

RESEARCHES ON GROOMING BEHAVIOR OF THE DAM-CALF COUPLE DURING THE FIRST WEEK AFTER CALVING

CERCETĂRI PRIVIND COMPORTAMENTUL DE ÎNGRIJIRE A VIȚELULUI DE CĂTRE VACA MAMĂ ÎN PRIMA SĂPTĂMÂNĂ DUPĂ FĂTARE

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This paper is dealing with the maternal behavior during the first week after calving. Researches were carried out during the winter season on Romanian Black and White breed dam-calf couples. The behavior of calves and their mothers was nonstop video recorded during the first, second and seventh day after calving. For a better interpretation the recorded material was divided in three periods for every 24 hours of surveillance: 07:00 to 15:00, 15:00 to 23:00, and 23:00 to 07:00. Calves received attention from their mothers in 18 to 33 grooming periods during the first day after calving. The number of grooming periods decreased to 6 – 15 periods per day in the seventh day after calving. The total length of grooming periods also decreased from the first day to the seventh day after calving from 26.5 minutes to 7.4 minutes on each 8-hour time frame. There were also contacts between mother cows and their calves that were not followed by grooming (sniffing). The number of contacts without grooming was higher during the first two days after calving and decreased on the seventh day after calving. During the first week of life calves received, 55.6 minutes per day of care from their mothers, and there were, on average, 8.1 contacts without grooming between mothers and calves.

Key words: mother cows, newly born calves, grooming behavior, Romanian Black and White

Introduction

During the past years major progress in video recording devices, the reduced costs for video cameras and video recorders made possible very precise studies of cattle behavior. Very precise data obtained from those studies were used to develop new and better technologies for cattle. These technologies are based on high-degree animal concentration and cattle are maintained within large groups in small spaces in very artificial conditions. The time spent for each animal is more and more reduced. In those conditions, the modification of behavior caused by some stress factors affects the animal production and brings economical losses.

This paper is dealing with the maternal behavior during the first week after calving.

Materials and Methods

Researches were carried out during the winter season between 09.02.2006 and 29.02.2006 at the university research farm, on a number of 5 dam-calf couples from Romanian Black and White breed.

The mother cows and their calves were housed in the maternity barn on 4.1 x 2.5 m pens. The behavior of calves and their mothers was video recorded nonstop during the first, second and seventh day after calving.

To record the behavior of dam-calf couple a Panasonic video camera was used connected to a Panasonic videorecorder type NV-FJ622EE-K. For recording 180 minutes video cassettes were used set in the Ep mode so that it was possible to record 9 hours on each cassette. Also, the video camera was set to record the date and hours in a mode that included minutes and seconds, which helped the timing process.

For a better interpretation, the recorded material was divided in three periods for every 24 hours of surveillance: 07:00 to 15:00, 15:00 to 23:00 and 23:00 to 07:00.

In the processing of recorded data, the grooming behavior was observed for dam-calf couple by counting and timing the periods.

Data obtained from these observations was processed with ANOVA/MANOVA.

Results and Discussions

Calves received attention from their mothers in 18 to 33 grooming periods during the first day after calving. On an 8-hour time frame there were on average 6–11 grooming periods in the first day after calving (Table 1). The number of grooming periods decreased to 6–15 periods per day in the seventh day after calving, with an average of 2-5 periods on 8-hour time frame (Table 3).

The total length of grooming periods also decreased from the first to the seventh day after calving from 26.5 minutes to 7.4 minutes on each 8-hour time frame, as presented in Tables 1, 2 and 3.

There were also contacts between mother cows and their calves that were not followed by grooming (sniffing). The number of contacts without grooming was higher during the first two days after calving and decreased on the seventh day after calving. The values were between 9.7 contacts in the time frame 15:00 to 23:00 from first day after calving to 0.44 contacts in the time frame 23:00 – 07:00 from the seventh day after calving.

During the first week of life calves received 55.6 minutes per day of care from their mothers, and there were, on average, 8.1 contacts without grooming between mother cows and calves.

The length of a grooming period was relatively constant during all the days of the experiments and during all 8-hour time intervals, but there were some differences in the second day after calving between the periods 15:00 to 23:00 with an average of 1.9 minutes and period 23:00 to 07:00 with an average of 3.8 minutes.

The only significant difference ($p < 0.05$) was observed in the second day after calving. The average grooming length was 1.9 minutes from 15:00 to 23:00 hours, while in the period from 23:00 to 07:00 the value was double, 3.8 minutes.

