

## LETTERS TO THE EDITOR

### Estrous Synchronization in Commercial Sheep Flocks in Alberta and Saskatchewan

DEAR SIR:

Estrous synchronization in sheep has seen limited application in some areas of the world (2, 3), but little commercial use in North America. Fertility to synchronized estrus during the breeding season seems comparable to that at natural estrus (2), but is lower and more variable (4) during seasonal anestrus. The results of an estrous synchronization service to a limited number of sheep producers in Alberta and Saskatchewan are summarized here, with some comments on factors we feel are critical to success.

As is shown in Table I, nine commercial (A,C,D,E,F,G,H,I,K) and two institutional (B,J) flocks in Alberta and Saskatchewan were utilized. Table I also gives a breakdown of the numbers and breeds of ewes available and the month of breeding. Estrus was synchronized in all cases by treating the ewe for 12 days with intravaginal sponges<sup>1</sup> containing 60 mg of medroxyprogesterone acetate. Sponges were inserted with a lubricated speculum and rod and in small ewes securely placed by hand. At sponge removal all ewes received 500 I.U. of pregnant mares serum gonadotropin (5) (PMSG)<sup>2</sup> I.M. in sterile saline. Rams were introduced at sponge removal at the ram to ewe ratios shown in Table I. Although rams remained with the ewes for variable periods of time, only the results for breedings at the synchronized estrus are shown in Table I. All manipulations involved in the process of estrous synchronization were controlled by one of the authors.

Results are summarized in Table I. For simplicity, producers were asked for a minimum of information, and results were not generally presented according to age of ewe. For the total of 477 ewes treated, complete information was obtained concerning the number of ewes lambing and the number of lambs per 100 ewes lambing (Table I). However, not all of the sup-

plemental information requested from producers was obtained and in the results given below the number of ewes involved is given in each case. Sponge losses were 4.2% (based on results for 209 ewes), excluding one batch of 13 ewe lambs, treated as a group, in which losses were 31% (flock D). Losses in general were similar to those previously reported. Losses from maiden ewes are generally expected to be higher than for ewes that have previously lambed, due to the difficulty of sponge placement in young ewes, but the one value for ewe lambs reported here appeared to be exceptionally high (6).

Ewes bred following sponge removal were all mated within a period of  $2.8 \pm 0.4$  days ( $\bar{x} \pm SE$ ) (mean of 9 breeding groups, involving 138 ewes) with a maximum breeding period of five days in one flock. Synchronized flocks of ewes had lambing periods averaging  $5.8 \pm 0.5$  days ( $\bar{x} \pm SE$ ) (mean of 14 breeding groups, involv-

ing 188 ewes) with the extreme being 12 days.

As can be seen in Table I, two groups of Suffolk ewes responded rather poorly, one was a group of ewe lambs in which sponge losses were high (flock D) and the other a group of ewes bred by an inexperienced, yearling ram (flock E). Estrous synchronization of young animals should be restricted to sexually mature maiden ewes in good condition. Only mature, experienced rams with good semen quality should be used and generally low ewe to ram ratios are preferable, especially for out of season breeding (2,3,6). If the two groups of ewes mentioned above were omitted, an average number of ewes lambing to synchronized estrus of 79% was obtained (based on 455 ewes) with an average of 1.79 lambs born per ewe lambing. These results are similar to previous studies (2) in which, if ewes were allowed to breed at the synchronized estrus and one subsequent estrus, combined con-

TABLE I  
SUMMARIZED RESULTS OF BREEDINGS AT SYNCHRONIZED ESTRUS IN  
COMMERCIAL SHEEP FLOCKS IN SASKATCHEWAN AND ALBERTA

Breed	Pro-ducer	Month Bred	Number of Ewes Treated	Ram to Ewe Ratio	Number of Ewes Lambing <sup>a</sup>	Lambing Percentage <sup>b</sup>
Dorset	A	May	26	<sup>c</sup> 1:12 <sup>c</sup>	76	184
Dorset	A	July	23	1:12	91	176
Perendale	A	May	16	1:12	60	122
Suffolk	B	August	38	1:10	79	260
Rambouillet	B	August	41	1:10	78	184
Dorset	C	June	20	1:20	90	194
Dorset	C	June	20	1:20	95	174
Dorset	C	June	5 <sup>d</sup>	1:5	80	225
Suffolk	D	October	16	1:16	94	207
Suffolk	D	October	13 <sup>c</sup>	1:13	45	120
Suffolk	E	September	9 <sup>d</sup>	1:9	11	300
Suffolk	E	September	21	1:10	57	200
Dorset	F	September	18	1:7	94	200
Dorset	F	November	17	1:5	82	200
Suffolk	G	September	16	1:16	88	200
Rambouillet	H	August	10	1:10	60	200
Crossbreds	I	June	62	1:15	44	144
Crossbreds	I	September	60	1:15	58	174
Crossbreds	J	September	8	1:3	100	130
Crossbreds	J	October	16	1:5	100	213
Suffolk	K	November	22	1:22	91	190

<sup>a</sup>Ewes lambing to synchronized estrus as a percentage of ewes treated.

