

Cow Fertility Research Has Far-Reaching Implications

UNIVERSITY PARK, (Centre Co.) — Penn State researchers studying the fertility of cattle have isolated a protein secreted by the oviduct that could help correct problems of infertility in humans, as well as in cows.

Dr. Gary Killian, professor of reproductive physiology in the Department of Dairy and Animal Science, says the fluid found in the oviduct — the tube that serves as the passageway for eggs and the site of fertilization — contains a protein that binds to sperm, preparing them for the fertilization process. During in-vitro experiments, sperm swam straighter, seemed more directed and remained alive longer when placed in a culture with this protein.

Selenium

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for dairy farmers, one that will affect their pocketbooks one way or the other.

What is the evidence for environmental objections? Are we served well with the current allowed supplementation levels, or are we going to suffer new losses in reproductive efficiency, udder health and in milk quality by the reduced levels of supplementation?

The prospect of this possible change has many dairy farmers upset and even scared. It will pay dairy farmers to renew their attention to this issue.

"This unique protein is secreted during the estrus cycle when the female is sexually receptive, usually near the time of ovulation. If we confirm preliminary findings that this protein actually regulates the motility and capacitation of sperm, it could hold positive results for the dairy industry and human health," Killian said.

"The oviduct environment is extremely important and we need to know more about it. Something is happening in the oviduct environment that is crucial to successful fertilization and embryo development."

The estrus-associated protein was isolated by doctoral student Robin King and is only one of several proteins, ions and lipids that comprise oviduct fluid. This particular protein also binds to the sur-

face of eggs, but Penn State researchers are not yet sure of its full role in the fertilization process.

The animal scientist says the possibility exists for including this estrus-associated protein in semen used in artificial insemination for both animals and humans. The inclusion of this protein means the sperm would not have to depend on the fluid from the oviduct and its presence could boost the chances of sperm fertilizing an egg. In addition, the identification of this protein could lead to the creation of an antibody that would act as a contraceptive, preventing the protein from aiding sperm.

"The discovery of this estrus-associated protein could be particularly useful for the dairy industry because in order to produce

milk, cows need to reproduce. Poor reproduction in a herd of dairy cows causes a decline in milk production and the result is a loss of money in an industry that is already hard hit," said Killian.

"Anything that will increase the success of reproduction is worth investigating. This particular protein could be used to bind to embryo grown in vitro that will be implanted in surrogate cows, producing a herd with a greater capacity to give milk," he said.

Killian's work is part of a three-year grant from the U.S. Department of Agriculture. In the past, fertility research in the cattle industry has had a significant impact on human health, particularly in the area of artificial insemination, sperm and embryo cryopreservation, and infertility.

Although the protein has been isolated, he and his colleagues are now in the process of studying how the protein may modify the motility or other functions of the sperm. He is also investigating the composition of oviduct fluid from various sites in the oviduct.

"We are collecting oviduct fluid from cows through two catheters inserted in the oviduct that exit at the flank of the animal," Killian said. "One catheter is placed near the ovaries where fertilization occurs and the other is in the area closest to the uterus, which is a storage area for sperm."

The Penn State researcher says the fluids from both sites will be compared and analyzed to determine differences in composition and function.

Roadside Markets Under Study At Conference

NEWARK, Del. — The 1992 10th annual Mid-Atlantic Direct Marketing Conference (MADMC) and Trade Show will be held at the Radisson Hotel in Wilmington, Del. on February 20-22, 1992.

This year's program, "Direct Markets in Transition," will use nearly 30 regional and nationally known speakers and session participants.

An added program feature this year is the mini-workshop sessions being offered concurrently with the roundtable discussions.

The program consists of three general sessions (direct markets in transition, growing with the nineties, and feature stories), nine concurrent sessions, five roundtable

discussions, and four mini-workshops. The concurrent sessions are labeled A to I in the program. The roundtables are scheduled on Wednesday.

MADMC '92 will also include an elaborate trade show with 50 to 60 exhibitors, a banquet, entertainment, and meeting of old and making of new friends.

Extension Offers Frame Builders Conference

LEBANON (Lancaster Co.) — The 1992 Pennsylvania Frame Builders Conference will be held here on Tuesday and Wednesday, February 11-12, 1992.

The conference will provide up-to-date information on efficient, economical, and safe building methods for farm and small and medium size frame buildings. Information presented will be of interest to builders, designers, suppliers, regulators, and

educators.

Builders will explore and gain expertise in areas such as utilization of native hardwoods, methods for retrofitting modern systems and materials into existing buildings, and current rules and regulations. Wednesday, Feb. 12, is Crew Day. During Crew Day, participants will learn proper and safe methods for handling building components such as trusses and metal panels. Safe and efficient

use of scaffolds and methods for installing roofing will also be covered.

Many builders and suppliers have been sent information on this conference by The Agricultural and Biological Engineering Department at Penn State. If you haven't received information on this conference, you can obtain information and registration materials from your local cooperative extension office.

