91 7	69 5	108 5	8 0	NR					
16	14-Sep	121	83 3	57 5	108 0	8 7	15-Nov	119	100 4	63 5	128 0	10 4
All farms		637	94 2	57 5	136 5	10 7		925	102 9	67 0	139 0	11 6
Year 1993												
1	04-Sep	130	100 5	77 5	118 5	8 5	NR					
2	NR						NR					
3	10-Sep	134	95 9	76 0	117 0	7 3	02-Nov	133	104 2	78 0	124 0	7 5
4	09-Sep	62	102 5	83 0	122 0	8 0	NR					
5	NR						NR					
6	16-Sep	117	94 2	68 5	125 0	9 4	NR					
7	28-Aug	51	88 0	76 0	111 5	6 4	17-Nov	51	100 1	87 5	126 0	7 3
8	02-Sep	186	97 0	77 0	117 0	7 2	NR					
9	29-Sep	103	107 0	91 0	124 0	8 0	05-Nov	103	115 2	95 0	136 0	9 0
10	01-Sep	145	104 5	89 0	135 5	7 6		145	117 1	93 0	156 5	9 5
11	02-Sep	102	95 4	80 0	112 0	7 0	NR					
13	02-Sep	118	98 2	81 0	130 0	9 6	NR					
15	09-Sep	123	97 1	78 0	123 0	10 0	NR					
16	05-Oct	132	97 2	77 5	120 5	8 8	17-Nov	132	107 3	85 0	133 0	9 7
All farms		1403	98 4	68 5	135 5	9 3		564	109 9	78 0	156 5	10 7
All hinds combined		2040	97 1	57 5	136 5	9 9		1489	105 7	67 0	156 5	11 5

Note Farm 14 was not surveyed in 1993

Min = minimum, Max = maximum, SD = standard deviation, NR = not recorded by the farmer

Appendix 3.34 : Summary distributions of pre-mating, pre-calving and weaning body condition scores of adult hinds mated on each survey farm in 1992 and March 1993.

Farm code	Date	Number of hinds	Number of hinds of each score									Mean score	SD
			1	1 5	2	2 5	3	3 5	4	4 5	5		
Pre-mating condition score March 1992													
1	17-Mar	107	-	1	8	17	29	28	24	-	-	3 19	0 62
2	02-Mar	104	-	-	3	24	41	63	16	-	-	3 22	0 48
3	04-Mar	126	-	-	-	6	17	56	42	5	-	3 59	0 44
4	26-Feb	76	-	-	3	22	30	15	6	-	-	2 99	0 49
5	12-Mar	78	2	1	3	7	21	24	19	1	-	3 26	0 69
6	19-Mar	117	4	8	14	17	28	25	19	1	1	2 94	0 84
7	24-Mar	52	-	2	7	2	18	12	11	-	-	3 12	0 70
8	18-Mar	100	-	-	-	-	14	33	45	8	-	3 74	0 42
9	10-Mar	86	-	-	3	5	22	32	21	3	-	3 42	0 54
11	03-Mar	115	-	-	8	13	26	47	20	1	-	3 27	0 57
13	11-Mar	128	-	-	2	7	34	46	36	3	-	3 45	0 50
14	09-Mar	133	-	-	-	7	25	40	47	13	1	3 64	0 53
15	23-Mar	138	1	5	19	20	50	22	17	4	-	2 97	0 72
All farms		1023	7	17	67	116	275	443	215	18	1	3 23	0 66
Pre-calving condition score September 1992													
1	02-Sep	131	-	-	1	11	27	42	42	8	-	3 52	0 54
2	30-Sep	205	1	11	48	64	52	19	10	-	-	2 61	0 61
3	15-Sep	140	-	-	1	6	30	41	54	8	-	3 59	0 51
4	17-Sep	62	-	4	4	9	21	18	6	-	-	3 01	0 64
5	09-Sep	65	-	-	3	4	16	19	23	-	-	3 42	0 56
6	05-Oct	99	-	7	21	32	30	8	1	-	-	2 57	0 55
7	14-Sep	48	-	-	-	1	10	14	19	4	-	3 66	0 48
8	08-Sep	206	1	3	17	25	55	56	46	3	-	3 21	0 67
9	24-Sep	76	-	-	4	9	26	18	18	1	-	3 26	0 58
10	10-Sep	144	1	-	1	5	22	34	48	31	2	3 76	0 63
11	07-Sep	109	-	3	7	9	30	31	28	1	-	3 27	0 65
13	24-Sep	118	-	-	5	13	33	28	32	7	-	3 38	0 62
14	28-Sep	156	-	2	5	14	40	39	40	14	2	3 45	0 58
15	21-Sep	121	3	6	11	23	30	30	18	-	-	2 96	0 75
16	09-Sep	119	3	3	10	16	41	27	17	1	1	3 05	0 72
All farms		1232	7	23	68	138	316	310	402	61	3	3 30	0 70
Weaning body condition score March 1993													
1	24-Mar	115	-	3	17	20	25	20	22	8	-	3 11	0 79
2	23-Mar	133	-	-	7	12	36	24	37	17	-	3 46	0 69
3	16-Mar	136	-	6	22	32	30	23	18	5	-	2 93	0 76
4	15-Mar	61	-	1	1	7	12	19	15	5	1	3 46	0 67
5	03-Mar	65	-	4	11	23	23	3	1	-	-	2 60	0 51
6	18-Mar	108	-	5	11	17	34	16	21	3	1	3 08	0 76
7	22-Mar	47	-	1	2	6	10	12	13	3	-	3 36	0 69
8	10-Mar	184	1	2	3	8	28	44	64	29	5	3 69	0 68
9	08-Mar	77	-	-	5	8	23	15	20	6	-	3 36	0 67
10	30-Mar	144	-	1	3	8	32	25	41	24	10	3 70	0 73
11	02-Mar	107	-	1	6	16	27	29	19	9	-	3 29	0 68
13	06-Apr	145	1	3	21	34	43	24	13	6	-	2 93	0 70
15	06-Apr	99	-	3	3	7	13	17	33	19	4	3 68	0 79
16	25-Mar	94	-	2	4	10	18	16	32	11	1	3 49	0 75
All farms		1515	2	32	116	208	354	287	349	145	22	3 32	0 78

SD = standard deviation

Appendix 3.35 : Summary distributions of pre-mating, pre-calving and weaning body condition scores of adult hinds mated on each survey farm in 1993 and March 1994.

Farm code	Date	Number of hinds	Number of hinds of each score									Mean score	SD
			1	1 5	2	2 5	3	3 5	4	4 5	5		
Pre-mating condition score March 1993													
1	24-Mar	135	-	5	22	25	29	22	24	8	-	3 04	0 80
2	23-Mar	153	-	-	10	18	43	27	38	17	-	3 38	0 70
3	16-Mar	138	-	6	24	32	30	23	18	5	-	2 91	0 76
4	15-Mar	64	-	1	5	7	16	15	15	5	-	3 31	0 72
5	03-Mar	65	-	3	9	23	25	3	2	-	-	2 67	0 51
6	18-Mar	144	-	5	15	22	43	23	30	5	1	3 12	0 75
7	22-Mar	63	-	1	5	9	16	15	13	4	-	3 25	0 71
8	10-Mar	185	-	1	7	13	31	47	61	23	2	3 58	0 67
9	08-Mar	106	-	-	10	10	29	21	28	8	-	3 33	0 70
10	30-Mar	151	-	-	3	11	34	29	46	22	6	3 64	0 68
11	02-Mar	107	-	1	6	16	27	29	19	9	-	3 29	0 68
13	06-Apr	175	1	5	30	41	52	25	15	6	-	2 87	0 71
15	06-Apr	145	1	3	6	18	23	28	41	21	4	3 50	0 81
16	25-Mar	110	-	6	14	14	18	16	31	11	-	3 23	0 88
All farms		1741	2	37	166	259	416	323	381	144	13	3 25	0 78
Pre-calving condition score September 1993													
1	15-Sep	130	-	3	9	12	26	26	35	18	1	3 44	0 78
2	31-Aug	180	-	-	-	1	12	46	77	42	2	3 93	0 45
3	13-Sep	134	-	1	7	19	55	21	26	5	-	3 19	0 62
4	31-Aug	62	-	-	1	3	13	21	17	7	-	3 57	0 56
5	14-Sep	58	-	1	5	15	19	10	6	1	1	3 01	0 67
6	16-Sep	117	-	-	7	16	41	30	18	5	-	3 22	0 60
7	05-Sep	51	-	-	-	2	11	15	19	4	-	3 62	0 50
8	20-Sep	178	1	13	37	50	47	11	19	-	-	2 67	0 69
9	21-Sep	102	-	-	3	5	26	19	29	16	4	3 64	0 69
10	02-Sep	143	-	-	-	11	31	33	31	28	9	3 71	0 69
11	08-Sep	102	-	2	7	21	41	17	12	2	-	3 03	0 60
13	07-Sep	111	-	-	1	5	38	25	26	14	2	3 54	0 61
15	09-Sep	123	-	1	5	9	36	13	23	28	8	3 62	0 82
16	01-Sep	130	-	1	2	4	21	36	31	28	7	3 77	0 68
All farms		1621	1	22	84	173	417	323	369	198	34	3 43	0 75
Weaning body condition score March 1994													
1	08-Mar	119	-	2	21	21	29	14	23	8	1	3 08	0 81
2	10-Mar	177	-	-	19	29	55	15	42	14	3	3 24	0 77
3	11-Mar	134	-	-	18	37	46	11	19	3	-	2 94	0 64
4	02-Mar	61	-	2	8	6	18	16	9	2	-	3 10	0 71
5	23-Mar	53	-	3	9	18	15	3	4	1	-	2 71	0 65
6	31-Mar	114	1	10	32	28	29	5	7	2	-	2 56	0 70
7	24-Mar	48	1	1	13	16	12	2	2	1	-	2 58	0 64
8	07-Mar	32	-	-	5	3	9	3	9	1	2	3 30	0 85
9	07-Mar	100	-	-	7	12	29	17	26	8	1	3 36	0 70
10	03-Mar	143	1	7	27	26	31	13	21	14	3	3 01	0 92
11	09-Mar	96	-	-	15	21	33	11	14	2	-	2 97	0 66
13	22-Mar	121	-	5	21	40	37	10	7	1	-	2 71	0 60
15	09-Mar	121	1	-	6	14	30	10	34	19	7	3 55	0 83
16	30-Mar	125	1	3	11	27	38	12	20	8	5	3 14	0 84
All farms		1444	5	33	212	298	411	142	237	84	22	3 04	0 80