<sup>b</sup>Number of lambs per 100 ewes lambing.

<sup>c</sup>Rounded to nearest whole number.

<sup>d</sup>Yearling rams used.

<sup>e</sup>Ewe lambs.

<sup>1</sup>Repromap, Tuco Products Co., Orangeville, Ontario.

<sup>2</sup>Equinex, Ayerst, Winnipeg, Manitoba.

ception rates closer to 100% were observed (2). It has been shown previously that in breeds of sheep with a lengthy seasonal anestrus, fertility to estrous synchronized breedings in midanestrus is depressed (2,6). This problem can be partly circumvented by using breeds with a long breeding season such as the Dorset or Finn. Dorset ewes in the present study responded well at all synchronized breedings. Although the efficacy of using PMSG cannot be addressed from the present observations, in previous studies it has been shown that PMSG improves conception rates out of season and although not always consistently, appears to improve ovulation rate irregardless of season (2,6,7).

Estrous synchronization in the ewe allows matings to occur at a predetermined time and can facilitate year round lamb production. With the judicious choice of breed and perhaps photoperiod manipulation (8), year round production and high fertility can be obtained. However, the success of controlled breeding requires excellent management, especially nutritional management.

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#### References

- ROBINSON T.J. Use of progestogen-impregnated sponges inserted intravaginally or subcutaneously for the control of the oestrous cycle in the sheep. *Nature* 1965; 206:39-41.
- GORDON I. Hormonal control of reproduction in sheep. *Proc Br Soc Anim Prod* 1975; 4:79-93.
- THIMONIER J, COGNIE Y. Application of control of reproduction in sheep in France. Symposium on management of reproduction in sheep and goats. University of Wisconsin, Madison, Wisconsin, A.S.A.S. 1977: 109-118.
- ROBINSON T.J. The seasonal nature of reproductive phenomena in the sheep. II. Variation in fertility following synchronization of oestrus. *J Reprod Fertil* 1971; 24:19-27.
- GORDON I. Induction of early breeding in sheep by standard and modified progestogen-PMS treatments. *J Agric Sci (Cambridge)* 1971; 76:337-342.
- RAWLINGS N.C., JEFFCOATE I.A., SAVAGE N.C., STEUART D.M.K., STEUART L.H.M. The effect of season and technique on synchronized and induced estrus and the induction of lambing in the ewe in a commercial setting. *Theriogenology* 1983 (in press).
- HACKETT A.J. Effect of dose of pregnant mare's serum gonadotrophin on the reproductive performance of ewes synchronized for estrus and housed in total refinement. *Can J Anim Sci* 1982; 62:291-294.
- VESSELY J.A. Induction of lambing every eight months in two breeds of sheep by light control with or without hormonal treatment. *Anim Prod* 1975; 21:165-174.

### A Syndrome in Young Beef Calves (Simmental Cross) of Unknown Etiology

DEAR SIR:

I have observed a syndrome in young beef calves over the past five years which I believe is not described in any books or journals. The odd thing about it is that it has been occurring mostly on one farm and only very sporadically elsewhere. These calves are affected at between one to three weeks of age. They usually have a normal temperature, are mentally depressed, have little or no appetite and stagger as if drunk when attempting to walk; the back legs seem especially weak. They tend to "warm out" of it, or walk a little steadier the further they go. Their abdomen looks, though not always, rather full, and they pass large volumes of caseous, undigested feces. Occasionally they will become moderately dehydrated. Most will respond to treatment with *Lactobacillus acidophilus* in capsules,<sup>1</sup> although some will have to be taken off milk and given oral electrolytes, and the occasional one needs intravenous electrolytes and to be kept warm. This has happened to calves from heifers and from older cows and not necessarily to those from high milk producers. This

herd has mainly Simmental cross cows in it. The incidence has been about 5% over the past five years, but has increased to about 15% so far this year. The owner's impression is that the incidence has been a little greater when the quality of the cows' feed was better. I would like to know if anyone has experience with this syndrome and could suggest a possible etiology.

Thank you.

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### Possibility of Virally Induced Lymphoma in Pet Ferrets

DEAR SIR:

In the last eight months, two cases of lymphoma with pleural effusions were diagnosed in mature, unrelated pet ferrets, in one household. The owner had lost three cats (familialy related) four years previously with feline leukemia virus (FeLV) related diseases. The ferrets were exposed to these cats.

Tests for FeLV in the affected ferrets, and in two others in the house, were negative by the ELISA test.

One ferret was successfully treated with a combination of prednisone, cyclophosphamide and cytosine arabinoside for six months before a relapse occurred and the patient died.

Further studies are underway to determine any infectious agent, and any relationship to FeLV. A full report will be submitted when results are known.

Reference has been made to serologically positive ferrets (1) when tested for FeLV and readers should be alerted to the possibility of virally induced lymphoma in this species.

Sincerely,

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#### References

- LENNOX MR, BERNARD SL. A clinical guide to the pet ferret. *Comp Cont Ed* 1983; 5(1): 25-34.

<sup>1</sup>Bacid Cap. Arlington Lab., Div USV Pharm Canada Ltd., Pointe Claire, Quebec.