



**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](http://www.lancasterfarming.com) home page. Look for them.

**Induced Lactation as a Tool to Increase Dairy Farm Profitability**

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Profitability on a dairy farm is defined by the simple equation:

$$\text{Profit} = (\text{price/cwt of milk} - \text{cost/cwt of milk}) \times \text{volume.}$$

Reducing the cost of milk production offers the most promising opportunity for dairy producers to increase profitability, and has been the subject of recent research within Penn State's Department of Dairy and Animal Science in the College of Agricultural Sciences. Most dairy producers realize there are a limited number of strategies to increase the price they are paid for milk. The volume of milk produced per farm has steadily increased in recent decades, and will continue to increase as limited by land mass, nutrient management regulations, and the availability of cows, facilities and labor. Therefore, controlling the cost of producing milk plays a

significant economic role at the farm.

One factor that increases cost of producing milk is the significant involuntary cull rate on the dairy farm. This often occurs when otherwise healthy cows do not conceive in a timely way, and need to be culled from the herd. Options include replacing them with heifers from the farm, or purchasing a pregnant heifer or cow that is near calving. This reduces profits on the farm, and it is our goal to reduce this cost.

Dairy producers are well aware that the primary reason to rebreed a cow is to gain the resulting calf, and to prepare the cow for another lactation. It is the lactation that has the greatest impact on farm profitability, as most income results from sale of milk. The goal of our research is to treat those open cows in a manner that creates a brief "artificial pregnancy", in order to stimulate udder development and induce them to have another lactation.

The basic methods in this procedure were introduced 25 years ago by research at Ohio State University, but were not

refined to the point of 100% success rate. Furthermore, no company or organization attempted to take the method through the process of approval required by the U.S. Food and Drug Administration (FDA). FDA approval is essential if a technology like this is to be widely used in the industry.

Research at Penn State modified earlier methods in terms of estrogen and progesterone (the natural hormones of pregnancy) administration. In addition, we utilized bST after the cows began to produce milk. Results were very encouraging, as the induced cows produced an average of 60 pounds of milk/day for 305 days. Furthermore, most of these cows, which were problem breeders at the start of the trial, conceived during the induced lactation. Thus, they have returned to the regular herd, and continue to be profitable animals.

We then compared the profitability of retaining these cows in the herd to the alternative of raising replacement heifers. Results showed that the average dairy farm could increase profit by about \$520 every time a cow is induced to lactate rather than replace her with a heifer. Depending upon the size of the farm, the impact could be very significant.

In addition, we hope to extend our studies to determine if these technologies can be applied to young heifers to get them producing milk earlier in their lives, and improve lifetime milk production. Since this procedure is not approved by FDA, we must

ensure this technique is safe for animals and people. We hope that private industry will partner with us in our desire to ensure that dairying remains profitable.

Colleagues who have contributed significantly to this

research include Drs. Larry Muller, Mike O'Connor, and Steve Ford, research specialists Ann Magliaro and Dawn Sills, and students Adam Kauf, Emma Herscher, Shannon Beabes and Steve Blackburn

**Donaldson Re-Elected To AFBF Board**

CAMP HILL (Cumberland Co.)—Pennsylvania Farm Bureau president Guy Donaldson of Orrtanna has been re-elected to a two-year term on the American Farm Bureau Federation (AFBF) Board of Directors and appointed to its Executive Committee. He was re-elected during the nationwide farm organization's 81st annual meeting earlier this month in Houston, Texas. Donaldson attended the annual meeting as one of three Voting Delegates representing the Pennsylvania Farm Bureau. He has served one the American Farm Bureau board since January, 1998.

Donaldson was appointed to the AFBF Board's Executive Committee for the first time. He will represent the Northeast state farm bureaus as one of six members on the committee. The Executive Committee's responsibilities include approval of the budget for the nearly five-mil-

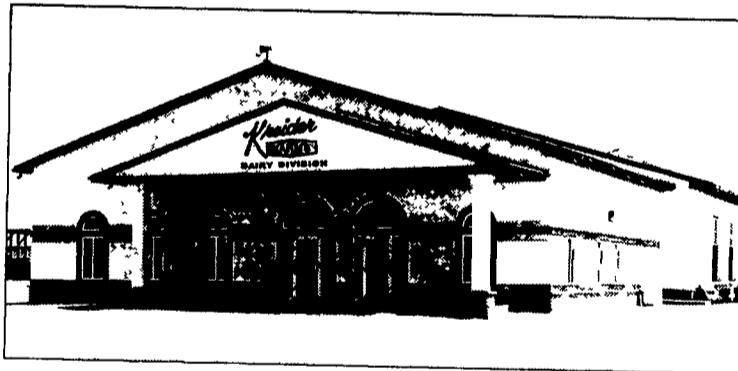
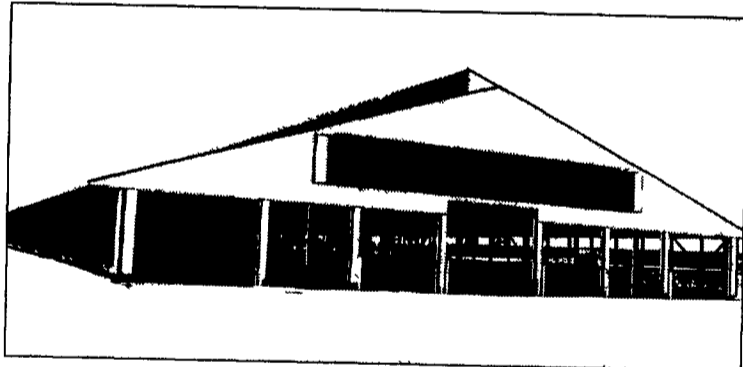
lion member organization and handling items of concern which need action before the next scheduled board meeting. The 32-member AFBF Board of Directors meets five times per year.

Donaldson has been president of Pennsylvania Farm Bureau since April, 1996. Prior to that he had served as the organization's vice president since 1987. He and his wife, Betty, in partnership with their three children, operate a 550-acre fruit farm in Adams County. They grow apples, peaches, cherries and vegetables and operate a retail farm market in season.

Pennsylvania Farm Bureau is a non-governmental voluntary farm organization which represents over 27,300 farm and rural families. It is one of 50 state farm bureaus plus Puerto Rico which comprises the nation's largest general farm organization, the American Farm Bureau.

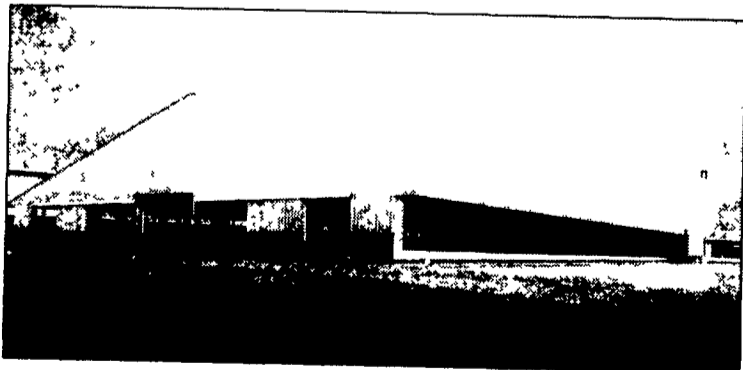
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