

Let's look again at evaluating dry period length

by Melvin Kuhn, Jana Hutchison, and H. Duane Norman

A KEY aspect of anything that is taken as true simply because “everybody says so” is that it is hardly ever based on fact or any kind of careful, thorough, deliberate investigation. A recent example of “everybody says so” in the dairy industry is the widespread

The authors are with the Animal Improvement Programs Laboratory, USDA-ARS, Beltsville, Md.

speculation that farm records cannot be used to look at different dry period lengths.

A glance at recent articles on days dry can only lead readers to the conclusion that any research on dry period length that is based on DHI records is completely “biased,” a waste of time, and not worthy of even the slightest consider-

ation because . . . everybody says so. But where is the careful, thorough investigation to support this?

Big questions, small trials . . .

Suppose that, on average, cows do best with 50 days dry. But, what if she's a high milk cow? Does she need less or maybe more days dry? Would a high SCC cow

benefit more from a longer dry period? What if she's a first-calf heifer that had calved in at a young age? These questions haven't been addressed in recent days-dry articles because the number of cows that would be needed to answer these questions would be impossible to find because of the large number of cows needed to get accurate results.

Another important question that can be addressed using farm records is how or whether dry period length affects herd life and lifetime milk yield. Based on what we know so far, the answers to these questions are unknown, and recommendations for shortened dry periods are being made with no idea at all as to their long-term effects.

So far, research based on smaller designed trials have tried to look at dry period length and subsequent production. But have you noticed the variability in results from different studies on dry period length?

While most recent reports document lower production in lactations following shortened dry periods, one article will say cows milk just as well in the following lactation with 30 days dry as with 60 days dry, the next article will say cows produce 15 pounds per day less in the following lactation, another will say 10 pounds per day less, and so on. The plain and simple reason for this variation is because there weren't many cows used in any of those studies.

Furthermore, results from most designed trials will be based on a single herd, often a university research herd. There is nothing wrong with that, but results that hold for one herd may not always apply to another. Results (estimates) based on farm records, however, generally will, or at least can, apply to almost the entire U.S.

That leads us to DHI records which hold considerable potential for investigation of days dry effects. They allow us to address many different questions. They provide estimates with much greater accuracy and can account for anything that would interfere with the results.

The alleged biases . . .

One popular allegation against studies using field data (DHI records) is that cows are dried off according to level of production and not specifically for the study, and this causes a bias in any results from the records. The first statement is true, the second one is not. There are ways that we can easily estimate and adjust for the inherent differences among cows and determine the effects of dry period length.

Research at USDA has shown

that the same methodology used to calculate predicted transmitting abilities, the bases for our national dairy cattle genetic evaluations, can be used to adjust for differences in days-dry. Are these methods effective? Today's cows look and milk considerably different than they did 20 or 30 years ago, and much of that is due to breeding (selection) that was based on these PTAs.

The second popular line of attack against days dry research based on DHI records is the "planned versus unplanned" short dry period argument. Critics claim that the only short dry periods in field data are those that were unplanned, caused by mistakes and oversights by the farmer. They assume that, if the farmer had known when the cow was going to calve, she would have been managed differently.

This argument does not say that there is no milk production loss in the lactation following a shortened dry period. It argues that there are management practices that could either partially or completely offset these losses, that cows with short days dry in field studies did not receive this management, and that is why there was the loss in milk production. Is this true?

In 1991, research from Denmark described specific management for dry periods of planned lengths and still found milk production losses of 4.5 to 6.5 pounds per day. More recently, a designed trial at the University of Wisconsin also used dry periods of planned lengths and found losses of almost 19 pounds per day for cows with shortened dry periods.

One question that needs to be asked then is what exactly are the management practices that can supposedly offset the production losses following a dry period that is less than 60 days? The evidence suggests that they do not exist.

A second major point, in regard to the planned versus unplanned argument, is that a simple edit can easily be used to make sure that most dry periods from field data that we are evaluating were, in fact, of planned length. In a recent USDA study using farm records, cows were required to be within 10 days of their expected calving date in order to be included in the study. This assured that the owners knew, at least at one point, when the cows were going to calve because they reported it to DHI.

Nonetheless, critics still speculate that most of the short dry periods were still "unplanned," occurring because the managers overlooked or forgot the expected calving dates of these cows. This speculation, however, is difficult to defend.

First, USDA research has shown that there are U.S. herds that have averaged less than 60 days dry and some even less than 40 days dry since 1997. Furthermore, factors other than chance explain the

within-herd variation in dry period length. Level of milk production, for example, is a major factor affecting dry period length. Even for herds averaging 40 to 60 days dry, some cows will be dried off earlier or later, depending on factors such as production level, days open, cell count, and, perhaps, the number of cows milking.

Need designed trials, too . . .

Unfortunately, the recent criticism of using DHI records to evaluate the effects of dry period length is why we felt the need to discuss this very important source

of information. However, this article is not meant to slight the usefulness of designed trials. Designed trials, in spite of their generally small size, are useful and should be done. For one thing, designed trials have better control over some variables, such as BST usage which is not kept in the national database of DHI records.

Secondly, designed trials can observe some traits, such as calf birth weight and colostrum quality, that are not available through DHI. We believe that the two studies can complement each other rather well. The weakness-

es of one approach are actually the strengths of the other. While results from small designed trials cannot be taken individually because of the variability of them, if a number of such trials are done and their results pooled together, some reasonable conclusions can be drawn.

In future articles, we will present the results of research on dry period length involving more than 600,000 lactations of cows in 4,200 herds. We will look at production of milk and components, somatic cells, breeding, and lifetime performance. 