

Texas Dairy Matters

Higher Education Supporting the Industry

Impact Of Heifer Digital Dermatitis

Ellen Jordan, Ph.D.

Extension Dairy Specialist

Texas A&M AgriLife Extension Service

The Texas A&M University System

Once heifers are bred, they are frequently “put on the back burner” and largely ignored until 3 to 6 weeks before calving. Providing these animals with extra hoof care may pay dividends based on research recently reported from Wisconsin.

A total of 719 pregnant heifers, from a commercial Holstein herd known to have digital dermatitis, were classified as having no, one or multiple active digital dermatitis (DD) lesions during an approximate six-month study period prior to first calving. During this rearing period half of the heifers received organic trace minerals and the other half received inorganic minerals in their ration.

After calving, all heifers received a TMR formulated for 95 pounds of milk production. Heifers were housed in a sand-bedded freestall barn, where they were fed twice a day and milked three times a day.

Heifers with multiple cases of DD during the rearing period had reduced reproductive performance, as measured by conception at first service and days open (Table 1). No difference was noted in days to first service; however this farm was using first service synchronization; therefore none was expected.

If a heifer was diagnosed with DD during the rearing period she was at increased risk of having a DD event during first lactation (Table 1). There were no differences in other health events monitored; although numerically more animals were classified as healthy in the group with 0 DD events during rearing. Peak milk production was similar between groups, however 305 day milk production was lower by 438 pounds for heifers with one DD incidence during rearing and 737 pounds for heifers with multiple DD incidences during rearing.

Table 1: Select characteristics for heifers grouped by incidence of digital dermatitis (DD) during the 6 months prior to calving (Adapted from Gomez et al., 2015).

Characteristic	DD-0	DD-One	DD-Multiple
No. of Heifers	458	136	125
Average Age at Beginning, mo	17.7	17.9	18.1
First Lactation Performance			
Locomotion Score >2, %	0.5	2.6	8.0***
Healthy, % (No disease < 60 DIM)	61.3	56.6	56.8
DIM at First Service, mean days	80.7	81.1	81.4
Conception at First Service, %	42.3	36.3	29.0**
Days Open, mean days	132	134	157**
DD event during first lactation	13.7	45.6***	67.6***

Different than DD=0 group ***P<0.01;**P<0.05

Feeding organic trace minerals during the 6 month rearing phase did not alter the incidence of DD; however animals fed organic trace minerals produced approximately 420 pounds more milk in the first lactation.

From this study it is apparent that hoof health during rearing impacts productivity during first lactation. Early identification and intervention should be a goal on the dairy to minimize the negative impacts of DD during subsequent lactation. In addition, steps to reduce the risk factors for digital dermatitis, such as incorporating foot baths, treating promptly and maintaining a clean environment, should be included in heifer rearing protocols.