SD = standard deviation

Appendix 3.36 : Summary distributions of pre-mating, pre-calving and weaning body condition scores of yearling hinds mated on each survey farm in 1992 and March 1993.

Farm code	Date	Number of hinds	Number of hinds of each score									Mean score	SD
			1	1 5	2	2 5	3	3 5	4	4 5	5		
Pre-mating condition score March 1992													
1	17-Mar	35	-	-	2	1	13	11	8	-	-	3 31	0 52
2	02-Mar	17	-	-	-	1	3	8	5	-	-	3 50	0 42
3	04-Mar	2	-	-	-	-	1	1	-	-	-	3 25	0 25
4	26-Feb	14	-	-	1	6	7	-	-	-	-	2 71	0 31
5	12-Mar	9	-	-	-	-	4	4	1	-	-	3 33	0 33
6	19-Mar	44	-	-	-	3	13	14	13	1	-	3 45	0 49
7	24-Mar	21	-	-	1	4	7	7	2	-	-	3 12	0 51
8	18-Mar	33	-	-	-	-	7	9	17	-	-	3 65	0 40
9	10-Mar	34	-	-	-	2	2	12	17	1	-	3 69	0 44
11	03-Mar	1	-	-	-	-	1	-	-	-	-	3 00	
13	11-Mar	48	-	-	1	7	13	21	6	-	-	3 25	0 48
15	23-Mar	43	-	-	1	1	11	14	14	2	-	3 52	0 52
All farms		301	-	-	6	25	82	101	83	4	-	3 40	0 52
Pre-calving condition score September 1992													
1	02-Sep	22	-	-	-	-	5	9	8	-	-	3 57	0 38
2	30-Sep	20	-	-	-	-	6	10	3	1	-	3 48	0 40
3	15-Sep	2	-	-	-	-	1	1	-	-	-	3 25	0 25
4	17-Sep	14	1	2	2	5	4	-	-	-	-	2 32	0 62
5	09-Sep	10	-	-	1	-	7	2	-	-	-	3 00	0 39
6	05-Oct	39	-	1	7	7	18	5	1	-	-	2 78	0 54
7	14-Sep	16	-	-	1	1	5	6	3	-	-	3 28	0 53
8	08-Sep	31	-	-	-	-	3	9	15	4	-	3 82	0 41
9	24-Sep	31	-	-	-	1	10	9	7	4	-	3 55	0 54
10	10-Sep	22	-	-	-	2	7	5	8	-	-	3 43	0 51
13	24-Sep	46	-	-	2	5	16	12	10	1	-	3 28	0 57
15	21-Sep	47	-	-	2	6	18	13	8	-	-	3 20	0 52
16	09-Sep	40	-	4	9	8	16	3	-	-	-	2 56	0 57
All farms		340	1	7	24	35	116	84	63	10	-	3 19	0 66
Weaning body condition score March 1993													
1	24-Mar	19	-	2	5	4	4	2	2	-	-	2 63	0 74
2	23-Mar	20	-	-	3	6	7	3	1	-	-	2 83	0 53
3	16-Mar	2	-	-	2	-	-	-	-	-	-	2 00	-
4	15-Mar	14	-	-	4	2	5	1	2	-	-	2 82	0 67
5	03-Mar	12	-	-	2	6	4	-	-	-	-	2 58	0 34
6	18-Mar	36	-	-	4	5	8	8	9	2	-	3 26	0 71
7	22-Mar	16	-	-	3	3	6	3	-	1	-	2 91	0 64
8	10-Mar	25	-	-	5	7	7	4	2	-	-	2 82	0 60
9	08-Mar	31	-	-	6	2	7	6	8	2	-	3 23	0 78
10	30-Mar	22	-	-	1	3	4	6	6	2	-	3 43	0 66
13	06-Apr	30	-	2	9	7	10	1	1	-	-	2 53	0 58
15	06-Apr	45	1	-	3	11	9	11	8	2	-	3 13	0 73
16	25-Mar	37	-	4	12	4	3	2	7	5	-	2 88	1 04
All farms		309	1	8	59	60	74	47	46	14	0	2 96	0 77

SD = standard deviation

Note No yearling hinds were monitored on farm 14

Appendix 3.37 : Summary distributions of pre-mating, pre-calving and weaning body condition scores of yearling hinds mated on each survey farm in 1993 and March 1994.

Farm code	Date	Number of hinds	Number of hinds of each score									Mean score	SD
			1	1 5	2	2 5	3	3 5	4	4 5	5		
Pre-mating condition score March 1993													
1	24-Mar	41	-	-	-	4	15	11	10	1	-	3 37	0 51
2	23-Mar	25	-	-	-	-	7	11	7	-	-	3 50	0 37
3	16-Mar	17	-	-	-	1	6	7	3	-	-	3 35	0 41
4	15-Mar	12	-	-	-	-	5	4	3	-	-	3 42	0 40
5	03-Mar	6	-	-	-	1	2	1	2	-	-	3 33	0 55
6	18-Mar	26	-	-	-	3	8	5	9	1	-	3 44	0 56
7	22-Mar	10	-	-	-	-	6	3	1	-	-	3 25	0 34
8	10-Mar	56	-	-	1	3	18	20	13	1	-	3 39	0 49
9	08-Mar	47	-	-	-	-	4	12	26	5	-	3 84	0 39
10	30-Mar	34	-	-	-	-	8	11	12	3	-	3 65	0 46
11	02-Mar	1	-	-	1	-	-	-	-	-	-	2 00	
13	06-Apr	39	-	-	5	11	12	8	3	-	-	2 91	0 56
15	06-Apr	72	-	-	-	7	26	16	18	5	-	3 42	0 56
16	25-Mar	40	-	-	2	4	14	11	8	1	-	3 28	0 57
All farms		426	-	-	9	34	131	120	115	17	-	3 41	0 55
Pre-calving condition score September 1993													
1	15-Sep	34	-	-	1	3	11	7	10	2	-	3 41	0 60
2	31-Aug	20	-	-	-	-	2	9	8	1	-	3 70	0 37
3	13-Sep	17	-	-	1	8	6	1	1	-	-	2 79	0 46
4	31-Aug	12	-	-	-	-	2	2	6	2	-	3 83	0 47
5	14-Sep	7	-	-	1	2	2	1	1	-	-	2 93	0 62
6	16-Sep	26	-	1	4	9	9	1	2	-	-	2 71	0 57
7	05-Sep	3	-	-	-	1	1	1	-	-	-	3 00	0 41
8	20-Sep	30	-	1	2	5	12	3	7	-	-	3 08	0 66
9	21-Sep	47	-	-	3	2	17	8	13	4	-	3 40	0 65
10	02-Sep	32	-	-	3	3	13	4	9	-	-	3 20	0 62
11	08-Sep	1	-	-	-	-	1	-	-	-	-	3 00	
13	07-Sep	19	-	-	-	1	4	4	8	2	-	3 66	0 54
15	09-Sep	75	-	2	2	17	26	14	12	2	-	3 11	0 63
16	01-Sep	34	-	1	2	4	20	6	1	-	-	2 96	0 48
All farms		357	-	5	19	55	126	61	78	13	-	3 21	0 65
Weaning body condition score March 1994													
1	08-Mar	33	-	7	9	10	3	-	2	1	1	2 42	0 86
2	10-Mar	20	-	2	7	6	2	-	2	1	-	2 53	0 80
3	11-Mar	18	-	1	3	6	5	1	2	-	-	2 72	0 65
4	02-Mar	12	-	3	4	2	-	2	1	-	-	2 38	0 82
5	23-Mar	8	-	-	3	2	1	-	2	-	-	2 75	0 79
6	31-Mar	26	-	-	4	7	8	4	2	1	-	2 92	0 65
7	24-Mar	2	-	1	1	-	-	-	-	-	-	1 75	0 25
8	07-Mar	27	-	3	9	9	4	1	-	1	-	2 41	0 64
9	07-Mar	37	-	1	5	11	11	3	4	2	-	2 91	0 72
10	03-Mar	30	2	3	9	9	3	2	2	-	-	2 37	0 74
11	09-Mar	3	-	-	-	1	2	-	-	-	-	2 83	0 24
13	22-Mar	19	-	3	11	3	2	-	-	-	-	2 11	0 42
15	09-Mar	73	-	2	22	21	9	8	9	2	-	2 73	0 76
16	30-Mar	36	1	1	5	7	12	7	3	-	-	2 85	0 69
All farms		344	3	27	92	94	62	28	29	8	1	2 63	0 76

