Maternal age but not parity affected daughter's fertility during first lactation

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BACKGROUND & OBJECTIVE

• Previous studies reported that Holstein females whose dams were lactating while pregnant produced less milk and had shorter lives than those born to dams that were non-lactating during pregnancy.

The objective of this retrospective observational study was to determine impacts of maternal parity (heifer vs. cow) and age (AGE) or days in milk (DIM) at conception:

• on <u>reproductive performance</u> of Holstein female offspring.

•on <u>305-ME (mature equivalent) milk yield</u> of first lactation.

MATERIALS & METHODS

• Data obtained from female offspring of 599 dams (214 heifers and 385 cows).

- Independent variables: maternal parity, dam's DIM (in cows) and AGE (in heifers) at conception.
- Dependent variables for each female offspring: conception rate to first AI, interval from birth or calving to conception as heifers and during first lactation, respectively, and 305-ME milk yield of first lactation.

• Data were analyzed using ANOVA, Chi^2 and Kaplan-Meier survival analysis

RESULTS

- 95.9% of the heifers were pregnant by 630 d of life.
- 77.5% of primiparous females were pregnant by 300 d postpartum.
- 305-ME milk yield was 8774.64 ± 63.48 kg.

<u>Table 1. Effect of maternal parity (heifer vs. cow) on reproductive performance of Holstein females offspring.</u>

	HEIFERS (n=599)		FIRST LACTATION (n=482)	
	CR after first AI	Interval birth-conception (d)	CR after first AI	Interval calving-conception (d)
Heifer's offspring	59.8%	455.3 ± 4.2	34.1%	147.4 ± 6.1
Cows' offspring	64.2%	448.5 ± 2.9	36.2%	150.4 ± 4.6

<u>Table 2. Effect of maternal AGE (heifers) and DIM (cows) at conception on fertility of offspring during first lactation.</u>

		FIRST LACTATION (n = 482)	
		Pregnant after first AI (n=171)	Non pregnant after first AI (n=311)
Heifers dam	Maternal AGE (d) at conception	**421.7 ± 4.1[a]**	**437.6 ± 3.5[b]**
Cows dam	Maternal DIM at conception	127.1 ± 5.3	137.6 ± 5.5

[a,b] Within row, values without a common superscript differed (p<0.01)

- **Daughters born to heifers produced per day 1.1 kg of milk more than those born to cows.** (305-ME; 8995.2 ± 128.2 vs. 8655.2 ± 88.9 kg; p=0.02)

SUMMARY

• No significant effect of maternal parity on offspring reproductive performance was observed.

•Primiparous offspring of younger heifers were more likely to become pregnant after first AI during first lactation.

•Daughters of heifers produced more milk during first lactation.

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