A

Birth dates range 10 days based on service sire

search on crossbreeding is summarized by Bennet

grams Laboratory scientists at USDA’s Agriculture

ights from research by Animal Improvement Pro-

of issues. There were a number of good presenta-

ings and 100 daughters in the data set. Among

cluded in the study, a bull had to have 100 breed-

ities (PTAs) for service sire and cow sire GL. To be

health traits.

sire GL heritability is 12 percent, like that of many

service sire gestation length (GL) is 34 percent,

5.5 million available records.

they were not bred to an A.I. bull. That left about

nated females that had less than 87 percent breed

tween gestation length and stillbirths. Only ges-

AIPL researchers investigated the connection be-

1to 2 days earlier than males. Twins are born about

days sooner than those conceived during the spring

Swiss, and Guernsey breeds.

279.5 days. Jerseys and Holstein first-calf heifers

1999 to 2005 for five dairy breeds, were evaluated

est and longest gestation service sire was 10.6 days.

5.3 . . . meaning that the spread between the short-

Table 1. Gestation length varies by breed


As expected, more dead calves also occurred in

multiple births. In fact, stillbirth rates were 3.5

times higher for cows and 2.3 times higher for

heifers having multiple births. There were 2 percent

more dead calves when lactations were over 500

days, compared to those about 250 days in length.

Low-producing Holsteins milking less than 13,000

pounds of milk had 1.5 percent more dead calves

than those over 35,000. Lastly, stillbirth rates were

higher for cows in fifth and later lactations.

For live calves, avoid short, long dry periods

Much has been written on how shorter dry pe-

riods affect the cow. What about newborn calves?

A I PL researchers evaluated over 450,000 records to

see how dry periods affected the resulting calf.

For the calf’s sake, data suggest extreme dry pe-

riods under 40 days and those over 60 days should

be avoided. Stillbirth rates were the lowest for dry

periods 55 to 60 days in length. Stillbirth rates re-

mained low for dry periods between 40 and 60 days.

The negative effect of short dry periods was most

pronounced in dams with less than 30 days dry, with

5 percent fewer of their heifer calves surviv-

ing to the first lactation. Calving ease scores rose

(more difficult calving) as the dry period got longer

and plateau at about 70 days dry. Further research

on survival to first calving, adjusting for outside

effects, is needed.

All herds are not equal for progeny test

Researchers at AIPL and Penn State demon-

strated that heritabilities could be generated for

individual herds based on the relationship between

daughter records and either their dam records or

their sire predicted transmitting abilities (PTAs).

Personnel from A.I. studs then provided paternity

verification results from DNA marker analysis on

235 herds. The number of cows DNA tested per

herd ranged from 3 to 274 cows. The herd heri-

tabilities and sire misidentification rates were then

used to develop a misidentification rate prediction

formula. Using this formula, they evaluated records

from 7 million cows in nearly 21,000 herds.

They found there was a wide range in the use-

fulness of genetic information for sire evaluations

from herd to herd. On average, they estimated the

misidentification rate to be 13 percent. Misidentifi-

cation rates were higher in larger herds.

It makes sense that herds with accurate identifi-

cation are more valuable to A.I. sampling pro-

grams. But they also found that A.I. young sires

were less likely to enter proven lineups if they were

sampled in herds with low heritability (high misidentifi-

cation rates) compared to herds with average to excel-

lent identification. The researchers concluded that in the future, herd heritability es-

imates could be used to identify sires with poten-

tially underestimated genetic evaluations.

More cows die in July and August

There have been reports of more deaths among

milk cows. To take a hard look at the matter, re-

searchers looked at a 10 percent sample of all the

DHI records completed in the U.S. for a 11-year

time span. Herds with less then 400 lactations dur-

ing that time and those with death rates under 0.3

percent were excluded. Three breed groups were

evaluated: Holstein, Jersey, and other.

The frequency of lactations ending in death was

2.92 percent. There has been an upward trend in

deaths from 1995 to 2005, 1.72 percent was the

total increase. There was a spike in deaths from

2003 to 2004. That spike was likely due to a change

in USDA regulations that require downer cows to

be euthanized.

Deaths were more likely to occur in early lacta-

tion. Compared to lactations longer than 290 days,

lactations that terminated at less than 46 days had

a 16.5 percent higher death rate. Death rate stead-

ily rose with parity. By the eighth lactation or

greater, death rate was 2 percent higher than for

first-lactation cows.

<table>
<thead>
<tr>
<th>Breed</th>
<th>First calving</th>
<th>Second through fourth calves</th>
<th>Difference</th>
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<tbody>
<tr>
<td>Ayrshires</td>
<td>281.8</td>
<td>281.7</td>
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<tr>
<td>Brown Swiss</td>
<td>287.7</td>
<td>287.5</td>
<td>0.2</td>
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<tr>
<td>Guernseys</td>
<td>284.8</td>
<td>285.8</td>
<td>1.0</td>
</tr>
<tr>
<td>Holsteins</td>
<td>277.9</td>
<td>279.5</td>
<td>1.6</td>
</tr>
<tr>
<td>Jerseys</td>
<td>278.3</td>
<td>280.0</td>
<td>1.7</td>
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</table>

<table>
<thead>
<tr>
<th>Table 2. PTA range for gestation length (GL)</th>
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<tbody>
<tr>
<td>Effect</td>
</tr>
<tr>
<td>-------</td>
</tr>
<tr>
<td>Service sire</td>
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<td>Cow</td>
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<tr>
<td>Cow sire</td>
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<tr>
<td>Cow</td>
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