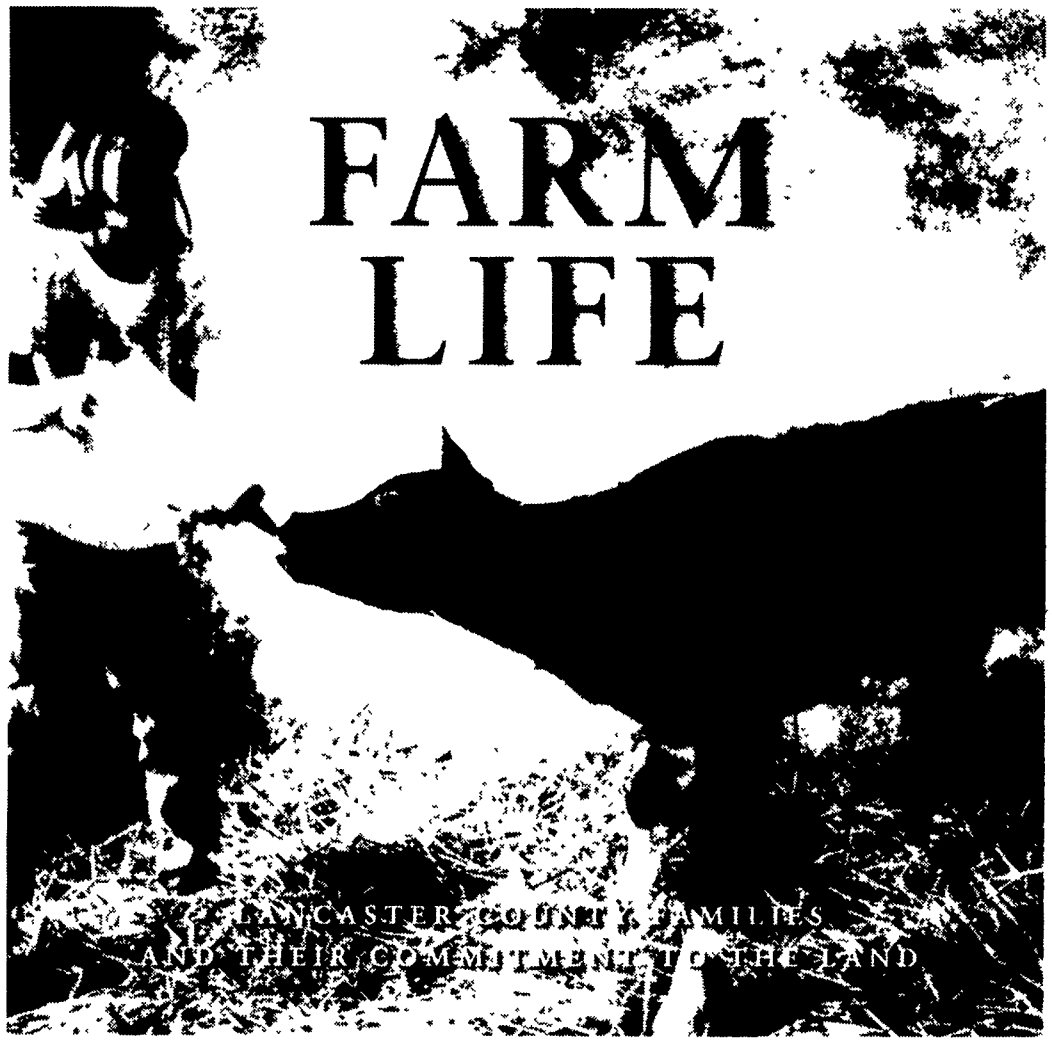
Book Presents "New Chapter" In Farmland Preservation

To raise the awareness of the cause of the Lancaster Farmland Trust, they have written and produced a book about seven families who have permanently preserved their farms The book captures the essence of what farming means to Lancaster County, to its people, and to the rest of the world, and why preservation is so important Through rich images and words, this 150-page book depicts the lives and work of these farmers as they relate to land, history of the generation's hopes and concerns for the future Through life-on-the-farm philosophies, the book puts names and faces on the work of the Trust



