

# Lambing and neonatal behaviour of Djallonke × Sahel crossbred sheep. 2. Neonatal behaviour

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## SUMMARY

Observations were made of the behaviour of lambs during lambing of 52 ewes. The parameters recorded were the time the lamb stood up after being born, number of attempts at standing, time the lamb sucked after standing and the number of attempts at sucking. The effects of age and parity of dam, and birth weight and sex of lamb on these behavioural characteristics were analysed. Age and parity of dam, and birth weight and sex of lamb significantly ( $P < 0.01$ ) influenced the time the lamb sucked after standing and the number of attempts at sucking. These parameters, however, did not significantly ( $P > 0.05$ ) influence the time lamb stood up after birth and the number of attempts at standing.

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## Introduction

Many sources of wastage may contribute to a reduced rate of multiplication in sheep. Of these, failure of lambs to survive the first few days of life is important and may constitute a very great proportion of the losses. The lambs may die during the neonatal period as a result of lack of proper lambing management. For proper lambing management to be instituted, the behaviour of both the dam and the neonate must be well understood. The behaviour of the dam during lambing has been reported (Tuah, Oppong-Anane & Owusu-Aduomi, 1987-1990). There are no records on the behaviour

## RÉSUMÉ

TUAH, A.K., OPPONG-ANANE, K. & OWUSU-ADUOMI, K.: *Agnelage et le comportement neo-natale des moutons métis Djallonke × Sahel. 2. Le comportement neo-natale.* Les comportements de cinquante-deux brebis ont été observés pendant l'agnelage. Les paramètres enregistrés étaient le temps à lequel les agneaux se sont dressés après la naissance, le nombre d'essai de rester debout, le temps à lequel les agneaux ont tété après être debout et le nombre d'essai de téter. Les effets d'âge et la parité de la mère et le poids à naissance et la sexe des agneaux sur ces paramètres ont été analysés. L'âge et la parité de la mère et le poids et la sexe des agneaux ont significativement influencé ( $P < 0.01$ ) le temps à lequel des agneaux ont tétés après ils se sont dressés et le nombre d'essai de téter. Ces paramètres, cependant, n'ont pas significativement influencé ( $P > 0.05$ ) le temps à lequel des agneaux se sont dressés après la naissance et le nombre d'essai de rester debout.

of lambs of the West African breeds of sheep at birth. This trial was, therefore, conducted to study the behaviour of the neonates at lambing.

## Materials and methods

Source of data, location of the trial, feeding, housing and general management of the flock have been described (Tuah *et al.*, 1987-1990).

### *Time and number of attempts at standing*

The time the lamb succeeded in standing for more than 1 min after birth was recorded. The number of attempts was counted, one for each failure.

*Time and number of attempts at sucking*

Time at sucking was the time the lamb succeeded in seeking the teats and actively sucked after standing. Each movement towards the teats was counted as one until it succeeded in sucking.

*Age and parity of the dam*

The age and parity groups of the dams were the same as previously described (Tuah *et al.*, 1987-1990).

*Birth weight and sex of the lamb*

There were five birth weight groupings: 1.1 - 1.5, 1.6 - 2.0, 2.1 - 2.5, 2.6 - 3.0 and 3.0 and above. The sex of the neonate was also recorded.

*Experimental design and statistical analysis*

The experimental design and the statistical analysis were the same as previously described (Tuah *et al.*, 1987-1990).

**Results***Standing*

The mean time and number of attempts made at standing were 20 min and 16.8 respectively. Both were not significantly ( $P>0.05$ ) affected by age and parity of dam and birth weight and sex of lamb (Tables 1, 2, 3 and 4). However, a lamb from a

maiden ewe took the longest time to stand (67 min) while a lamb born to a pluriparous ewe stood up 8 min after birth. The mean time of standing after birth generally increased with an increase in birth weight (Table 1). The time of standing also decreased from males to females (Table 2). Lighter lambs made less number of attempts (11.5) than heavier lambs (19.1; Table 1). Although these did not show any significant differences, the number of attempts at standing was less in lambs from older ewes than those from younger ewes (Tables 3 and 4). Females also made more attempts than males (Table 2).

*Sucking*

The time and number of attempts made at sucking after standing were significantly ( $P<0.01$ ) influenced by age and parity of the dam, and birth weight and sex of lamb. The mean time and number of attempts at sucking were 13.5 min and 17.5 respectively. It ranged between 8.3 - 20.9 min for time of sucking after standing and 15.2 - 25.3 for the number of attempts.

Lambs from younger ewes sucked later than those from older ewes (Tables 3 and 4). The time of sucking was longest (62 min) in a lamb born to a maiden ewe and shortest (3 min) for a lamb born to an experienced ewe.

The mean time of sucking generally decreased

TABLE 1

*Effect of Birth Weight of Lamb on Neonatal Behaviour*

<i>No. of lambs</i>	<i>Birth weight (kg)</i>	<i>Mean time of standing (min)</i>	<i>Mean no. of attempts</i>	<i>Mean time of sucking</i>	<i>Mean no. of attempts</i>
2	1.1-1.5	12.5	11.5	8.0 <sup>b</sup>	15.5 <sup>a</sup>
10	1.6-2.0	13.3	19.1	17.9 <sup>a</sup>	29.2 <sup>b</sup>
28	2.1-2.5	18.1	12.8	16.1 <sup>a</sup>	19.0 <sup>a</sup>
12	2.6-3.0	10.0	16.8	6.5 <sup>b</sup>	12.0 <sup>a</sup>
2	3.0 & above	15.0	14.0	6.5 <sup>b</sup>	12.0 <sup>a</sup>
SE		1.3	1.4	2.3	3.0

Means in the same column bearing different superscripts are significantly ( $P<0.01$ ) different.