SD = standard deviation

Note No yearling hinds were monitored on farm 14

Appendix 3.41 : Means, ranges and standard deviations of individual bodyweights (kg) of weaner hinds calculated monthly on each survey farm in 1992.

Date		Farm code														
		1	2	3	4	5	6	7	8	9	10	11	13	14	15	16
April 1	N	43	75	25	33	27	NR	19	54	40	77	NR	82	136	NR	NR
1992	Mean	46 4	45 6	48 1	49 7	44 0		38 3	52 0	45 7	47 7		48 5	46 5		
	Min	29 2	29 1	39 5	40 8	28 6		30 1	38 2	34 1	32 7		32 9	31 5		
	Max	57 1	55 9	55 3	60 2	60 5		46 7	63 1	62 1	56 1		62 9	64 5		
	SD	6 3	5 6	4 4	4 7	7 5		5 4	7 0	7 0	4 4		6 0	7 1		
May 1	N	43	NR	25	33	32	52	31	62	40	78	NR	82	139	70	NR
	Mean	50 2		53 2	54 4	45 9	47 5	44 3	54 8	52 6	51 0		52 1	48 5	48 0	
	Min	32 2		43 5	44 3	29 0	31 9	31 5	41 1	39 9	35 2		37 0	8 7	32 5	
	Max	62 1		62 3	64 1	64 7	58 9	51 0	65 7	73 0	59 2		66 5	67 4	61 4	
	SD	6 6		4 6	4 7	7 2	5 5	4 9	6 9	7 9	4 6		6 7	8 4	6 9	
June 1	N	43	NR	32	33	27	31	8	54	59	35	59	74	136	55	NR
	Mean	53 3		50 0	59 3	47 0	48 2	46 5	58 3	55 0	56 4	51 1	51 8	51 8	45 8	
	Min	38 0		28 0	48 9	28 3	31 4	33 9	44 6	43 5	37 8	32 3	36 8	37 0	32 5	
	Max	64 0		63 5	70 6	69 0	58 4	52 7	67 9	73 0	62 8	62 4	63 3	70 0	59 3	
	SD	6 2		9 2	5 1	8 1	5 9	6 4	6 5	6 4	4 0	5 3	5 8	6 4	5 7	
July 1	N	43	NR	32	33	30	34	19	55	60	35	60	74	NR	55	50
	Mean	54 5		50 4	60 7	47 8	47 2	46 8	58 9	57 2	58 1	51 4	51 6		44 2	48 3
	Min	39 8		27 7	52 6	28 0	31 6	34 6	45 7	45 8	41 6	36 2	37 4		29 8	38 5
	Max	64 9		63 4	71 5	70 8	58 3	55 7	67 6	74 1	65 1	64 6	63 5		57 7	58 0
	SD	5 7		9 0	4 7	8 3	6 0	5 3	6 0	6 1	3 9	4 8	5 6		5 4	4 6
August 1	N	43	NR	32	33	30	34	19	55	60	35	6	74	NR	55	50
	Mean	56 8		50 7	62 1	48 8	47 8	47 4	59 5	59 0	58 8	46 4	53 0		45 3	50 0
	Min	42 2		27 4	55 7	28 0	33 7	35 3	46 8	47 2	44 6	37 7	40 0		30 6	39 6
	Max	66 6		63 2	72 5	70 5	59 5	58 8	69 2	76 1	65 7	65 0	65 5		58 7	58 8
	SD	5 7		8 8	4 5	8 6	6 0	5 8	5 8	6 0	3 6	8 8	6 3		5 3	4 5
Sept 1	N	42	NR	30	33	33	26	8	56	59	35	6	45	NR	51	49
	Mean	59 2		51 7	64 4	50 8	50 3	50 9	60 4	60 9	59 6	48 4	59 5		46 4	51 8
	Min	44 8		27 4	58 2	30 0	34 3	36 0	47 0	48 7	46 4	40 8	45 3		29 0	40 8
	Max	69 2		63 4	74 4	70 5	60 7	61 9	71 0	78 1	65 9	66 8	69 3		59 8	59 6
	SD	5 8		8 4	4 5	7 7	5 8	8 2	5 8	6 0	3 5	8 6	4 1		5 7	4 5
Oct 1	N	46	75	30	33	NR	34	8	54	59	35	6	45	NR	54	49
	Mean	61 9	60 3	53 7	67 5		49 1	53 8	63 9	62 7	63 8	52 2	61 9		49 1	54 4
	Min	40 5	46 6	28 5	60 5		34 0	39 6	49 8	50 1	52 1	44 7	49 0		30 3	43 0
	Max	73 8	78 7	65 8	77 3		61 8	63 7	74 2	80 2	70 8	70 2	73 2		62 1	62 4
	SD	6 5	5 9	8 4	4 7		6 4	8 0	5 8	5 9	3 5	8 4	4 1		5 8	4 7
Nov 1	N	57	NR	30	33	NR	26	8	54	59	35	6	45	NR	54	49
	Mean	71 3		57 3	70 8		54 2	57 8	67 8	66 9	70 0	56 4	65 0		55 1	59 7
	Min	53 0		31 7	60 5		37 9	45 2	52 9	54 5	59 9	48 7	52 4		37 4	48 3
	Max	103 4		71 4	83 5		62 8	64 9	77 7	86 7	78 2	73 8	77 2		68 7	70 5
	SD	9 3		8 5	5 3		5 7	7 2	5 9	6 0	3 8	8 2	4 2		5 7	4 9
Dec 1	N	42	NR	30	33	NR	25	8	54	59	35	6	45	NR	54	50
	Mean	72 5		62 3	76 7		59 4	61 6	71 6	72 4	74 9	59 5	68 0		60 9	65 0
	Min	56 0		34 6	68 2		42 6	50 6	55 8	60 5	65 5	51 7	55 8		44 3	53 5
	Max	86 2		77 2	88 8		69 1	68 4	82 5	93 5	83 8	76 7	81 1		75 5	77 5
	SD	6 5		9 0	5 8		6 1	6 7	6 2	6 3	4 1	8 2	4 4		5 9	5 2
Jan 1	N	42	NR	30	33	NR	25	8	54	59	35	6	45	NR	54	50
1993	Mean	76 3		67 7	82 4		65 2	65 6	75 5	78 5	79 1	62 7	71 1		66 9	70 5
	Min	59 1		37 6	72 1		47 6	53 3	58 9	66 4	69 4	54 7	59 2		51 4	58 9
	Max	90 4		83 1	94 2		77 6	72 9	88 1	100 9	88 4	79 7	85 1		82 4	83 0
	SD	6 7		9 8	6 5		6 6	6 6	6 5	6 7	4 7	8 3	4 7		6 3	5 5
Feb 1	N	42	NR	30	33	NR	26	8	54	59	35	6	47	NR	64	51
	Mean	80 1		73 0	86 4		71 5	67 4	79 4	82 4	84 3	65 9	74 5		70 3	74 6
	Min	62 2		40 4	77 0		52 8	54 3	61 9	69 4	73 3	57 7	62 1		55 1	62 2
	Max	94 7		90 3	99 6		85 4	74 8	93 8	107 5	94 0	82 7	88 5		88 3	88 0
	SD	7 0		10 5	6 4		7 0	6 6	6 9	7 0	5 0	8 3	4 9		6 2	6 0
March 1	N	42	NR	30	33	NR	26	8	56	60	35	5	47	NR	64	51
	Mean	83 5		77 7	89 7		75 7	67 1	80 2	85 6	89 1	68 9	77 7		72 0	76 1
	Min	65 0		42 9	80 0		58 0	54 1	61 9	72 0	76 8	59 1	64 4		57 6	62 7
	Max	98 6		97 8	104 0		88 3	74 6	94 5	113 0	99 2	84 8	91 7		90 9	91 2
	SD	7 3		11 1	6 5		7 1	6 6	6 9	7 2	5 3	9 0	5 3		6 4	6 1

