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Effect of Regulin[®] implants on spring fertility, lactation and down growth of cashmere does

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ABSTRACT

The effect of treatment with melatonin (Regulin[®]) implants on spring down growth, oestrus and conception rates was examined in dry does ($n=84$), while the effect of this treatment on down growth, lactation and kid growth rates was examined in lactating does ($n=109$). Treated does were implanted 3 times at 8 weekly intervals starting in early September. The animals were shorn and fleeces sampled on 26 January. Regulin[®] melatonin treatment increased down weight by 43%, 92% and 88% in dry hoggets, dry mixed-age and lactating mixed-age does, respectively, and increased down diameter by 6%, 2% and 4% and total fleece weight by 22%, 29% and 30% respectively. The down weight of the untreated lactating does (12.3 g) was half that of the untreated dry does (24.3 g).

The lactating mixed-age does kidded from 30 August to 29 September; 4 does kidded before the first implant. Regulin[®] treatment had no effect on the appearance of milk secretions or the weaning weight of kids. Fertile bucks were joined from 6 October to 20 October, and from 24 November to 8 December to the dry does. There was 1 mating mark and pregnancy in the treated does in the first joining period and no mating marks in either groups in the second period.

Keywords Cashmere does; melatonin; Regulin[®]; spring down growth; lactation; oestrus; conception

INTRODUCTION

Several reports have appeared on the effects of melatonin on down growth and reproduction of goats. Betteridge *et al.* (1987) have shown that melatonin impregnated silicon rubber implants, inserted into cashmere goats in September, caused the goats to start cashmere production several weeks earlier than untreated animals. McPhee *et al.* (1987) has shown that Regulin[®] treatment of Angora does in November increased the prolificacy and fertility of a December joining. Melatonin has been shown to reduce prolactin levels in ewes (Kennaway *et al.*, 1982), and in red deer hinds (Webster and Barrell, 1985). Asher *et al.* (1988) found that of 6 pregnant fallow does receiving implants within the last 40 days of lactation, 4 failed to lactate after parturition.

In the present trial the effect of spring treatment with Regulin[®] implants starting in September, on spring down growth, oestrus and conception rates was examined in dry does, while the effect of this treatment on down growth,

lactation and kid growth rates was examined in lactating does.

MATERIALS AND METHODS

Treated dry does ($n=84$) were implanted 3 times at 8 weekly intervals starting on 8 September. Fertile bucks were joined for a fortnight from 6 October to 20 October, and from 24 November to 8 December.

Treated lactating does ($n=109$) were implanted 3 times at 8 weekly intervals starting on 1 September.

Four does kidded before the first implant, kidding started on 30 August and ended on 29 September. Milk samples were expressed from the udders on 14 October and 25 November. The kids were weighed at weaning on 25 November.

Both dry and lactating does were shorn on 26 January. The total fleece was harvested following shearing, the down was separated from the guard hair by a Shirley analyser in a sub-sample, total

down weight was calculated by multiplying yield with total fleece weight.

TABLE 1 Effect of Regulin® on spring total fleece weight (g). Number of does in parentheses

	Dry does		Lactating does
	1 yr old	Mixed age	Mixed age
Regulin	178 (13)	257 (12)	215 (24)
No Regulin	146 (14)	199 (10)	166 (25)
SED	12.8	12.8	19.8

RESULTS

Reproduction

There was only 1 mating mark tup and pregnancy in the treated group during the October joining of the dry does, and no mating marks and pregnancies in the control. There were no mating marks or pregnancies in either group during the November joining. It was possible to express visually normal milk from the udders of all treated and untreated lactating does. There was no effect of Regulin® on the weight of the kids at weaning.

TABLE 2 Effect of Regulin® on spring down weight (g)

	Dry does		Lactating does
	1 yr old	Mixed age	Mixed age
Regulin	36.6	46.8	23.1
No Regulin	25.6	24.3	12.3
SED	6.2	6.2	3.8

TABLE 3 Effect of Regulin® on spring fibre diameter (μ)

	Dry does		Lactating does
	1 yr old	Mixed age	Mixed age
Regulin	17.3	16.9	17.1
No Regulin	16.3	16.5	16.4
SED	0.4	0.4	0.3

Fibre Growth

There were effects of Regulin® on total fleece

weight (Table 1) and down weight (Table 2) in the 3 different categories of does. The increase in down weight was associated with a small but significant increase in fibre diameter (Table 3).

DISCUSSION

Neither bucks nor bucks plus Regulin® was successful in inducing oestrus or pregnancy in October or November joined cashmere does. This agrees with the findings of Restall (1983) who was unable to obtain a buck effect on oestrus onset between the spring and autumn equinoxes.

Regulin® had no effect on lactation when it was administered around the time of kidding. The effects of Regulin® on the lactation of the doe when administered during the last third of pregnancy, remain to be investigated, Asher (1988) found an effect in the fallow deer.

Treatment with 3 Regulin® implants doubled the spring down production of both dry and lactating mixed-age does. The 2 types of does were not grazed together so the data from them is not strictly comparable. However some inferences can be made, it can be seen that while the down weight production of the untreated dry does was double that of the untreated lactating does, the total fleece production was only about 15% higher. Similar findings on total fleece production were found by Norton (1985).

Unfortunately the data discussed in this study are confined to the spring period, and no claims can be made that we have increased down production over a period of a year.

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