Entitled· Farm Life, Lancaster County Families And Their Commitment To The Land, the 9" x 9" book features these families Jeff and Sue Frey, Willowstreet, Bob and Deb Wenger, Quarryville; Clair and Mim Miller, Elizabethtown; Frank Ludwig, New Holland; Marty and Judy Greenleaf, Kirkwood, Terry and Sandy Scheets, Stevens; and an Amish farmer for whom a pseudonym is used at his request

The farms range in size from 54 acres (Ludwig) to 240 acres (Wenger). In most cases, the farms have belonged to the families for generations. For example, Bob Wenger's farm has belonged to his family for 86 years. Terry Scheetz's family has owned their farm for 90 years, and Clair Miller's farm has been their family for 150 years

The farmers tend various crops and livestock Clair Miller runs a dairy farm Jeff Frey grows corn and soybeans Terry Scheetz has a pig-roasting business and raises pheasants. Marty and Judy Greenleaf grow corn and soybeans Bob Wenger, Frank Ludwig and the Amish farmer are retired if there is such a thing for a farmer.

In each family, the wife contributes greatly. All raised or are raising children, and many have businesses as well. For instance Sue Frey has her own green houses behind their home where she sells flowers wholesale Mim Miller is a manager for a basket company and she works from a summer kitchen converted to an office The Amish farmer's wife runs a canning business and uses vegetables and fruits from her own garden and trees Sandy Scheetz has her own framery and art gallery in Ephrata and she has converted a tobacco barn on the farm as her framing studio Judy Greenleaf takes a very active role in the farming itself as a partner to her husband

In each case, the farmers and their wives are dedicated to the land Even with the financial ups and downs that come with farming, these families have turned down substantial offers from developers rather choosing instead to preserve the land for farming

The book has been written, photographed, designed, and published by Lancaster County natives and businesses. The writer, Sara Barton, writes for the Lancaster New Era and is a graduate of Manheim Township High School and Carnegie Mellon University, Pittsburgh.

Gini Wagner is a full-time commercial photographer with Godfrey Advertising As an active board member of the Lancaster Farmland Trust, she dedicates much of her free time to the efforts of preserving farmland. This is her first published photographic work.

Dave Loose and Kristy Tunnell at DLD Advertising have designed the book.

A private reception in support of the book project, to preview the book design, and meet the families featured in the book, is scheduled for Monday evening from 5 to 7 p.m. at the Pressroom Restaurant in Lancaster.

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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 resports 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.

Protein and Energy for the Transition Cow

Gabriella A. Varga & Jennifer Vallimont

There is a six-week window of time during a dairy cow's lactation cycle that is crucial to a successful lactation. What happens during these six weeks can determine the health of the cow and how much milk she will contribute to the bulk tank The most important part about this window of time, the transition period, is that producers have control over what happens.

The transition period for dairy cows is commonly defined as the last three weeks prior to calving through the first three weeks after calving Many changes are occurring in the cow, including hormonal changes in preparation for calving, increased nutrient demand for milk synthesis, rapid fetal growth, and changes in her environment and interactions with peer groups. These changes, in addition to many others, can result in decreased dry matter intake as cows approach their calving date, however the cow's nutrient demands increase during the last few weeks of gestation. The dry cow not only has requirements to maintain her body but also the growth and development of the fetus and udder, body growth in heifers, and colostrum or milk synthesis. This is why it is so important to provide the proper balance of nutrients to the close-up dry cow. The key to ensuring that the cow gets the proper balance of nutrients is to provide a ration that will maximize rumen microbial protein synthesis, and meet the protein needs of the fetus, mammary gland, and maintenance of the dam. We have shown that as the dam approaches calving, the relationship becomes stronger between dry matter intake prior to calving and the amount of dry matter the cow will consume after calving The higher the dry matter intake prepartum, the higher it is postpartum. One benefit that would go along with increased pre- and postpartum dry matter intake is a potential decrease in postpartum metabolic diseases. These diseases can cost from $150-300 per case.