N = number of deer; Min = minimum value, Max = maximum value, SD = standard deviation, NR = not recorded

Appendix 3.42 : Means, ranges and standard deviations of individual bodyweights (kg) of weaner hinds calculated monthly on each survey farm in 1993.

Date		Farm code													
		1	2	3	4	5	6	7	8	9	10	11	13	15	16
April 1	N	60	91	50	41	30	63	8	96	46	86	47	84	58	61
1993	Mean	46 0	39 3	43 8	49 2	46 6	40 1	54 4	45 7	46 8	50 5	49 8	44 3	40 3	43 6
	Min	28 7	27 3	29 4	25 8	37 3	23 5	47 5	26 0	28 1	36 5	38 4	29 1	20 4	19 9
	Max	64 0	47 5	54 1	59 7	57 3	52 5	59 1	57 5	63 2	61 7	59 4	58 1	52 9	57 4
	SD	7 3	4 3	5 5	6 6	4 3	6 2	4 1	5 6	7 5	5 1	5 2	5 7	7 2	7 1
May 1	N	60	NR	32	41	23	63	32	35	46	86	47	87	57	61
	Mean	50 0		47 6	55 8	51 1	42 6	44 2	55 1	50 6	53 9	51 3	45 3	44 9	45 4
	Min	30 2		31 0	28 8	42 5	27 6	21 5	37 2	29 0	39 9	38 3	28 0	33 4	19 8
	Max	68 5		58 3	67 7	60 9	57 4	65 4	63 1	68 9	65 5	61 0	61 7	56 6	60 1
	SD	7 5		6 9	7 0	4 2	6 1	10 6	5 7	7 7	5 6	5 4	6 3	5 6	6 9
June 1	N	59	91	32	41	28	30	8	35	63	39	47	39	58	61
	Mean	54 4	44 0	48 3	59 6	53 0	46 0	63 4	55 6	54 5	58 4	52 9	44 5	49 0	47 2
	Min	31 6	31 8	34 0	29 1	44 9	30 8	55 3	39 0	42 3	40 7	39 2	32 6	39 1	19 6
	Max	73 7	51 0	58 0	71 4	62 5	60 4	70 2	64 3	71 9	67 2	62 7	65 8	60 4	62 9
	SD	7 8	4 2	6 6	7 6	4 3	7 8	5 3	5 3	5 8	6 9	5 4	6 9	5 2	6 8
July 1	N	59	NR	32	40	27	30	8	35	74	39	47	5	56	61
	Mean	55 7		48 4	61 9	57 2	48 1	64 3	56 1	58 0	59 9	54 7	64 2	51 6	49 1
	Min	34 2		36 1	44 9	48 4	33 3	56 4	39 9	45 7	41 0	42 1	59 9	40 5	19 7
	Max	75 3		57 3	73 9	66 3	62 3	70 8	65 4	73 7	68 9	64 4	70 6	62 5	65 6
	SD	7 6		6 0	5 5	4 7	7 4	5 4	5 3	5 9	7 4	5 3	4 6	4 9	6 9
August 1	N	59	NR	32	40	16	30	8	35	74	39	47	5	56	61
	Mean	57 1		50 7	64 5	64 7	50 3	65 2	56 6	61 3	61 3	56 5	68 0	53 0	51 8
	Min	37 0		38 2	47 3	59 7	35 9	57 5	40 8	48 9	41 0	45 0	63 1	41 1	27 1
	Max	76 9		59 5	76 9	71 0	64 4	71 6	66 5	76 7	70 5	66 2	75 7	64 7	68 0
	SD	7 6		5 7	5 6	3 5	7 1	5 5	5 5	5 9	8 0	5 3	5 1	5 0	6 5
Sept 1	N	59	NR	33	40	16	30	8	35	74	30	47	5	56	61
	Mean	58 5		52 5	67 1	67 7	53 0	66 7	57 0	64 5	67 0	58 4	71 8	54 5	54 6
	Min	39 7		40 4	49 8	61 9	39 1	58 5	41 8	52 2	61 2	47 9	66 3	41 8	34 5
	Max	78 6		61 2	79 8	74 6	66 8	73 8	67 7	81 4	72 1	67 9	80 7	68 1	70 5
	SD	7 6		5 5	5 8	3 9	6 8	5 6	5 9	6 0	2 9	5 4	5 6	5 4	6 4
Oct 1	N	49	NR	32	38	16	30	8	35	74	30	46	5	64	61
	Mean	61 4		56 5	71 3	70 6	57 2	72 1	60 8	67 7	71 2	62 2	75 5	59 7	57 2
	Min	44 5		44 0	53 9	64 1	44 1	62 1	45 9	55 2	66 0	50 4	69 4	46 2	41 7
	Max	72 7		65 5	85 3	78 2	70 5	79 5	71 1	86 0	76 6	71 9	85 5	73 2	72 9
	SD	6 1		5 5	6 1	4 4	6 5	5 9	5 7	6 2	3 0	5 7	6 1	5 5	6 3
Nov 1	N	49	NR	32	38	16	30	8	35	40	30	46	5	64	61
	Mean	66 5		61 8	76 0	73 6	61 6	77 7	66 0	71 8	75 5	66 2	82.0	65 8	61 9
	Min	49 7		48 1	58 2	66 3	48 6	65 9	51 4	58 6	70 0	54 0	75 2	52 2	47 5
	Max	78 7		71 6	91 1	81 8	74 4	85 4	75 6	90 9	82 3	76 9	93 3	81 2	77 0
	SD	6 4		5 9	6 3	4 8	6 2	6 3	5 3	6 6	3 4	5 8	6 6	5 5	6 7
Dec 1	N	49	NR	32	38	7	30	8	35	40	30	46	5	68	61
	Mean	71 4		67 4	80 6	75 6	65 9	83 1	71 0	76 5	81 4	70 1	88 9	71 8	66 0
	Min	54 7		51 5	62 3	69 0	52 9	69 6	56 7	63 0	76 5	57 5	81 5	58 0	50 9
	Max	84 5		76 5	96 7	84 7	78 2	91 2	80 5	95 6	89 6	81 9	101 4	89 0	80 9
	SD	6 8		6 3	6 7	5 5	6 1	6 7	5 2	6 7	3 5	6 1	7 1	6 0	7 0
Jan 1	N	49	NR	32	38	7	30	8	35	40	30	46	5	63	60
1994	Mean	76 2		73 1	84 4	77 8	69 1	86 9	76 2	81 4	85 4	73 6	96 0	73 7	67 9
	Min	59 4		55 0	66 2	71 1	56 0	72 4	62 2	67 4	80 4	60 9	88 0	59 9	52 9
	Max	90 0		83 9	100 9	87 4	80 7	95 5	85 6	100 5	96 0	86 4	109 8	90 6	83 1
	SD	7 2		6 8	6 9	5 9	6 0	7 0	5 3	6 9	3 9	6 3	7 6	6 0	7 0
Feb 1	N	49	NR	32	38	7	30	8	NR	40	30	46	5	63	60
	Mean	78 7		75 9	87 6	79 9	69 1	87 5		86 3	87 3	76 7	97 6	75 7	69 9
	Min	62 2		57 1	69 7	70 9	56 0	73 7		71 9	81 0	64 3	88 0	61 8	54 9
	Max	92 9		86 3	105 0	90 1	79 6	96 9		105 4	100 5	90 4	111 7	92 2	85 2
	SD	7 4		7 1	7 2	6 4	5 8	6 9		7 2	4 3	6 5	8 0	6 2	7 0
March 1	N	49	NR	32	38	7	30	8	NR	40	30	46	5	63	60
	Mean	81 0		77 3	90 6	81 9	69 2	88 0		90 7	87 7	79 5	98 3	77 5	71 7
	Min	64 6		58 6	72 9	70 7	56 0	74 9		76 0	81 0	67 3	89 0	63 5	56 8
	Max	95 6		87 8	109 4	92 5	79 2	98 2		109 9	101 3	94 8	112 5	95 1	87 4
	SD	7 6		7 2	7 5	7 0	5 9	6 9		7 4	4 3	6 8	8 0	6 6	7 0

N = number of deer; Min = minimum value, Max = maximum value, SD = standard deviation, NR = not recorded

Appendix 3.43 : Means, ranges and standard deviations of individual bodyweights (kg) of weaner stags calculated monthly on each survey farm in 1992.

