PENNSTATE College of Agricultural Sciences

From the Department of Dairy and Animal Science

This regular column from Penn State's Department of Dairy and Animal Science features the research findings, student opportunities, and reports on other important topics generated in the Department. The back issues of the column are archived on *Lancaster Farming's* Internet *www.lancasterfarming.com* home page. Look for them.

Grazing Dairy Cows Requires Close Management Input

Peter Tozer
Assistant Professor

Grazing of dairy cows for six to seven months of the year is becoming a profitable alternative management strategy for some dairy producers in the United States, approximately 15 percent of the producers in Pennsylvania are now grazing farmers.

The management input to manage a grazing-based dairy system successfully is higher than for a confinement fed dairy operation because the manager is balancing two complex biological systems that are both competitive and complementary - the cows and the available forages and pastures. Managers cannot simply put the cows out to graze.

The impact of the change in diet and nutrition management is huge, and needs to be given serious consideration when moving dairy cow diets from total mixed rations (TMR) to a pasture-based system. Feeding some supplements allows for greater flexibility in managing both the cows and pastures Supplemental feeding, in most cases, can also increase the profitability of the dairy system.

The "cow" factor in grazing systems is critical "Cow factor" means the breed of cow, the cow's genetics, and the capacity of the cow to eat sufficient feed to produce milk Work in Canada and New Zealand has shown that cows of equivalent genetics have vastly different milk production and composition due to the types of feeding and management systems.

For example, the production of cows in New Zealand on a pasture-based system is approximately 49 per cent lower than Canadian cows under an intensive feeding system Generally, cows do not consume sufficient pasture of high quality to produce milk to their genetic potential Quality is measured as the ability of the pasture to provide all essential nutrients required to produce milk.

In making the change to grazing, there is a second biological system to manage - the pastures. The pasture resource will depend on the geographical location and the predominant pasture species of the region However, since the productivity of most pastures will vary with seasonal weather changes, it is important to consider the availability of forage over the whole grazing season and plan herd management accordingly. Conserving feed in the form of hay or silage, and feeding supplements can reduce the impact of seasonal forage shortages. It is highly unlikely that a dairy farm can be financially successful on a fully pastured-based feeding regime unless the pastures and forages are well managed, some feed is conserved, and proper supplementation is practiced.

Pasture and forage management require the farm manager or herdsman to observe pasture conditions daily, if possible, since pasture quality and quantity can change rapidly This is especially important in the spring, and during periods of hot dry weather when pastures dry out quickly Very wet conditions can also adversely affect pasture growth, so good management is critical in these periods.

Knowing the quality and quantity of the forages available allows the manager to plan how much and what types of additional feed may be required to maintain milk production at a desirable and profitable level. Variability in the quality of forages has been shown to change the composition of milk, at times adversely. Therefore, to maintain consistent milk production and composition, good pasture management is essential.

Finally, the interactions of the cows and the pastures systems need to be considered These interactions are important, since cows are more selective in their grazing if allowed free choice grazing rather than some type of controlled grazing, such as strip or rotational grazing Another factor to consider in a grazing system is the intensity of grazing because most forages or pastures require a rest period to regenerate or persist over a long period of time. This is especially important for perennial forages, such as alfalfa

The use of supplementary feed is encouraged because it allows the dairy farmer more flexibility in the management of both pastures and cows Supplementary or complementary feeds can also provide essential nutrients that may not be present in sufficient quantities in the pastures. Most dairy producers in the United States feed some type of supplement Producers do this to enhance the milk production of the cows or improve body condition, while increasing the profitability of the dairy system Purchasing or conserving some supplemental feed gives the dairy

(Turn to Page A22)