

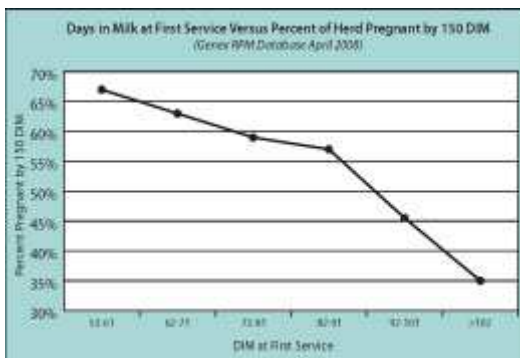
Doin' the First Service Right

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Many feel the most effective strategy for increasing profits is cutting expenses. However, AgSource Cooperative Services' Profit Opportunity Analyzer[®] (POA) illustrates how the big money is often in uncovering hidden income opportunities, and milking herd reproduction is a big ticket opportunity for many producers. Combing POA information with Genex research, we learn that first and foremost the key management practice for improving a milking herd's reproductive performance is getting semen into cows. Delaying first service has many substantial effects on the profitability and reproductive success of your herd.

Reduced Number of Cows Pregnant

The chart below, derived from Genex's Reproductive Profit Manager[™] data illustrates the effect delayed first breeding has on the percent of cows pregnant at 150 Days in Milk (DIM). The chart shows getting semen into cows between 52 and 61 DIM results in approximately 67 percent of cows pregnant by 150 DIM. Waiting until 82 to 91 DIM for first service results in a lower number (57 percent) of cows pregnant by 150 DIM. Waiting even longer for first service results in drastically fewer cows bred by 150 DIM.



Tied at the Hip - Pregnancy Rate and Herd Turnover

Research by D.Z. Caraviello et al¹., printed in the *Journal of Dairy Science* found dairy managers tried to achieve cow pregnancies until 8.8 ± 0.9 failed inseminations, 300 ± 26 days postpartum or milk yield $<17.7 \pm 0.5$ kg per day. Nonpregnant cows were culled at 326 ± 36 days postpartum or milk yield $<16.4 \pm 0.3$ kg per day. The chart below (*Table 1*) illustrates how

reproductive performance and turnover are intertwined. Caraviello's findings are applied to five theoretical 100-cow herds that reach the end of their 55-day VWP on the same day, have consistent pregnancy rates every 21-day cycle and in which no cow dies or is culled for anything other than

Table 1: Pregnancy Rate and Reproductive Turnover

21-Day Increment	DIM	Pregnancy Rates Cows Becoming Pregnant in Each 21-Day Increment				
		25%	20%	15%	10%	5%
1 st	55-76	25.0	20.0	15.0	10.0	5.0
2 nd	77-98	18.8	16.0	12.8	9.0	4.8
3 rd	99-120	14.1	12.8	10.8	8.1	4.5
4 th	121-142	10.5	10.2	9.2	7.3	4.3
5 th	143-164	7.9	8.2	7.8	6.6	4.1
6 th	165-186	5.9	6.6	6.7	5.9	3.9
7 th	187-208	4.4	5.2	5.7	5.3	3.7
8 th	209-230	3.3	4.2	4.8	4.8	3.5
9 th	231-252	2.5	3.4	4.1	4.3	3.3
10 th	253-274	1.9	2.7	3.5	3.9	3.2
11 th	275-296	1.4	2.1	3.0	3.6	3.0
12 th	297-318	1.1	1.7	2.5	3.1	2.8
Open Cows Culled		3.2	6.9	14.2	28.2	54.0

reproduction.

Moving right to the bottom line of the table, the herd with a 20 percent pregnancy rate culls 6.9 cows or roughly seven percent of their herd for reproductive reasons. Contrast that with over 28 percent of the herd turned over for being open with the 10 percent pregnancy rate herd.

Extending the voluntary wait period by one 21-day increment results in 11 21-day cycles instead of 12 before hitting the 326 DIM mark. This increases the number of open cows making a bad situation even worse.

AgSource's POA measures the annual profit opportunity of milking herd turnover (after sales for dairy are removed) and shows the 80th percentile performance in this area is 22 to 28 percent turnover, dependent on herd size. Attaining a low turnover in the 22 to 28 percent range is simply an unattainable goal for a producer whose herd has a 10 percent pregnancy rate because 28 percent of the herd is already being culled for reproductive reasons. On the other hand, a dairy with a 20 percent pregnancy rate can have a normal death rate and cull a number of cows for feet and leg issues, mastitis problems, low production and reproduction and still stay near the 80th percentile for low turnover.

Even though milk prices are at historically high levels, the biggest cost of low reproductive performance is high replacement costs. These costs far and away outstrip lost milk production. Replacement cost is out of pocket costs for additional animals or the lost opportunity of being able to sell heifers or cows for dairy instead of slaughter.

Reduced Milk Income

POA shows early pregnancies generate the most profit opportunities for a herd. Even though replacement costs are the biggest cost of sub par herd reproductive performance, lost milk and calf incomes are substantial. As Table 2 indicates, projected annualized incomes are higher for cows bred earlier in lactation. This makes sense since you get more calves and more early lactation days with tighter calving intervals. The table was calculated using a herd in the 25,000 to 30,000 pound RHA range. The dollars are different but the trends are the same regardless of RHA.

Pregnancy Occurrence		Annualized Income
21-Day Increment	DIM	
1 st	55-76	\$5,909
2 nd	77-98	\$5,850
3 rd	99-120	\$5,791
4 th	121-142	\$5,732
5 th	143-164	\$5,673
6 th	165-186	\$5,613
7 th	187-208	\$5,554
8 th	209-230	\$5,496
9 th	231-252	\$5,439
10 th	253-274	\$5,384
11 th	275-296	\$5,329
12 th	297-318	\$5,276

The figures are based on milk price at \$19 per hundredweight and 6.5 percent interest rate.

To Sum It Up

So, how do you raise a herd's reproductive performance and pregnancy rate, thereby increasing your profit opportunities? Without a doubt, the most important step is getting semen into cows! Delaying first service breeding reduces the number of cows pregnant at 150 days, increases the number of reproductive culls and reduces milk income.

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¹Source: Caraviello et al., 2006.