Date		Farm code														
		1	2	3	4	5	6	7	8	9	10	11	13	14	15	16
April 1	N	45	53	23	39	29	NR	18	82	33	86	NR	85	119	NR	NR
1992	Mean	48 1	52 4	50 5	52 0	48 7		43 0	55 2	51 4	51 8		52 3	49 8		
	Min	30 1	29 6	43 0	33 7	29 6		36 0	36 2	34 9	35 4		30 9	36 6		
	Max	59 2	61 4	55 4	66 1	60 0		51 1	66 3	63 4	67 0		66 4	63 9		
	SD	7 8	6 2	3 5	6 6	7 7		4 4	6 7	7 3	6 7		6 9	5 5		
May 1	N	45	NR	24	39	34	NR	33	82	33	92	NR	35	120	80	NR
	Mean	51 9		54 6	58 5	50 2		48 5	60 1	59 2	54 6		57 7	53 2	54 1	
	Min	32 1		46 6	39 8	32 9		31 4	42 7	41 6	37 0		36 3	26 1	26 5	
	Max	65 1		61 3	72 8	61 7		63 4	76 1	73 5	70 4		70 5	67 4	67 9	
	SD	8 5		3 8	7 4	8 0		7 1	7 2	8 0	7 3		9 6	5 7	8 0	
June 1	N	45	NR	32	39	29	NR	31	77	33	30	68	84	119	70	NR
	Mean	55 4		51 1	64 4	53 1		51 1	63 4	61 7	63 7	55 8	56 7	57 1	51 4	
	Min	34 0		32 0	43 3	33 7		41 8	47 2	44 0	38 7	37 0	36 0	44 6	37 1	
	Max	68 0		62 0	79 3	65 6		58 9	82 0	75 3	73 9	67 1	70 5	71 0	71 8	
	SD	8 5		8 9	7 9	8 9		4 7	7 6	7 5	7 2	7 0	6 8	5 2	7 0	
July 1	N	45	NR	32	39	35	31	31	79	33	30	68	33	121	70	46
	Mean	57 5		51 5	67 5	54 0	49 8	52 6	65 1	64 3	67 1	58 7	68 6	60 7	49 3	51 0
	Min	35 8		33 1	48 0	34 0	28 9	44 8	49 1	46 9	42 1	39 6	45 6	47 5	36 3	34 6
	Max	69 8		62 3	81 2	67 7	60 7	59 2	84 0	77 9	78 1	71 9	82 2	74 5	75 6	63 6
	SD	8 3		8 9	7 8	9 1	8 0	4 1	7 5	7 4	7 4	6 8	10 5	5 4	7 4	6 7
August 1	N	45	NR	32	39	35	31	31	79	33	30	68	33	121	70	46
	Mean	61 8		51 8	70 5	54 4	51 5	54 2	66 8	67 2	69 9	60 9	69 5	60 7	50 8	53 6
	Min	37 6		34 3	52 6	34 5	31 8	46 8	50 5	49 0	45 7	42 2	45 9	47 5	38 0	37 9
	Max	74 9		62 6	83 1	69 5	63 0	59 5	85 9	81 3	81 1	74 5	82 7	74 5	73 1	68 7
	SD	8 8		9 0	7 8	8 6	7 7	3 8	7 6	7 6	7 3	6 6	9 8	5 4	7 1	7 0
Sept 1	N	45	NR	28	39	40	30	31	82	32	30	68	31	NR	58	44
	Mean	66 6		53 6	76 0	56 0	53 2	55 8	68 9	70 9	72 2	64 1	70 2		53 2	56 8
	Min	39 2		35 6	58 3	37 0	34 8	48 0	52 0	53 8	48 6	45 8	46 3		38 6	41 3
	Max	80 3		62 4	89 5	70 0	65 4	60 5	88 0	84 8	83 2	77 8	84 8		70 6	74 3
	SD	9 5		8 0	7 9	8 3	7 8	3 6	7 7	7 2	7 2	6 5	9 8		7 1	7 1
Oct 1	N	46	53	28	39	NR	31	32	44	32	30	68	31	NR	61	45
	Mean	72 0	72 6	57 1	83 3		54 9	60 0	68 4	73 9	79 9	69 4	72 1		57 3	60 7
	Min	40 0	53 8	38 1	65 0		37 6	52 6	54 8	57 2	55 0	51 5	48 6		40 8	42 8
	Max	88 7	83 9	66 4	98 6		67 7	66 1	81 0	88 2	92 0	82 0	88 3		71 7	79 9
	SD	10 5	6 3	7 9	8 3		7 6	3 7	6 4	7 4	7 5	6 4	9 7		7 2	7 9
Nov 1	N	61	NR	28	NR	NR	32	32	44	32	30	68	31	NR	61	45
	Mean	83 7		62 7			59 3	66 4	73 2	80 3	90 6	75 1	76 7		65 7	69 0
	Min	48 0		42 6			43 1	58 6	57 9	62 2	63 6	57 6	55 9		49 3	50 7
	Max	104 1		73 3			71 1	74 3	85 2	95 9	103 7	89 3	93 1		81 1	86 5
	SD	10 9		8 0			7 6	3 9	6 7	8 2	8 2	6 6	9 4		7 5	8 0
Dec 1	N	46	NR	29	NR	NR	34	32	44	32	30	NR	31	NR	61	45
	Mean	87 2		69 6			66 7	72 5	77 9	88 2	98 8		81 1		73 9	76 8
	Min	52 5		48 9			49 0	64 1	60 8	68 5	70 0		63 0		55 5	58 3
	Max	106 8		80 7			78 2	82 0	89 4	106 8	112 5		99 3		90 3	94 5
	SD	11 4		8 1			7 9	4 2	7 2	9 0	8 8		9 4		8 3	8 3
Jan 1	N	46	NR	29	NR	NR	34	32	44	33	30	NR	31	NR	61	45
1993	Mean	92 7		76 8			75 1	78 3	82 7	97 0	105 4		85 7		82 3	84 8
	Min	57 2		55 7			55 9	70 4	63 9	75 7	74 8		67 1		55 5	66 3
	Max	113 8		88 3			88 2	87 4	94 9	118 9	119 8		105 6		99 8	103 0
	SD	12 1		8 5			8 7	4 6	7 7	9 8	9 2		9 6		9 4	8 7
Feb 1	N	46	NR	29	NR	NR	NR	32	44	33	NR	NR	31	NR	68	45
	Mean	98 3		83 3				82 6	87 5	102 7			90 4		85 1	91 1
	Min	61 8		62 1				75 3	66 9	80 7			68 0		67 0	72 7
	Max	120 8		96 0				91 8	100 8	125 5			109 7		103 1	109 9
	SD	12 8		8 7				4 7	8 4	10 2			9 7		8 2	9 1
March 1	N	46	NR	29	NR	NR	NR	32	24	34	NR	NR	31	NR	68	45
	Mean	103 3		88 5				85 1	83 2	107 2			94 6		85 2	93 3
	Min	66 0		67 6				77 5	67 8	85 0			68 0		67 0	74 8
	Max	127 2		103 0				94 9	92 8	131 0			112 8		105 6	112 8
	SD	13 5		8 9				4 6	6 3	10 5			10 0		8 3	9 3

N = number of deer; Min = minimum value, Max = maximum value, SD = standard deviation, NR = not recorded

Appendix 3.44 : Means, ranges and standard deviations of individual bodyweights (kg) of weaner stags calculated monthly on each survey farm in 1993.