TABLE 2

*Effect of Sex of Lamb on Neonatal Behaviour*

<i>No. of lambs</i>	<i>Sex</i>	<i>Mean time of standing (min)</i>	<i>Mean no. of attempts</i>	<i>Mean time of sucking (min)</i>	<i>Mean no. of attempts</i>
23	Male	15.3	15.1	15.1 <sup>a</sup>	20.9 <sup>a</sup>
29	Female	14.4	17.1	13.3 <sup>b</sup>	18.3 <sup>b</sup>
SE		0.4	1.0	0.7	1.3

Means in the same column bearing different superscripts are significantly ( $P < 0.01$ ) different.

TABLE 3

*Effect of Age of Dam on Neonatal Behaviour*

<i>No. of lambs</i>	<i>Age of dam (yr)</i>	<i>Mean time of standing (min)</i>	<i>Mean no. of attempts</i>	<i>Mean time of sucking (min)</i>	<i>Mean no. of attempts</i>
20	2	21.7	16.3	19.8 <sup>a</sup>	25.1 <sup>a</sup>
10	3	10.6	14.4	12.0 <sup>b</sup>	16.7 <sup>b</sup>
9	4	13.9	15.7	8.7 <sup>b</sup>	14.1 <sup>b</sup>
13	5 & above	11.8	15.7	8.3 <sup>b</sup>	8.9 <sup>c</sup>
SE		4.6	0.4	2.7	3.4

Means in the same column bearing different superscripts are significantly ( $P < 0.01$ ) different.

TABLE 4

*Effect of Parity of Dam on Neonatal Mortality*

<i>No. of lambs</i>	<i>Parity</i>	<i>Mean time of standing (min)</i>	<i>Mean no. of attempts</i>	<i>Mean time of sucking (min)</i>	<i>Mean no. of attempts</i>
16	1	22.2	17.3	22.1 <sup>a</sup>	29.5 <sup>a</sup>
13	2	15.2	12.8	12.0 <sup>b</sup>	13.9 <sup>b</sup>
5	3	17.4	23.3	10.5 <sup>b</sup>	14.0 <sup>b</sup>
6	4	8.5	13.0	9.7 <sup>b</sup>	14.0 <sup>b</sup>
12	5 & above	10.7	15.0	9.4 <sup>b</sup>	14.0 <sup>b</sup>
SE		2.5	2.0	2.4	3.1

Means in the same column bearing different superscripts are significantly ( $P < 0.01$ ) different.

with increase in birth weight (Table 4) and also from males to females (Table 2). Lambs from experienced ewes made the least number of attempts at sucking (8.9) while those from younger ewes made the most (25.1; Table 3). The number of attempts decreased with increase in birth weight (Table 1) and also from

males to females (Table 2).

### Discussion

Lambs born to experienced ewes stood earlier than those born to maiden ewes. This was because parturition in maiden ewes lasted longer and their

lambs were born weaker than those from experienced ewes. Also most of the maiden ewes had lambed in the lying position. Blauvelt (1954), Herscher, Richmond & Moore (1963) and Selman, McEwan & Fisher (1970) have reported that cattle age and parity significantly influenced the time of standing. They noted that calves born to cows stood up 59 min after birth and those born to heifers stood up 78 min after birth. This was because the calves from heifers were born in the lying position. Calves born in the lying position were delivered into a pool of amniotic fluid which made the ground slippery and delayed the time of standing. The time of standing generally increased with increase in birth weight because heavier lambs had to expend much energy and time to raise themselves up.

Lambs from experienced ewes made the least number of attempts although they were heavier than those from younger ewes. This was because they were dropped onto a firm ground while maiden ewes delivered their offsprings into a pool of amniotic fluid. It was expected that females would make the least number of attempts at standing than males because of weight differences. However, males made the least number of attempts.

The first sucking drive is not related to hunger but is a reflex which slowly subsides (Kilgour, 1972). This sucking drive reaches a peak 2-3 h after birth (Kilgour, 1972). If contact is not made after this time, sucking becomes difficult to establish and such lambs may die of starvation. Lambs from maiden ewes sucked later than those from experienced ewes. This was because experienced ewes met and directed their advancing lambs to the udder while maiden ewes backed away from their lambs. The effect of parity on sucking in this work is similar to that made by Smith (1966) who noted that lambs born to experienced ewes sucked earlier than those born to maiden ewes. However, in cattle, Selman *et al.* (1970) reported that calves from cows sucked later ( $261 \pm 129.1$  min) than those from heifers ( $218 \pm 113.8$  min). They attributed this to the fact that older cows spent a longer time grooming their calves.

Heavier lambs sucked earlier than lighter lambs because the heavier lambs were dropped by older ewes which aided their lambs in sucking. A similar observation was made in males and females. The number of attempts at sucking decreased with an increase in age and parity of dam as experienced ewes helped their lambs to suck.

### Conclusion

The time and number of attempts at sucking was significantly influenced by age, parity, birth weight and sex of lambs. Lambs should be assisted to stand and suck after birth. This practice will help to reduce the rate of neonatal mortality.

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