

Mammary secretion of a newborn kid of dairy goat

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The mammary secretion in human infants is called witches milk and have frequently been observed and reported. The milk secretion in newborn calves has been known on rare occasions.¹⁾ For the farm animals other than calf, no literature is available on this subject.

The present authors had an opportunity to observe a newborn kid having the mammary secretion.

Observations and experiment

A goat of Saanen breed of a farmer in Saidaiji-city, Okayama prefecture, gave a birth to a female kid on 29th of April in this year. The kid began to cry frequently about 3 days after the birth. The udder of the newborn kid was found abnormally developed and was milked by squeezing the teats. Thereafter, the kid has been milked twice daily. Measurements of body parts of the kid at that time are shown in Table 1. The amount of milk obtained was 25 ml at first and increased as lactation advances during the period of the observation. The amount of milk and its

Table 1. Measurements of body parts of the kid

Body weight	5.95kg
Height, withers	45cm
Body length	43"
Heart girth	40"
Hip width	8"
Udder, length	9"
" , width	6"
" , depth	6"
Teat, length	1.5"
" , diameter	0.8-0.9"

change are shown in Table 2 and Fig 1. The lactation continues even now and the amount of milk at full four months of lactation was about 200ml. The taste and flavour of the milk were normal. It was interested to determine the composition of the milk. Percentage of fat was determined by the Gerber's method, lactose by the Layn Eynon's method, protein by the Kjeldhal's method, ash by the dry ashing method. Specific gravity of the milk was determined by lactodensitmetric method. Acidity was expressed as percentage of lactic acid equivalent. The results of the

determination are shown in Table 3. The milk of the kid seemed to be slightly richer than normal milk of goat.²⁾

For testing the effect of lactogenic hormone on witches milk secretion, 200 I. U. of prolactin was injected subcutaneously on 16th of May (17 days after the birth) and followed by 3 injections of 100 I. U. of the hormone every other day. There was a tendency that the injection increased slightly the yield of milk, though the increase was not remarkable.

Mammary gland growth is stimulated experimentally by treatment of estrogen and

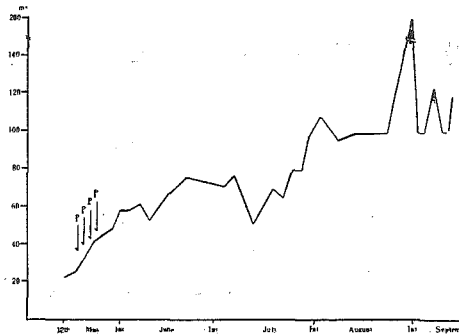
Table 2. The amount of milk and prolactin treatment

Date	Milk yield			Injection of prolactin
	Morning	Evening	Total	
May 12	10 ml	12 ml	22 ml	
13	10	15	25	
14	10	15	25	
15	10	15	25	
16	10	11	21	200 I. U.
17	15	17	32	
18	13.5	20	33.5	100 I. U.
19	16	17.5	33.5	
20	14	17	31	100 I. U.
21	19	21.5	40.5	
22	20	20	40	100 I. U.
23	20	22	42	
24	23	22	45	
25	23	28.5	51.5	
26	24	26	50	
27	23	25	48	
28	28	26.5	54.5	
29	23	27	50	
30	27.5	30	57.5	
31	24	27	51	
June 1	28	26	54	
2	24	38	62	
3	32	26	58	

progesterone.^{3,4)} Relaxin in synergism with these hormones also stimulates mammary gland growth.^{5,6,7,8)} Ovary and placenta are involved in mammary development as source of these hormones. Ordinarily, secretory tissue is not developed during the fetal period and at the time of birth remains unfunctional. In some species, the mammary gland is stimulated abnormally by the hormone of pregnancy and functionated to secrete milk.

It has been believed that mammary development in the fetal period is due to hormones from the placenta of the mother and it may also be true in the case of this kid.

Fig. 1. Amount of witches milk of the kid observed.



P : Injection of prolactin

Table 3. Composition of the "witches milk" of a newborn kid

Sample	Fat	Protein	Lactose	Ash	Water	Total solid	Specific gravity*	Acidity**
Pooled milk from a period of May 12 to May 15	5.90	6.17	4.15	0.70	83.07	16.92	1.0372	0.18
Pooled milk from a period of May 17 to May 21	5.35	5.25	4.46	0.71	84.23	15.77	1.0370	0.17
Pooled milk from a period of May 22 to May 26	5.00	4.52	4.45	0.73	85.30	14.70	1.0360	0.17

* At 15°C

** Lactic acid equivalent

The present authors have never known any reports concerning so called "witches milk" in goats because of the limited literatures. This is the first case of witches milk in the species for them. Probably, witches milk in kids also seems rare.

Summary

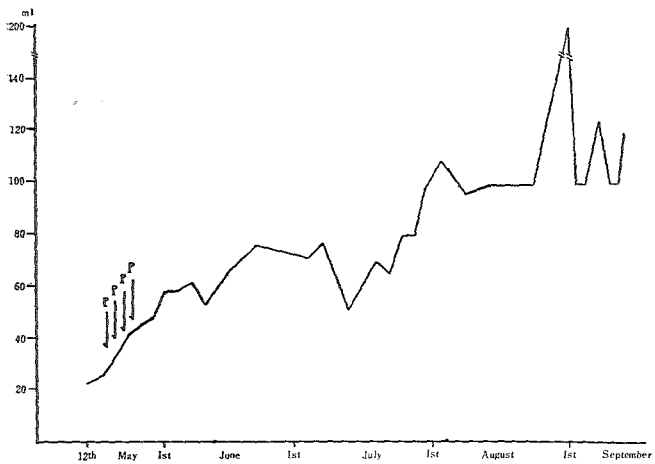
A newborn kid of Saanen breed had an abnormally developed udder and secreted witches milk.

The amount of milk obtained by milking twice a day was recorded for the first four months of lactation.

The composition of the milk was determined. The injection of prolactin seemed to have a little effect on the secretion.

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新生仔山羊の泌乳

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摘 要

ザーネン種の仔山羊が新生時に、異常に発達した乳房をもっており、いわゆる魔女の乳を分泌した。

1日2回の搾乳による乳量を4カ月間記録し、この乳の組成を測定した。

プロラクチンの注射は、この乳の分泌に対して、僅かに効果があるように思われた。

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Fig. 2. The newborn kid having the mammary secretion.
The picture taken 2 weeks after the birth.

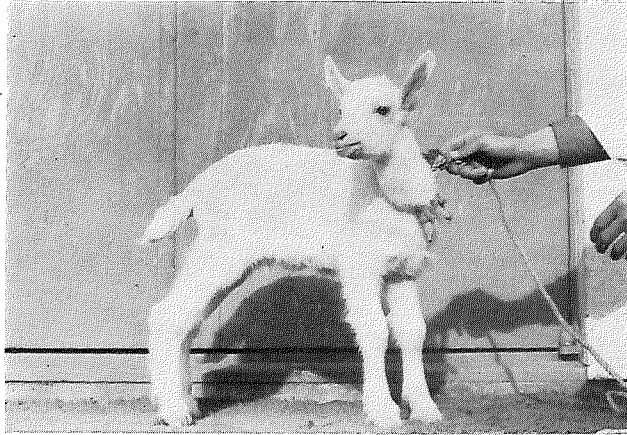


Fig. 3. The udder and teats of the kid.



Fig. 4. The dam of the kid observed.