The current protein recommendation by the National Research Council (NRC, 1989) for maintenance and gestation of the dry cow is 12% crude protein (CP) on a dry matter basis. Some researchers have thought that this value may be too low, resulting in a loss of maternal protein reserves. In contrast, at Penn State we have shown that cows remained in positive protein balance when consuming rations containing 10.6%, 12.7%, or 14.5% CP. A more recent study by the same Penn State group found that cows fed a ration with 17.8% CP during the last four weeks prior to freshening tended to eat less dry matter and produce less milk after calving than cows fed a ration containing 13.3% CP. A ration that provides 12% CP might be adequate if cows did not reduce their dry matter intake during the late dry period. Most cows decrease their intake by as much as 30% in the last three weeks prior to calving. Because of this decreased intake prior to calving and if first calf heifers are in this dry group, it is beneficial to have a higher protein concentration in the diet, therefore we recommend 14% CP.

Forage testing can help both the producer and nutritionist evaluate dry cow rations more effectively. The quality and availability of the protein that is provided determine the effect that an increase in crude protein level may have in a herd. The protein source is also important because the microorganisms need adequate degradable protein, we recommend that the degradable protein be between 8.8 to 9% of ration dry matter (63-65% of the crude protein).

Energy is another important nutrient for dry cows Close-up dry cows are usually fed a ration that contains at least 60-65% forage on a dry matter basis In most cases, once a cow freshens that diet changes to a higher concentrate ration It takes the rumen a few weeks to adapt to this higher grain ration. There may be benefits to providing the close-up dry cow a diet that is high in fermentable carbohydrates with additional concentrate. This type of diet can potentially increase the availability of carbohydrates to the rumen (which stimulates rumen microbial protein synthesis), prepare the rumen microbes for the lactation diet, promote rumen papillae development, and increase the absorptive capacity of the rumen.

A 1999 study by Dann and others at Penn State evaluated the effects of increasing rumen available carbohydrate to transition cows. Cows that were fed a diet with steam flaked corn had higher dry matter intake and lower non-esterified fatty acids (an indicator of body fat mobilization) prepartum and higher milk production postpartum than cows fed cracked corn. The increased energy from the steam flaked corn illustrates the potential benefits of altering the carbohydrate source in the ration. It is important to work with a good nutritionist and monitor forage quality when formulating dry cow rations. In this close-up dry period when the cows are consuming less dry matter, we recommend that the energy density of the total ration be between 0.68 - 0.73 Mcal NEl/lb dry matter, and nonfiber carbohydrate be between 33-38% in ration dry matter.

It is challenging to make recommendations for the close-up dry cow because we don't know with certainty which cows will calve early and which ones will calve late. If the elevated energy density in the diet of 0.68 to 0.73 Mcal NEl/lb was fed to cows with body condition scores greater than 3.5 on a 5-point scale throughout the entire dry period, then those cows may become too fat. We know fat cows tend to have more difficult calvings and are more prone to metabolic diseases such as retained placenta and ketosis post calving. Studies conducted at Penn State have shown that dry cows with body condition scores greater than 3.5 also lose more body condition after calving, stay in negative energy balance longer, and produce less milk than cows calving with a body condition score less than 3.5.

The question that challenges nutritionists is what energy level to formulate for in small herds since it is probably not possible to feed for two dry cow groups. In order to prevent fat dry cows, evaluate body condition score 30-60 days prior to dry off and make nutritional changes at this time, especially if many overweight cows are observed. Work with a nutritionist to determine an energy level that is going to meet the needs of the average dry cow in the herd. For your close-up dry cows, consider a top dress of additional concentrate to increase the protein and energy they consume and to prepare the rumen and the cow for the lactation diet. It is also important to pay attention to vitamins and minerals since they are important in the prevention some of the postpartum metabolic problems that fresh cows encounter.

Fresh cows need some additional attention as well. They should be offered a diet that is intermediate between the close-up and high cow rations with no greater than a 10% difference in any one nutrient. Three to five pounds of good quality hay for the first week after calving should be fed to assure good rumen function. Remember that heifers are still growing and need additional nutrients to support that growth. Never leave the feed bunk empty in front of your fresh cows. They should have all of the feed that they can eat.