Public Auction Register

Closing Date Monday 5:00 P.M.
of each week's publication

DECEMBER

SAT. JAN. 4 - 9AM, Quilts,
'87 Buick, Winross Trucks,

Toys, Household, Antiques, Collectibles. Owner Pauline Shade. Kenneth P. Leiby Auct.

Public Auction

1987 Buick LaSabre (29,000 mi), V-6 (Like New), 6 Quilts, Early Red Paint Schoolmaster's Desk, 40 Winross Trucks, Toys, Household, Antiques & Collectibles

Saturday, Jan. 4, 1992

At 9:00 A.M.

Located At The Leesport Farmer's Market Hall Just Off Rt. 61 Leesport, Berks Co., Pa.

Frigidaire 40" Elec. Stove & Refrig. (Like New); Flax Winder, Dec. Balloon Back Chair, & Other Chairs, 3 Pc. B.R.S. Lane Cedar & Blanket Chests, 6 Pc. Pine D.R.S. Lamps, Library Tables, Washstand, L.R.S. (Like New) Chicken On Nests, Milk Glass, Adv. Boxes, Old Books (Shirley Temple) (Story Of Berks Co.) (Indians of Pa.) & Others, Old Baskets, Dolls & Clothing, Sponge Bowls, Old Cigar Mold, Old Advertisements, Hanging Lights, Assorted Glassware (Some Old) Sewing Boxes, Quilt Tops, Indian Blankets, Dovetailed Cradle, & Many Old & New Items.

Selling 40 Winross (Many Old & Over The Road), 60 Lots Of Tonka, Nylint, Matchbox, Farm Toys, Tin, Etc. (Many Still New), Air Products Tanker, New Penn 50th, Fire Company Trucks, Consolidated Freight, Roadway, Macungier, Interstate, Rajah String Band Truck (Temple), Hershey's "Old" Truck.

9:00 A.M. Small Items — 11:30 Toys — 12:00 Winross — 1:00 Auto, Followed By Furniture & Appliances.

Note: Only Partial Listing. Approx. 6 Hr. Sale.

Sale For:

Pauline Shade

Auctioneer:

Kenneth P. Leiby AU00541-L
215-562-3929

4-H Tractor Safety Club Gears Up For 1992

LEBANON (Lebanon Co.) — The Lebanon County 4-H Tractor Safety Club is once again gearing up for this year's program.

Ken Winebark, Lebanon County Agent states that this year's program will start Tuesday, January 7 at 7:30 p.m. at the Lebanon Valley Agricultural Center on the corner of Cornwall and Evergreen Rd., Lebanon. Anyone interested is invited to attend. The 4-H Tractor program gives youth an opportunity to "learn by doing."

The course which would be particularly beneficial to youth operating lawn and garden tractors as well as farm implements, will meet on consecutive Monday or Tuesday nights from 7:30 - 8:30 p.m. starting January 20, 1992. At the meeting you will learn that better, and safe, tractor care results in longer tractor life, more power, and lower operating costs. Because you learn how to do many small but important tractor maintenance jobs, you will get better production from farm units and you will cut down on costly breakdowns. Older members will learn machinery maintenance and repair.

While you are learning how to care for your tractor, you should also learn how to be a safe operator. Another important goal of this program is to help you form good safety habits so you can think and act safely - at all times.

Equally important with learning tractor care and safety is the 4-H goal of helping you to become a sound-thinking citizen. The training you receive in your 4-H program will be very beneficial to you

throughout your lifetime.

Maybe you or someone you know is interested in working on a farm this summer. If so, it's important that you become a certified tractor operator. One segment of the 4-H Tractor Program, the Occupational Hazard Course, offers 13 - 15 year olds the required training to be certified farm machinery operators. This is the only time this course and examination will be offered, so tell your friends and neighbors.

Club Leaders for 1991 are

Introductory Unit - Dean Nolt, Advanced Unit - Dave Wenger, and Occupational Hazard (Certified Tractor Operator Course) - Ivan Hanson. All of these leaders are well qualified mechanics.

If you have any questions contact Ken Winebark at 270-4391. The 4-H educational youth program is a Penn State Cooperative Extension program and is open to all youth ages 8-19 regardless of race, religion, sex, national origin, handicap or place of residence.

State Dairymen's Association To Hold Banquet

The annual meeting and banquet of the Pennsylvania Dairymen's Association will be held on Tuesday evening, January 14, 1992 at the Harrisburg Sheraton - East. A milk punch reception will begin at 6:00 P.M. with dinner to follow at 6:30 P.M.

Dr. Stan Curtis, Department Head Dairy and Animal Science, Penn State University will address the annual meeting. He will speak on the very important issue of the 90's, Animal Welfare.

Several traditional highlights of the evening will be the presentation of the Charles E. Cowan

Award and the Extension Service Award. These two awards are presented annually to two individuals who have made worthy contributions to the dairy industry.

Tickets are available for the banquet at the cost of \$14.00. Reservations may be made by contacting Sue Beshore, Pennsylvania Dairymen's Association - 396 Old York Road, New Cumberland, Pa. 17070. Tickets may also be ordered by phone by contacting the Dairymen's office at (717) 938-4876. Deadline for ordering tickets is Monday, January 6, 1992.

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