MEAT PRODUCTION FROM DEER

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Meat, as a mixture of water, protein, fat and minerals has been a preferred dietary component by man for thousands of years. In early history man's vigorous outdoor life-style required much fuel and this was often provided by high calorific value fatty meat. The affluence of our modern day Western civilisation, where a high proportion of the population is engaged in rather sedentary occupations removes the need for a large intake of high energy foods. In fact many of us suffer from the malnutrition of over-indulgence and I suspect that this conference will contribute to that problem.

I want to comment briefly on venison production. The breakdown of a typical 2 year old red stag after slaugher is shown in Figure 1. The information is derived from a number of 2 year stags slaughtered at Invermay over the years. The liveweight given is after an overnight fast and it can be seen that the clean dressed carcass (minus skin and visceral organs) comprises 61.7% of the liveweight. This figure can be compared with 45 - 50% in sheep and goats and 50 - 55% cattle. Dressing % in deer is being calculated in a number of ways such as "hide on" and heart, liver, lungs, and kidneys attached. I would suggest that as slaughter deer production commences, the industry should base its calculations on the clean carcass. Figure 1 shows that approximately 4% of the live animal weight will be in the components of heart, liver, lungs and kidney and another 4% in the hide.

Carcass compenents

A very high proportion of the whole deer carcass weight comprises saleable product. Figure 2 illustrates the weights of the saleable cuts assuming negligible fat trim and no loss from damage during processing. 93% of the carcass should appear as packed meat for sale and 50 - 55% of the packed meat will be in the high priced cuts of haunch and saddle.

Carcass fatness

We have long regarded venison carcasses as being largely "fat-free" Information from Invermay and elsewhere has suggested that no more than 5 - 10% of the deer carcass will be fat and this compares very favourably with lamb carcass (25 - 35% fat). In the last three months there have been persistent and widespread reports of grossly "over-fat" stags. Figure 3 shows how carcass fat in stags increases with increasing carcass weight. Most of the carcasses we have examined at Invermay have been from animals up to 27 months of age giving carcasses of 50 - 80kg and you can see from the graph that carcass fat is within the span of 7 - 14%. What has been happening in the last 3 months is that many people have been culling old stags from their herds as a result of increasing farm stag numbers, decreases in velvet antler prices and a depressed live animal market. These animals are often aged and with carcass weights well in excess of 100kg. For every 1kg increase in carcass weight an approximate increase of 0.2% in carcass fat will be the result. The fat content of a 120kg carcass should be about 20% and although this does not look particularly high by the standards for sheep and cattle it may appear to be a very obvious problem for two reasons.

1) There is an indication that the fat deposits in fat deer are on the surface of the carcass down the back and are therefore highly visible.

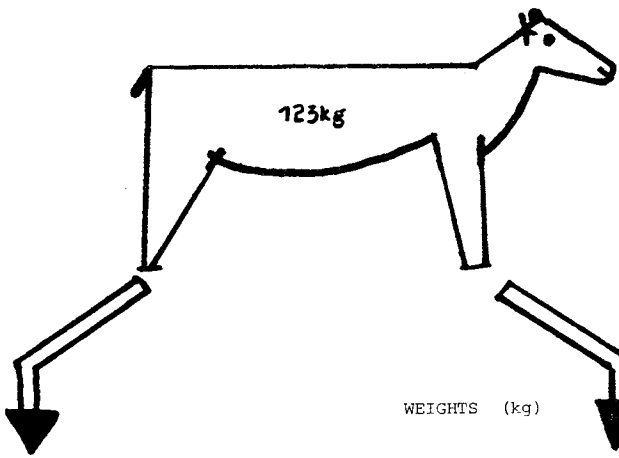
2) Until this year most of New Zealand's venison production has come from feral deer and this has been particularly lean mainly because the carcasses have been rather small. Even a modest amount of superficial fat on a farmed deer carcass will stand out as "abnormal".

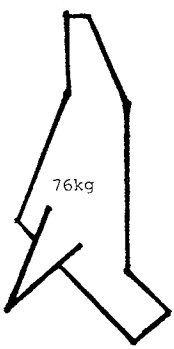
In the long term it is probable that our farmed venison production will come mainly from 2 year old stags and these are unlikely to be fat even at the end of summer. Those old stags that we slaughter should be killed as soon as possible after velvet antler harvest or left until after the rut when they will have lost some of the surplus fat. With the completion of the Invermay slaughter facility later this year we will be commencing a programme of work to establish the best time to slaughter deer at various ages and to investigate the effects of pre and post slaughter treatment on subsequent meat quality.

FIG 1

SLAUGHTER DEER

Information From A Typical 2 Year Old Red Deer





Dressing % = 61.7

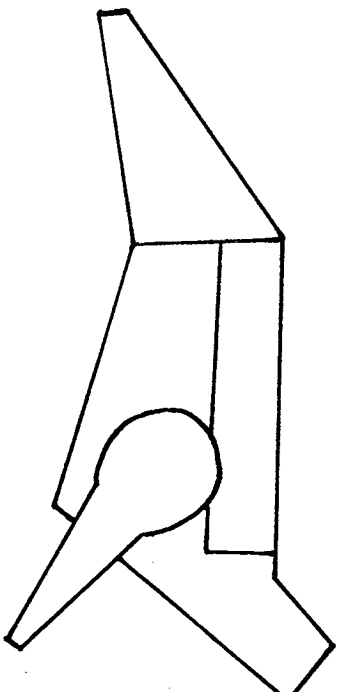
	WEIGHTS (kg)	% LIVEWEIGHT
Gut	11.6	9.4
Heart	1.0	
Lungs	1.4	3.7
Liver	1.8	
Kidneys	0.3	
Head	6.6	5.4
Tail	0.2	0.2
Skin	5.4	4.4
Feet, Kidney fat and Pieces	7	5.7

TOTAL = 28kg

FIG. 2 DISTRIBUTION OF CARCASS CUTS

2 Year Old Stag

Carcass Weight - 76kg



Packed Weight (kg)

HAUNCH 29

SADDLE 11

SHOULDER 14

BONELESS "B" 17
(from neck and ribs)

DISCARD BONE
(neck and ribs) 5

PACKED WEIGHT
= 71kg

OR

93% of carcass
weight

CARCASS WEIGHT AND FATNESS IN STAGS

FIG. 3