Date		Farm code													
		1	2	3	4	5	6	7	8	9	10	11	13	15	16
April 1	N	61	57	68	27	42	68	12	98	50	69	52	67	54	66
1993	Mean	52 0	45 2	46 5	51 7	48 2	43 2	45 7	48 4	53 9	55 5	53 2	47 1	46 2	48 7
	Min	37 7	25 7	25 4	37 7	34 2	22 5	31 9	24 6	30 4	33 4	36 7	29 9	31 8	28 8
	Max	67 0	55 4	58 4	61 0	59 6	58 5	61 9	62 6	64 4	69 1	66 1	61 1	59 0	64 5
	SD	7 1	6 9	6 6	6 9	6 7	7 6	9 9	7 3	7 5	6 9	5 6	6 9	6 0	8 2
May 1	N	61	NR	37	27	36	68	12	102	50	69	52	65	54	66
	Mean	56 5		50 2	58 0	52 2	46 2	50 8	50 8	57 5	61 3	56 6	49 0	51 0	50 7
	Min	41 0		23 7	42 1	39 4	15 6	37 7	25 5	33 9	36 0	39 3	33 3	35 8	30 4
	Max	71 5		61 6	69 2	65 1	66 3	69 2	67 4	70 5	75 8	68 8	62 1	65 0	65 5
	SD	7 2		9 6	7 7	6 9	9 2	10 8	7 9	7 8	7 6	5 5	6 7	5 5	8 1
June 1	N	61	57	34	27	37	54	34	98	38	39	52	23	54	66
	Mean	61 5	50 9	52 6	63 0	55 9	49 1	55 7	53 9	61 2	64 3	59 1	49 3	56 1	52 7
	Min	43 5	31 0	27 0	45 2	43 0	26 6	42 6	35 2	39 5	37 1	40 1	34 1	39 8	29 7
	Max	76 6	61 2	62 0	78 2	70 1	69 0	75 2	71 2	74 0	76 3	71 1	63 8	71 2	67 8
	SD	7 5	6 9	7 5	8 1	6 9	9 0	8 9	7 6	8 0	10 0	5 9	10 2	5 8	8 2
July 1	N	61	NR	34	27	34	54	34	98	38	39	52	23	53	65
	Mean	64 0		53 1	67 7	61 3	51 8	58 4	56 3	64 8	67 1	61 5	53 7	59 1	54 7
	Min	46 5		30 6	51 4	48 0	28 8	44 8	37 5	46 5	40 3	42 7	40 8	43 8	28 6
	Max	80 0		63 4	79 0	74 2	72 2	77 7	73 5	76 4	78 7	73 7	68 4	73 8	70 2
	SD	7 6		6 8	7 5	7 3	9 0	9 0	7 3	7 3	10 9	5 4	10 1	5 8	8 3
August 1	N	61	NR	35	27	19	54	34	98	38	39	52	23	53	65
	Mean	66 7		55 3	72 6	72 6	54 7	61 2	58 8	69 6	70 4	64 0	58 3	61 6	58 8
	Min	49 6		36 3	56 4	66 1	31 1	47 1	39 9	52 9	40 5	45 3	44 7	46 8	31 9
	Max	84 5		67 1	84 2	81 1	75 4	80 3	75 9	82 5	83 4	76 3	73 5	75 0	75 4
	SD	7 8		6 7	7 3	4 5	9 1	9 3	7 4	7 0	12 2	5 2	10 1	5 8	8 6
Sept 1	N	61	NR	35	27	19	54	34	98	38	32	52	23	52	65
	Mean	69 3		58 6	77 3	78 2	58 3	64 5	61 3	74 4	79 5	66 4	62 9	64 2	63 0
	Min	52 3		40 5	61 2	70 1	34 3	49 2	41 9	59 3	50 8	47 9	48 3	49 3	35 3
	Max	89 3		69 1	89 2	87 6	79 3	83 6	78 4	88 6	88 3	78 9	79 0	76 2	80 6
	SD	8 2		6 6	7 3	5 0	9 2	9 9	7 6	6 8	6 4	5 2	10 2	6 1	8 9
Oct 1	N	47	NR	34	27	19	52	34	97	38	32	52	22	58	65
	Mean	73 6		64 3	82 7	83 7	64 5	71 6	67 1	79 1	87 0	72 4	69 3	67 7	67 0
	Min	57 8		47 5	66 9	73 8	40 6	54 7	46 4	65 5	59 2	53 9	53 6	39 0	38 5
	Max	86 9		75 5	94 9	93 9	85 9	92 3	83 4	94 4	97 4	86 3	84 0	82 0	85 6
	SD	6 6		6 6	7 5	5 7	9 3	10 7	7 7	6 9	7 0	5 3	10 1	7 4	9 3
Nov 1	N	47	NR	34	NR	19	52	34	97	38	32	52	22	58	65
	Mean	80 7		70 9		89 4	71 0	78 8	74 3	85 1	94 6	78 7	77 4	71 5	74 6
	Min	63 9		55 0		77 7	47 1	60 4	51 3	72 1	67 9	60 2	59 6	19 2	43 5
	Max	94 8		82 5		100 4	92 6	101 4	89 5	101 9	106 8	94 1	93 6	91 1	94 5
	SD	7 1		6 9		6 5	9 2	11 7	7 7	7 2	7 9	5 5	10 5	14 0	10 0
Dec 1	N	47	NR	34	NR	NR	52	34	97	38	33	52	22	56	66
	Mean	87 6		76 1			77 3	85 8	81 2	91 7	102 9	84 8	85 3	80 8	81 7
	Min	68 7		60 0			53 4	65 8	56 0	78 5	70 4	66 3	65 4	65 0	48 1
	Max	102 4		87 5			99 2	111 1	96 4	110 1	117 1	101 7	104 2	100 0	101 9
	SD	7 7		7 1			9 3	12 7	8 0	8 0	10 3	5 9	11 1	6 5	10 7
Jan 1	N	47	NR	34	NR	NR	52	32	97	15	25	50	22	30	66
1994	Mean	94 3		81 5			82 3	91 5	88 4	96 6	113 4	89 8	93 4	81 8	84 6
	Min	71 7		64 7			58 8	70 1	60 8	84 7	76 2	71 4	71 3	28 5	50 6
	Max	109 7		94 1			104 2	117 8	103 7	118 0	126 4	108 4	115 2	96 4	104 1
	SD	8 3		7 8			9 3	13 2	8 4	9 8	11 4	5 6	11 7	14 4	10 8
Feb 1	N	47	NR	4	NR	NR	52	32	NR	15	25	50	16	30	66
	Mean	99 2		92 6			83 3	93 9		102 0	119 9	94 1	101 9	87 3	87 5
	Min	80 8		91 8			61 8	71 6		88 1	80 5	75 4	75 0	57 0	53 1
	Max	114 4		93 1			104 9	118 8		125 8	133 5	114 3	122 0	99 9	106 2
	SD	8 4		0 5			9 2	13 1		10 1	12 2	5 7	12 4	8 8	10 9
March 1	N	47	NR	4	NR	NR	52	32	NR	NR	25	50	16	30	66
	Mean	103 6		94 6			84 3	96 2			120 4	98 1	102 5	92 3	90 1
	Min	83 6		94 0			64 4	73 1			81 1	79 1	78 5	76 5	55 4
	Max	119 8		95 0			105 6	121 1			133 5	119 7	120 0	103 0	108 2
	SD	8 9		0 4			9 4	13 2			12 6	6 0	11 1	6 3	11 1

N = number of deer; Min = minimum value, Max = maximum value, SD = standard deviation, NR = not recorded

Appendix 3.45 : Means, ranges, standard deviations and quartiles of bodyweights (kg) of weaner hinds and stags, both years 1992 and 1993 combined.

