Mastitis During Early Lactation
Affects Reproductive Performance
Dr. Donald E. Pritchard
Extension Dairy Specialist, NCSU

The incidence of mastitis increases in many dairy herds during early lactation. Most of these new infections originate during the dry period and then become clinical in the first one or two months after freshening. Lost milk production is an obvious result of clinical cases, but reproductive performance is also affected.

Over the last several years there have been articles published in the Journal of Dairy Science and other publications about the relationship between mastitis in early lactation and reduced reproductive performance. Researchers at the University of Tennessee (UT) reported in 1998 that intramammary infections in early lactation resulted in the following effects on reproduction:
- the number of days to first insemination was significantly greater for cows having clinical mastitis BEFORE first insemination (93.6 days), versus AFTER first insemination (71.0 days)
- the number of inseminations required to result in a conception were significantly greater for cows having clinical mastitis AFTER first insemination (2.9) than for cows having clinical mastitis BEFORE first insemination (1.6)
- the number of days to conception for cows that developed clinical mastitis after first insemination was significantly greater than for cows that developed clinical mastitis after confirmed pregnancy (136.6 days versus 92.1 days)

Additional research conducted at UT and published in the July 2005 issue of the Journal of Dairy Science provides further information about the connection between mastitis and reproductive performance. The researchers found that clinical mastitis incidences occurring immediately before ovulation had a negative impact on normal endocrine and follicular function. When the immune system was stimulated by an udder infection, there was a release of chemicals to combat the inflammation. Cortisol blood levels also increased when cows were stressed by mastitis and the immune response activated. These responses resulted in less release of luteinizing hormone (LH), a reduction in estradiol-17B production which resulted in a decrease in the expression of estrous by some cows, and a reduction in ovulation rate.

This latest research report seems to explain how mastitis (or some other inflammation or stressful situation) can reduce the reproductive performance of animals. The report also should serve as a reminder to dairy producers of how important it is to incorporate management practices and programs that will minimize new udder infections during the dry period. The use of dry cow udder therapy, teat sealants, vaccinations, and providing clean, adequate housing for dry and recently fresh cows are some of the practices to consider.

Preventing new intramammary infections can increase milk production and profitability, as well as improve the reproductive performance of dairy cows. And having cows reproduce in the desired time interval also will result in more profit for the dairy. I encourage producers to ask their consultants for suggestions on how to reduce new mastitis infections in their herds.