Table 1

Grooming behavior of the dam-calf couple (daily variation) in the first day after calving

Day period		07:00-15:00	15:00-23:00	23:00-07:00
Grooming periods	X±SEM	7.3±0.88	9.2±1.89	8.2±1.98
	SD	1.53	3.77	1.99
	v%	20.8	40.8	24.1
Total length of grooming periods (min.)	X±SEM	26.5±5.63	25.6±5.51	24.6±7.01
	SD	9.76	5.01	7.34
	v%	26.8	19.5	29.8
Length of a grooming period (min./period)	X±SEM	3.5±0.36	2.6±0.37	2.9±0.51
	SD	0.63	0.73	1.02
	v%	17.8	28.0	34.8
Contacts without grooming	X±SEM	2.3±0.63	7.5±1.86	3.5±0.5
	SD	0.77	3.24	1
	v%	33.0	43.2	28.6

Table 2

Grooming behavior of the dam-calf couple (daily variation) in the second day after calving

Day period		07:00-15:00	15:00-23:00	23:00-07:00
Grooming periods	X±SEM	6.2±0.93	11.5±1.32	5.5±1.19
	SD	1.29	2.65	2.38
	v%	20.6	23.0	43.3
Total length of grooming periods (min.)	X±SEM	16±4.03	20.4±3.36	20.1±3.11
	SD	6.02	5.57	6.22
	v%	37.6	27.3	30.9
Length of a grooming period (min./period)	X±SEM	2.1±0.21	1.9±0.26	3.8±0.46
	SD	0.34	0.51	0.92
	v%	16.3	26.5	23.9
Contacts without grooming	X±SEM	3±0.39	3.7±0.33	3.2±0.5
	SD	0.86	0.69	1.07
	v%	28.7	18.3	32.8

Table 3

Grooming behavior of the dam-calf couple (daily variation) in the seventh day after calving

Day period		07:00-15:00	07:00-15:00	07:00-15:00
Grooming periods	X±SEM	4.4±0.57	5.8±0.75	2.6±0.25
	SD	1.17	1.61	0.56
	v%	26.5	27.7	21.4
Total length of grooming periods (min.)	X±SEM	20.2±4.3	15.6±1.34	7.4±1.02
	SD	7.97	2.94	2.99
	v%	39.4	18.8	40.3
Length of a grooming period (min./period)	X±SEM	3.1±0.34	3.5±0.33	2.1±0.24
	SD	0.85	0.84	0.54
	v%	26.9	23.7	25.1
Contacts without grooming	X±SEM	1.4±0.17	0.6±0.1	0.8±0.05
	SD	0.42	0.22	0.15
	v%	29.9	37.3	18.6

Conclusions

Calves received attention from their mothers in 18 to 33 grooming periods during the first day after calving. The number of grooming periods decreased to 6–15 periods per day in the seventh day after calving.

The total length of grooming periods also decreased from the first day to the seventh day after calving from 26.5 minutes to 7.4 minutes on each 8-hour time frame.

The number of contacts without grooming was higher during the first two days after calving and decreased on the seventh day after calving.

During the first week of life, calves received 55.6 minutes per day of care from their mothers, and there were, on average, 8.1 contacts without grooming between mother cows and calves.

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Scopul acestui studiu a fost determinarea principalelor aspecte care caracterizează comportamentele de îngrijire al vițelului de către vaca mamă în prima săptămână după fătare. Experimentele s-au desfășurat în sezonul de iarnă pe cupluri vacă mamă cu vițelul de rasă Bălțată cu negru românească. Pentru o interpretare cât mai bună a datelor obținute, materialul înregistrat a fost împărțit în trei perioade pentru fiecare zi de supraveghere: de la 07:00 la 15:00, de la 15:00 la 23:00 și de la 23:00 la 07:00. Vițelii au fost îngrijiți de către mamele lor pe parcursul a 18 până la 33 reprize pe parcursul primei zile de după parturiție. Numărul acestor reprize a scăzut până în ziua a șaptea la 6-15 perioade de îngrijire. Durata totală de timp a scăzut, de asemenea, din prima zi după fătare până în a șaptea zi de la 26 minute la 7,4 minute pe un interval de 8 ore. Au existat, de asemenea, contacte între vacile mame și vițelii lor care nu au fost însoțite de lins. Numărul contactelor neînsoțite de lins a fost mai mare pe parcursul primelor două zile după fătare și a scăzut în a șaptea zi după fătare. Pe parcursul primei zile după fătare vițelii au beneficiat de 55,6 minute de îngrijire din partea vacilor mamă și au fost de asemenea 8,1 contacte fără a fi urmate de lins.

Cuvinte cheie: comportament de îngrijire, vaci mame, vițel nou-născuți, Bălțată cu negru românească