**Table 1**. Cumulative numbers of ewes returning to oestrus after laparoscopic insemination of the same 60 ewes with autumn or spring collected semen from a ram.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Semen collection time | Number of ewes returning to oestrus post-insemination | | | |
|  | 0 to 17 days | 18 to 34 days | 35 to 51 days | 52 to 68 days |
| Autumn | 19 | 21 | 21 | 21 |
| Spring | 17 | 28 | 33 | 39 |

**Table 2.** Fate of foetuses from day 84 of start of joining through to weaned lambs at 5 months of age in response to melatonin treatment (250 dams and 4 sires per group) ewes.

|  |  |  |  |
| --- | --- | --- | --- |
| Melatonin treatment | Surviving foetuses | Lost twin foetuses | Lost single foetuses |
| Controls | 210 | 72 | 17 |
| Rams only treated | 209 | 14 | 36 |
| Ewes only treated | 220 | 37 | 23 |
| Rams and ewes treated | 248 | 17 | 21 |

**Table 3.** Birth-coat characteristics of 5 months old lamb progeny according to melatonin treatment status of parents. Bracketed figures are standard errors of the mean.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Melatonin treatment | Number of lambs | Outer fleece length (mm) | Primary fibre diameter (um) | Secondary fibre diameter (um) |
| Controls  No treatment | 34 | 18.7 (1.14) | 16.1 (0.59) | 17.2 (0.47) |
| Rams only treated | 32 | 21.7 (1.24) | 13.6 (0.66) | 16.9 (0.36) |
| Ewes only treated | 33 | 17.4 (0.93) | 15.5 (0.50) | 17.1 (0.25) |
| Rams and Ewes treated | 35 | 24.4 (1.09) | 14.6 (0.47) | 17.9 (0.32) |

**Table 4:** Visual classification of ewes conceived in the autumn or spring for density and length of wool

|  |  |  |  |
| --- | --- | --- | --- |
| Time of joining | Visual assessment of fibre density and length | | |
|  | High | Moderate | Low |
| “Warwilla” case study: |  | | |
| Autumn | 31 | 64 | 11 |
| Spring | 22 | 145 | 95 |
| X2 | 27.464 | 1.135 | 26,611 |
| Significance level | P < 0.001 \*\*\* | n.s. | P < 0.001 \*\*\* |
|  |  |  |  |
| “Bundemar” case study: |  |  |  |
| Autumn | 188 | 322 | 40 |
| Spring | 116 | 270 | 48 |
| X2 | 84.447 | 7.263 | 80.224 |
| Significance level | P < 0.001 \*\*\* | P < 0.01 \*\* | P < 0.001 \*\*\* |

**Table 5.** Classification of ewes for facial pigment according to time of conception in the “Warwilla” case study.

|  |  |  |  |
| --- | --- | --- | --- |
| Time of joining | Number of sheep with: | | |
|  | No pigment | Moderate pigment | Excessive pigment |
| Autumn | 47 | 43 | 16 |
| Spring | 77 | 119 | 71 |
| X2 | 8.251 | 0.495 | 5.608 |
| Significance level | P < 0.001\*\*\* | P < 0.48 n.s. | P < 0.05 \* |