	DATE											
	April 1	May 1	June 1	July 1	August 1	Sept 1	Oct 1	Nov 1	Dec 1	Jan 1	Feb 1	March 1
WEANER HINDS												
Number of hinds	1432	1350	1276	1092	1027	966	1016	910	890	884	858	860
Mean	45 8	49 4	51 6	53 5	55 3	57 7	60 9	65 8	70 3	74 6	77 6	80 1
SD	7 0	7 4	7 6	7 7	8 1	8 2	8 3	8 5	8 4	8 7	8 9	9.4
Minimum	19 9	21 5	26 6	27 7	27 4	27 4	28 5	31 7	34 6	37 6	40 4	42 9
25th percentile	41 4	44 8	46 5	48 5	49 5	52 4	55 8	60 3	65 0	69 0	71 7	74 0
50th percentile	46 2	49 9	52 0	53 9	55 8	58 0	61 3	66 0	70 6	74 5	77 3	79 6
75th percentile	50 3	54 5	57 0	58 8	61 1	63 0	66 3	71 4	75 8	80 4	83 9	86 7
Maximum	64 5	73 0	73 7	75 3	76 9	81 4	86 0	103 4	101 4	109 8	107 5	113 0
WEANER STAGS												
Number of stags	1403	1315	1331	1305	1291	1148	1117	1010	915	863	649	615
Mean	50 0	53 9	56 5	58 8	61 2	64 6	69 7	75 7	81 9	87 7	91 7	94 2
SD	7 6	8 5	8 7	9 5	9 8	10 5	11 0	11 5	11 6	12 4	12 6	13 2
Minimum	22 5	23 7	26 6	28 6	31 1	34 3	37 6	42 6	48 1	50 6	53 1	55 4
25th percentile	45 1	48 6	51 2	53 0	55 0	57 3	62 2	68 0	73 8	79 8	83 4	85 2
50th percentile	50 6	54 6	56 9	59 1	61 5	64 5	69 6	75 2	81 2	86 9	91 0	93 1
75th percentile	55 4	60 0	62 2	65 4	68 0	72 0	77 2	82 9	89 1	94 4	98 6	102 0
Maximum	69 1	76 1	82 0	84 0	85 9	90 5	101 4	106 8	117 1	126 4	133 5	133 5

SD = standard deviation

Appendix 3.48 : Means, ranges, standard deviations and quartiles of growth rates (g/d) of weaner hinds and stags in 1992, 1993 and both year combined.

	Weaner hinds			Weaner stags		
Period	1992	1993	Both years combined	1992	1993	Both years combined
Growth rates from April 1 to June 1						
Number of deer	474 0	612 0	1086 0	499 0	650 0	1149 0
Mean	95 7	95 2	95 4	120 0	110 4	114 6
Minimum	-66 2	-114 3	-114 3	-36 1	-42 9	-42 9
Maximum	225 7	315 4	315 4	268 9	330 8	330 8
Standard deviation	48 7	52 6	50 9	55 0	53 9	54 6
25th percentile	64 0	61 9	62 0	83 3	76 2	78 3
50th percentile	96 0	89 3	92 5	116 2	103 7	109 2
75th percentile	128 7	125 5	127 2	156 6	145 3	150 2
Growth rates from June 1 to September 1						
Number of deer	414 0	479 0	893 0	468 0	586 0	1054 0
Mean	38 5	64 5	52 4	75 4	102 7	90 6
Minimum	-92 7	-74 6	-92 7	-87 8	-65 9	-87 8
Maximum	180 1	183 2	183 2	231 7	275 9	275 9
Standard deviation	35 4	37 1	38 6	51 2	44 3	49 4
25th percentile	13 6	39 7	27 8	37 1	75 4	60 5
50th percentile	37 1	64 2	54 1	74 7	100 7	92 8
75th percentile	63 3	85 0	75 5	113 9	129 9	122 2
Growth rates from September 1 to December 1						
Number of deer	435 0	435 0	870 0	374 0	518 0	892 0
Mean	132 7	150 8	141 7	196 8	213 2	206 3
Minimum	8 8	58 8	8 8	16 4	31 2	16 4
Maximum	229 6	279 1	279 1	348 2	343 6	348 2
Standard deviation	33 0	34 6	35 0	56 1	44 1	50 1
25th percentile	109 9	127 6	118 5	155 5	188 3	176 5
50th percentile	134 6	147 7	141 4	197 1	212 1	208 6
75th percentile	155 1	173 9	164 4	235 5	237 0	236 6
Growth rates from December 1 to March 1						
Number of deer	439 0	403 0	842 0	298 0	319 0	617 0
Mean	190 2	130 2	161 5	235 4	180 7	207 1
Minimum	53 5	-63 4	-63 4	39 7	-36 7	-36 7
Maximum	350 3	340 7	350 3	426 5	459 3	459 3
Standard deviation	50 7	60 1	62 9	66 2	74 4	75 7
25th percentile	156 3	88 9	119 1	186 3	132 1	157 0
50th percentile	188 7	130 1	161 6	233 1	177 1	205 2
75th percentile	223 3	168 3	204 8	277 9	227 8	259 7

Appendix 3.49 : Bodyweights (kg) of yearling stags on each survey farm in 1992 and 1993.

	MARCH						JUNE					
Farm code	Date	Number of deer	Mean	Min	Max	SD	Date	Number of deer	Mean	Min	Max	SD
Year 1992												
1	NR						31-May	54	106 2	88 0	129 0	9 0
3	NR						03-Jun	1	77 5	77 5	77 5	
6	17-Mar	46	85 9	70 0	102 0	8 3	22-Jun	24	87 9	76 0	100 0	6 6
7	08-Mar	22	90 5	78 2	109 5	7 0	28-May	24	95 9	81 4	138 5	11 0
8	21-Feb	11	105 4	78 0	151 0	17 2	21-Jun	11	104 8	91 0	137 0	12 9
9	23-Feb	36	106 4	84 0	133 0	9 6	NR					
10	NR						18-Jun	24	114 8	108 0	127 5	4 9
13	NR						26-Jun	3	81 7	57 0	101 0	18 4
15	NR						15-Jun	69	104 0	86 5	118 5	7 6
16	NR						03-Jul	35	87 5	66 5	109 5	10 1
All farms		115	95 1	70 0	151 0	13 5		245	100 5	57 0	138 5	12 6
Year 1993												
1	14-Mar	46	105 7	68 0	131 0	13 9	06-Jun	46	106 9	73 0	136 0	13 2
3	13-Mar	29	90 7	70 0	106 0	9 0	NR					
6	NR						10-May	32	91 4	68 0	108 0	10 2
7	20-Mar	32	86 8	79 0	97 0	4 7	05-Jun	31	92 2	84 5	98 0	4 1
8	02-Feb	25	82 3	67 0	98 0	7 1	26-May	24	87 9	70 5	98 0	6 4
10	NR						10-Jun	28	116 6	85 5	130 5	9 5
11	NR						25-May	68	99 8	73 0	119 0	8 7
13	25-Mar	28	99 2	77 5	115 5	9 2	NR					
15	29-Mar	10	89 8	77 0	108 0	8 9	10-Jun	37	92 1	70 0	143 0	13 4
16	17-Mar	45	94 5	76 0	114 5	9 5	29-Jun	45	93 0	75 0	113 0	9 2
All farms		215	94 2	67 0	131 0	12 4		311	97 9	68 0	143 0	12 9
All stags combined		330	94 5	67 0	151 0	12 8		556	99 0	57 0	143 0	12 8

	SEPTEMBER						NOVEMBER					
Farm code	Date	Number of deer	Mean	Min	Max	SD	Date	Number of deer	Mean	Min	Max	SD
Year 1992												
1	09-Sep	54	102 0	82 0	117 0	8 1	V	53	127 8	106 0	149 0	9 6
2	NR						16-Nov	11	118 2	108 5	124 5	4 6
3	NR						V	2	120 0	103 0	137 0	17 0
6	NR						09-Nov	24	94 7	78 0	110 0	7 2
7	12-Sep	16	91 1	62 5	144 5	15 9	28-Nov	18	99 0	75 0	118 5	10 9
10	31-Aug	24	116 8	109 5	127 5	5 2	V	19	142 3	121 0	158 0	9 9
13	NR						V	4	98 4	92 5	107 0	6 0
15	NR						V	55	125 6	99 0	146 0	11 2
16	13-Sep	34	83 0	65 5	104 0	9 0	05-Jan	37	113 9	85 0	140 5	12 2
All farms		128	98 4	62 5	144 5	15 0		223	119 2	75 0	158 0	17 0
Year 1993												
1	NR						V	43	130 5	94 0	166 0	16 5
3	NR						10-Jan	21	112 0	92 0	128 0	8 9
6	06-Sep	18	94 1	71 5	109 5	11 1	NR					
7	28-Aug	23	92 8	82 0	101 0	5 1	V	16	106 1	98 5	116 5	5 8
10	01-Sep	24	116 1	104 0	125 5	5 8	V	24	147 5	135 0	165 5	7 3
15	NR						V	66	109 6	81 0	127 0	9 7
16	11-Sep	45	96 0	78 0	114 0	8 9	V	23	127 4	101 5	151 0	10 8
All farms		110	99 4	71 5	125 5	12 0		193	121 0	81 0	166 0	17 6
All stags combined		238	98 8	62 5	144 5	13 7		416	120 1	75 0	166 0	17 3

Note Farm 14 was not surveyed in 1993

Min = minimum, Max = maximum, SD = standard deviation, NR = not recorded by the farmer.

V = at velvet antler harvesting

Appendix 3.50 : Bodyweights (kg) of adult stags on each survey farm in 1992 and 1993.

