

## PSU Works On Farm Decision Software

UNIVERSITY PARK (Centre Co.) — Penn State dairy scientists and computer software engineers have been working together to design new tools to help dairy producers make difficult decisions about problems that create lost revenue year after year.

These tools are "user friendly" software programs called computer decision aids. They can identify a problem for a particular producer, teach how to control the problem, and estimate the cost to implement a control program.

To achieve this, the program calls on a database unique to the farm in conjunction with expert knowledge gleaned from a variety of sources. Using a personal computer, one can put the software to use with modest computer skills.

Nearing completion, one such program — the Mastitis Control System — is being field-tested by select users whose recommendations will be incorporated into the final product.

Developed for IBM-compatible computers, this decision aid can easily retrieve DHIA mastitis data from a remote location and evaluate mastitis control procedures used on specific farms. Graphs, tables, and worksheets are employed to help the user understand and formulate a plan for mastitis control in a particular herd.

The system provides a new way for veterinarians, feed dealers, consultants assisting farmers with mastitis problems, and some dairy farmers to access and apply information on mastitis and find solutions for this costly problem.

Based on DHIA data and currently available information on mastitis, the program walks users through a step-by-step process of questions and answers that sheds light on problems and suggests solutions specific to individual producers.

Using this information, the pro-

gram creates worksheets to calculate milk loss, aids to convert somatic cells to linear score, lists of most severe cows, graphs of historical herd data, and partial budgets to assist with decision making.

For instance, one screen asks the user to evaluate the herd by placing "X"s next to appropriate questions:

- Have you added new cows to the herd during the last six months?
- Is a common wash cloth or sponge used to wash udders?
- Were chronically infected or low-producing cows culled in mid- to late-lactation?
- Did you change any management practices recently?
- Was the weather hot and humid, or are the udders dirty?
- Has the weather been very cold?
- Has the milking equipment been tested in the last six months?
- Are there any bacterial culture results?

The computer then uses answers to these questions, along with DHIA data, to query the user further on specifics or to create graphs or charts to increase the user's understanding of the problem.

If the computer decides the problem is a form of mastitis caused by bacterium known as *Staphylococcus aureus*, for example, it next asks the user to choose from a "menu" of information on the topic, such as:

- Where can *Staph. aureus* be found on the farm?
- How does the infection move from cow to cow once it develops?
- What kind of mastitis problems can *Staph. aureus* cause?
- How widespread can a staph problem be within a herd?
- What signs might tip me off that a *Staph. aureus* problem ex-

ists in my herd?

- What steps should I take to solve the problem?

By bringing together massive amounts of information and making it easily accessible, computer decision aids make it vastly simpler for producers to identify, analyze, and learn about problems that plague them.

For instance, one database alone, used as a source in the development of the Mastitis Control Program, contains 12,000 documents, 1,500 graphs, 50 comprehensive data collections, 50 computer programs, and even a

14-minute video — all on a single compact disk. This collection, the *National Dairy Center Database*, is updated annually.

Other computer decision aid programs currently under development include a lactation graph evaluator and a herd performance evaluator. Although computers will never replace individuals in the decision-making process, they go a long way in making the process more precise and less tedious.

Funding for the work on the Mastitis Control Program was provided by the Pennsylvania De-

partment of Agriculture and Penn State's College of Agricultural Sciences and Department of Dairy and Animal Science.

Project Leader C. William Heald, in conjunction with the Center for Mastitis Research, collaborated with the following individuals in the development of this decision-making tool: William M. Sisco and Dale A. Moore of the Department of Veterinary Science, James Boyer of Pennsylvania DHIA, and computer programmers Michael Foster, Tai-Oun Kim, and Jae Lee.

## Gold Bar Champion Saler Bull

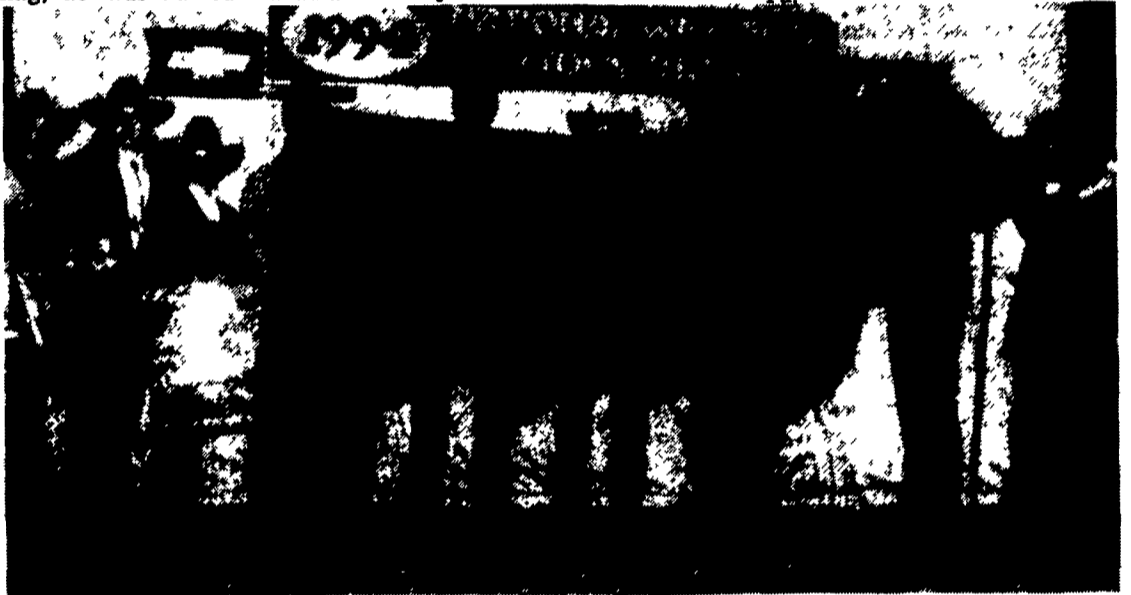
DENVER, Colo. — Gold Bar was recently awarded the 1994 National Champion Saler Bull Award here at the National Western Stock Show.

As a 10-month-old calf, he was named Reserve National Calf Champion at Denver. As a yearling, he was named Canadian

National Champion Bull at the Canadian Western Agribition Show in Regina, Saskatchewan.

Now as a senior bull, Gold Bar was the reserve senior champion bull at the North American Livestock Exposition at Louisville, Ky., in November and senior and grand champion bull at Denver.

Gold Bar is the first Saler bull to have won both the U.S. and Canadian National titles. Gold Bar is owned and managed by E.C. Rowlett, Guy, Ark.; Greenough Cattle Co., Missoula, Mont.; Joe Dearing, Harrison, Ark.; and Metro Ltd., Jay Temchack, Bellefonte, Pa.



Gold Bar was recently named National Champion Saler bull. From left Salers queens; Kelvin McMullen, Kilarney, Manitoba; Bob Cooper, Harrison, Ark.; Joe Dearing, Harrison, Ark.; E.C. Rowlett, Guy, Ark.; Wes Hudson (at halter), Harrison, Ark.; and Jay Temchack, Bellefonte, Pa.

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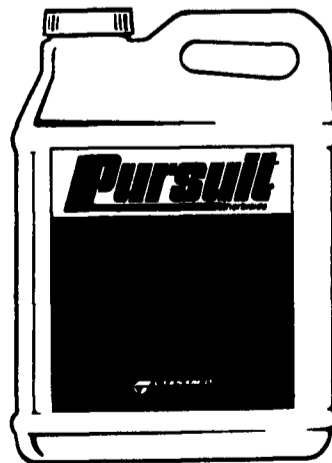
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