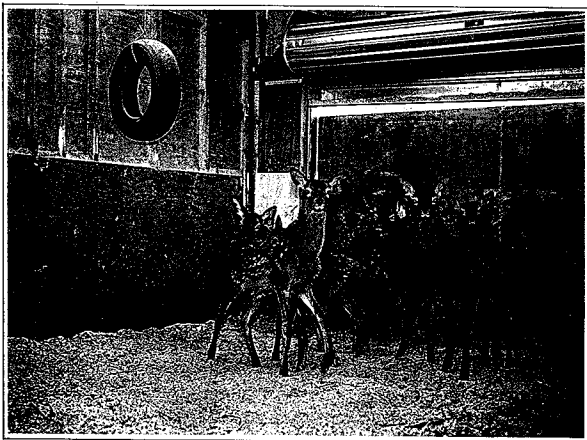


Let there be light

Growing up at Invermay

by Noreen Hegarty



Recently weaned Invermay stags in one of the centre's four in wintering sheds. The tyre is a form of entertainment.

LIGHT, THE main source of growth, has been used at Invermay Agricultural Centre for just that – to induce rapid early growth of deer wintered indoors – with some remarkable results.

Growth physiology scientist Dr

James Suttie says the goal of the light experiments was to achieve about 90 kg average weights for one year olds.

Three groups of 10 weaner stags were housed in separate pens at Invermay, all of which were light-

proofed and had time-controlled fluorescent tubes installed.

One group (herein referred to as group one) was put on 16 hours of daylight and eight hours darkness at the autumn equinox. Group two experienced an advanced winter solstice; the control group (group three), was kept indoors on simulated light at normal seasonal hours.

The deer were kept inside from April 9 until September 4, and Suttie says after seven or eight weeks there was a rapid increase in growth rates.

Group one deer gained an average 275 g a day throughout the experiment, those in group two put on 202 g a day, and the control group advanced by 154 g a day.

All stags were pure Reds bred at Invermay. The three groups were all fed the same diet, ad-lib from troughs in the sheds.

"It was a barley based concentrate diet containing cotton seed, meal and soya beans as protein sources," Suttie says.

"The diet contained 16 per cent digestible crude protein (DCP) and contained 11.5 megajoules of ME a kg." Some chaffed lucerne hay was also fed during the experiment to reduce the incidence of coat chewing.

Live weights for all groups on April 9 were around the 42 kg mark; Group one average weights were ▶

Years of experience give results

INVERMAY AGRICULTURAL Centre has been experimenting with in-wintering deer for the past four years.

The centre's 1988 and 1989 trials were based around high and low feed allowance diets for deer wintered indoors and deer wintered outside on feed pads.

The high allowance diet fed to two indoor and two outdoor groups consisted 16 per cent digestible crude protein (DCP) in the winter months only – until early September – then they were released to pasture.

The low allowance diet groups received less food and were released to pasture at the same time.

Group one [high allowance diets]

growth rates were better all the way through," Dr James Suttie says.

Average live weights for the two indoor high allowance groups in early June 1989 were 49 kg and 45.3 kg. The low allowance indoor groups started off at 50 kg and 47.9 kg average weights. Outdoor live weights were 46.4 kg and 47.4 kg (average) for the high allowance groups, and 48.3 kg and 48.7 kg for the low allowance groups.

By September 26 the corresponding average weights for the respective groups were 70.7 kg, 64.8 kg, 56.1 kg, 55.8 kg, 67.1 kg, 68.8 kg, 59.4 kg and 58.9 kg.

"Keeping animals inside to achieve good weight gains doesn't nec-

essarily seem a good idea," Suttie says.

"However, to achieve the same weight gains outside on the feed pads required a lot more feed than those inside.

"In terms of feed requirements, there was a 7 per cent saving at the high allowance level by having animals indoors and a 4 per cent saving in food intake at the low allowance level.

"Therefore, the advantage of in-wintering was in the feeding cost savings while the weight gains were the same."

Suttie says Invermay has two years' data on that experiment and the results are consistent throughout. □

FARM MANAGEMENT

▷ 42.6, group two weighed in at 42.2 and those in group three started out ahead on 42.7 kg.

By September 4 the deer had respectively gained an average 42.3 kg, 31.1 kg, and 23.3 kg each.

They were put on pasture from that date and were not weighed until a year old on November 12, when average weights per group member were 91.1 kg, 84 kg and 78.3 kg.

Deer were bedded on about 30 cm of sawdust for the duration, and a ventilation system was installed which drew air across the pen from outside and expelled it through a roof duct.

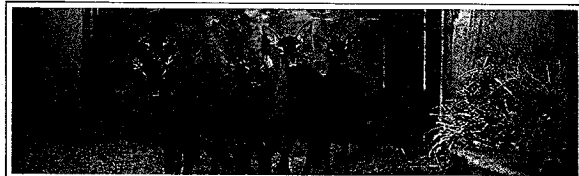
Suttie says there is a lot of farmer interest in Southland and Otago in indoor wintering of deer. More than 200 farmers attended an Invermay field day on the issue last May.

"MAF is trying to encourage the added value aspect of light manipulation as a way of increasing growth," he says.

"But basically, straight economics and indoor wintering, in terms of increased venison production, do not add up. We're not advising farmers to build new complexes, but adapt-

ing an existing building could be worthwhile.

"Any decision to go ahead with in-wintering should be made after considering pasture pugging, the farm stocking rate, feed efficiency and the availability of an existing building."



This year Invermay animal nutrition unit will try and discover whether the absolute amount of light affects weaner growth rates.

"We'll be looking to see whether we could give deer 12 hours light instead of 16 and achieve the similar results," Suttie says.

"We're aiming at developing a system where the farmer can give a small amount of light during the night, compared with having lights on all night."

The unit will run four groups of 10 weaner stags indoors and will hold the animals in the pens much longer than previous years to find out when the light-induced growth rate will stop.

"Because the deer will be in the pens for a year, they will be released

on to pasture once a week for three to four hours exercise and fresh air.

"Toys – like wooden blocks and tyres hung from the roof of the shed – along with exercise and fresh air, are beneficial for growth and weight gain."

Further Invermay trial results could be of interest to more deer farmers next year if they go through another hard winter.

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