	MARCH						JUNE					
Farm code	Date	Number of deer	Mean	Min	Max	SD	Date	Number of deer	Mean	Min	Max	SD
Year 1992												
1	NR						25-May	58	162 8	123 0	196 0	14 5
3	NR						03-Jun	47	130 9	102 0	168 0	18 4
4	05-Feb	3	199 0	174 0	230 0	23 3	NR					
6	NR						22-Jun	54	122 7	80 0	166 0	19 9
7	08-Mar	17	142 2	83 6	187 0	28 3	01-Jun	20	125 4	82 6	158 0	19 6
10	NR						18-Jun	23	154 5	124 5	187 5	17 6
11	NR						15-Jun	90	131 9	103 0	173 0	14 9
13	NR						26-Jun	2	143 0	125 0	161 0	18 0
14	09-Mar	13	139 8	122 0	163 0	11 7	08-Aug	74	136 8	117 0	154 0	8 9
15	NR						15-Jun	69	139 5	103 0	168 5	12 1
16	NR						03-Jul	49	123 7	92 5	167 5	18 9
All farms		33	146 4	83 6	230 0	28 2		486	136 3	80 0	196 0	19 8
Year 1993												
1	10-Mar	4	215 5	202 0	223 0	8 2	20-Jun	63	156 1	120 0	186 0	15 0
3	17-Mar	4	202 8	155 0	231 0	28 6	19-Jun	47	144 1	106 0	179 0	17 2
7	NR						05-Jun	23	130 6	72 5	167 0	20 1
10	NR						16-Jun	36	160 9	138 0	204 0	16 0
11	NR						25-May	139	136 4	95 0	242 0	22 2
15	NR						10-Jun	44	128 1	81 0	158 0	19 3
16	NR						29-Jun	86	123 1	80 5	171 0	17 9
All farms		8	209 1	155 0	231 0	22 0		438	138 3	72 5	242 0	22 7
All stags combined		41	158 6	83 6	231 0	36 7		924	137 3	72 5	242 0	21 2

	SEPTEMBER						NOVEMBER					
Farm code	Date	Number of deer	Mean	Min	Max	SD	Date	Number of deer	Mean	Min	Max	SD
Year 1992												
1	09-Sep	58	146 2	116 0	174 0	13 6	V	62	163 5	128 0	215 0	16 3
3	NR						V	48	147 4	112 0	197 0	19 2
7	12-Sep	20	120 8	77 0	154 0	19 7	V	22	130 3	89 5	167 0	19 8
10	02-Sep	24	156 6	126 5	198 0	20 5	V	25	176 5	147 0	221 0	19 0
11	NR						V	105	149 2	108 0	222 0	23 3
13	NR						V	17	157 5	144 0	192 0	11 8
15	NR						V	43	142 3	107 0	171 5	13 9
16	13-Sep	49	114 6	88 5	155 5	16 6	V	49	142 4	112 0	192 5	18 7
All farms		151	134 2	77 0	198 0	23 7		371	150 7	89 5	222 0	22 1
Year 1993												
1	05-Sep	63	145 2	110 5	169 0	13 1	V	53	165 1	133 0	203 0	14 9
3	NR						V	30	167 8	127 0	203 0	17 8
7	NR						V	12	135 3	114 0	178 5	15 3
10	01-Sep	29	155 1	132 0	199 5	16 7	V	28	179 2	153 0	219 0	16 6
15	NR						V	81	145 4	36 0	183 0	21 3
16	11-Sep	63	120 7	91 5	163 0	15 3	V	63	148 0	116 0	199 0	17 4
All farms		155	137 1	91 5	199 5	20 4		267	155 5	36 0	219 0	22 0
All stags combined		306	135 7	77 0	199 5	22 1		638	152 7	36 0	222 0	22 2

Note Farm 14 was not surveyed in 1993

Min = minimum, Max = maximum, SD = standard deviation, NR = not recorded by the farmer;

V = at velvet antler harvesting

Appendix 3.51 : Bodyweight changes (kg) of adult and yearling stags on each survey farm in 1992 and 1993.

Farm code	Yearling stags					Adult stags				
	Number of deer	Mean	Min	Max	SD	Number of deer	Mean	Min	Max	SD
Bodyweight change between June and September (g/d)										
Year 1992										
1	54	-41 4	-128 7	19 8	20 8	57	-153 8	-233 6	-46 7	40 8
7	16	-45 4	-189 3	58 3	62 2	19	-37 9	-106 8	271 8	81 4
10	24	25 9	-27 0	108 1	30 8	23	37 2	-118 4	230 3	93 0
16	34	-61 9	-222 2	13 9	53 3	49	-126 1	-402 8	305 6	104 7
All farms	128	-34 7	-222 2	108 1	50 1	148	-100 1	-402 8	305 6	105 9
Year 1993										
1						63	-141 5	-376 6	0 0	67 4
6	18	19 8	-21 0	67 2	22 9					
7	22	27 9	-59 5	89 3	32 0					
10	22	-44 4	-96 4	60 2	39 8	29	-103 9	-214 3	32 5	66 0
16	45	41 4	-40 5	236 5	49 6	63	-86 8	-432 4	148 6	72 6
All farms	107	17 4	-96 4	236 5	52 0	155	-112 2	-432 4	148 6	73 7
All stags combined	235	-11 0	-222 2	236 5	57 2	303	-106 3	-432 4	305 6	91 1
Bodyweight change between June and the time of velvet antler removal (g/d)										
Year 1992										
1	52	105 5	34 7	143 6	20 2	58	-1 2	-100 0	114 9	45 4
3	1	114 9	114 9	114 9		47	82 9	-18 6	187 2	42 2
5	24	48 4	-28 6	100 0	33 0					
6	10	38 2	-91 1	67 2	44 8					
7						19	34 1	-67 6	206 0	63 3
9	19	151 7	62 9	212 3	38 2					
10						22	159 3	-34 0	338 8	89 0
11						87	74 9	-65 5	379 6	66 1
13	55	115 8	40 5	206 0	38 1					
14	35	131 1	-161 1	194 6	75 5					
15						42	25 4	-160 2	137 6	58 3
16	49	114 6	88 5	155 5	16 6	49	124 0	-26 9	205 5	44 5
All farms	196	107 1	-161 1	212 3	53 8	324	66 8	-160 2	379 6	74 6
Year 1993										
1						53	47 7	-300 0	164 3	66 3
3						29	110 6	-21 6	331 4	65 9
7	15	88 8	56 4	125 0	21 6	12	84 4	27 2	267 0	60 1
10	22	149 2	111 4	230 4	26 3	28	108 6	-15 0	208 9	59 8
15	33	106 2	44 0	189 5	39 1	31	21 4	-88 6	182 4	61 5
16	16	174 9	130 7	232 1	25 2	63	141 7	-14 8	300 0	60 4
All farms	129	127 0	44 0	232 1	42 5	216	89 7	-300 0	331 4	77 0
All stags combined	325	115 0	-161 1	232 1	50 6	540	76 0	-300 0	379 6	76 4
Percentage of bodyweight change between June and the time of velvet antler removal (%)										
Year 1992										
1	52	19 6	6 5	28 4	4 2	58	0 1	-8 8	11 1	4 6
3	1	32 9				47	12 2	-2 0	35 5	6 8
6	24	7 8	-4 9	16 7	5 5					
7	10	7 3	-17 9	13 4	8 8	19	6 5	-7 0	32 5	9 5
10	19	22 5	8 8	32 8	6 0	22	16 3	-2 9	41 4	9 6
11						87	8 7	-7 4	32 8	6 9
15	55	19 3	7 0	34 6	6 4	42	2 9	-19 5	14 0	6 2
16	35	30 0	19 4	45 1	5 6	49	15 6	-3 4	31 9	6 1
All farms	196	19 7	-17 9	45 1	8 9	324	8 4	-19 5	41 4	8 7
Year 1993										
1	43	22 5	13 0	38 9	6 1	53	4 4	-22 7	12 8	5 5
3						29	12 2	-1 8	51 8	9 2
7	15	19 2	12 1	24 7	4 4	12	15 1	4 0	24 7	3 7
10	22	23 3	17 1	39 7	4 9	28	10 2	-1 3	22 8	6 2
15	33	22 1	7 5	51 4	10 0	31	2 7	-9 9	21 8	7 5
16	16	29 9	23 0	35 9	4 1	63	17 1	-1 4	35 8	8 6
All farms	129	23 1	7 5	51 4	7 4	216	10 2	-22 7	51 8	9 2
All stags combined	325	21 0	-17 9	51 4	8 5	540	9 1	-22 7	51 8	9 0

Min = minimum, Max = maximum, SD = standard deviation, V = at velvet antler harvesting