

DAIRY SCIENCE REPORT
MAJOR ADVANCES IN THE LAST YEAR

by

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Good things are happening. Undergraduate enrollment went up, outside grant support increased, facilities are being upgraded and the milk check off is off to a good start. Now for some details.

With the efforts of James Umphrey, we have been able to double our undergraduate numbers and with the plans he has in place within a few years we should reach our goal of 40 to 50 majors. A continued conscientious effort will allow us to reach that goal. A new program was initiated this year to strengthen the undergraduate program through increasing student involvement. Under the guidance of James Umphrey a group of 12 animals were selected as a student herd. The students will make all management decisions on the animals and will select some of them for showing. One additional animal, with showing potential, was purchased to get the project off to a good start.

Competing for Federal Grants is a real challenge because only about one in four proposals are funded and you are competing against the top scientists in the U.S. Members of our faculty had four projects funded. A fantastic record. In addition, a number of industry grants were obtained and most recently Dr. Head received a grant from the Air Force to study the effect of noise on dairy cows.

State Budgets

In spite of what you are led to believe in the newspapers, the State support for research, teaching and extension continues to erode. Any increases are absorbed in salary increments. The Dairy Science Department receives approximately enough funds to support a one hundred cow herd. Our present research output requires a herd size of about 350 cows. Fortunately, we have been able to pick up the difference through Federal and Industry grants, and the Milk Check Off. Proposals for next years budgets being any better are very bleak.

Last year the Milk Check Off provided \$251,000. The Project Review Committee committed is all to projects. They met recently and selected 16 of 36 projects for funding for this year with a dollar value of \$254,707. The following is a list of the approved projects.

Umphrey - Florida 4-H Dairy Science Programs.

\$14,000

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| Bray, Shearer, Drost - Teaching Materials for Adult Education. | 6,500 |
| Bachman - Undergraduate Programs and Scholarships. | 4,000 |
| Natzke - Youth Development and Recruitment. | 10,000 |
| Braun - Veterinary School Scholarship. | 1,000 |
| Staples - Comparison of 5 Forage Silages and Cottonseed Hulls as Major Dietary Roughage Sources for Lactating Dairy Cows Supplemented With and Without Alfalfa Hay. | 11,900 |
| Head, Bachman - Effects of Colostral and Milk Components and Subsequent Growth Rate on Health Mammary Growth and Function in Heifers. | 14,600 |
| Simmen, Head - Insulin-Like Growth Factors in Calf Postnatal Growth. | 19,030 |
| Beede, Sanchez - Lactational Performance Responses to Supplemental Magnesium Oxide Sources Differing in Amounts of Soluble Magnesium. | 13,720 |
| Beede, Wang, Donovan, Archbald, DeLorenzo, Sanchez - Electrolyte Balance of Springer Rations May Affect Early Postpartum Health, Physiological Responses, and Subsequent Lactational and Reproductive Performance. | 29,270 |
| Staples, Thatcher, Drost, Lucy, Garcia - The Effect of Dietary Energy Intake, Energy Balance, and Intake of Undegradable Protein on the Growth and Development of Ovarian Follicles, CL Function, and Embryo Development in Adult Lactating Dairy Cattle. | 23,000 |
| Bachman, Head - The Dry Period: Physiological Factors Affecting Subsequent Production. | 9,600 |
| VanHorn, Nordstedt - Dairy Manure Management: Prediction of Nutrient Excretion, Particle Size Distribution, and Efficiency of Disposal Methods. | 24,000 |
| Shireman - Intensive Fish Culture to Remove Nutrients from Dairy Effluents. | 11,200 |
| Tran, Bray, Braun - Automatic Data Collecting System on Vacuum Fluctuation and Water Temperature (Phase III Project). | 11,300 |
| Bray, Spencer - Milk and air capacity of 3 inch Diameter Milking Pipeline. | 3,836 |

Bray, DeLorenzo - Automated Pre- and Post-Milking Sanitation on Florida Dairies.

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| Archbald, Thomas, Lyle, Tran - Attempts to Increase Conception Rates in Dairy Cows: Comparison of the Effect of Gonadotrophin-Releasing Hormone and Prostaglandin F ₂ α Administered at the Time of Insemination. | 10,000 |
| Hansen, Low - Regulation of Growth of Placental Cells From the Cow By Products of the Immune System. | 6,150 |
| Bray, Beede, DeLorenzo, Wolfenson, Bucklin, Nordstedt, Giesy - Environmental Modifications for Reducing Summer Stress on Florida Dairy Farms. | 6,201 |
| Hansen - Effect of Bovine Somatotropin on Resistance of Dairy Cows to Heat Stress. | 2,500 |
| Hansen, Drost - Alleviating Heat Stress Associated Infertility in Dairy Cows. | 22,900 |
| TOTAL: | <u>\$254,707</u> |

As you can see, the subject matter ranges from very basic studies to applied projects which should provide usable answers within the year. The additional available funds have attracted projects from Ag Engineering, Agronomy, Fisheries and Aquaculture, and the Veterinary College in addition to the Dairy Science Department. Thus, the dairy research effort at Florida has increased markedly.

Faculty Recognition

The efforts of several of our faculty were recognized locally, state wide, nationally and internationally. Dr. Barney Harris was given the Distinguished Service award by the Southern Section of the American Dairy Science Association. Recently he joined our elite group of Florida dairy leaders by being inducted into the Florida Dairy Hall of Fame.

Dr. William Thatcher was recently cited as the Outstanding Senior Faculty Member by Gamma Sigma Delta, the National Agriculture Honor Society. Dr. Bachman was selected as one of the top undergraduate advisors in the College of Agriculture.

Dr. Thatcher was recently named as the U.S. Senior Scientist representative for American Society of Animal Science and will spend six weeks in New Zealand presenting lectures on his work in reproductive physiology.

In the misery loves company category, the dairy unit was cited for a pollution violation on the creek that runs through the property. As you may recall, we had an SCS plan drawn several years ago but were unable to obtain funds to complete it. This incident has provided emergency

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funds. We are in the process of implementing the plans. On the positive side, the new plan provides a lot of flexibility and will allow us to test total confinement, scraping and hauling, flush, alternate sand traps, with and without solids separation and measure crop uptake of nutrients. These results may help to save dairymen some money in the future.

A fortunate turn of events in that Dr. Van Horn, former Assistant Director of International Programs and former Chairman of Dairy Science returns to the department. He will have responsibility for the waste management program.

With the addition of adding two new faculty and providing housing for one Vet College faculty member, space in the new building is at premium. To adjust, a minor renovation project allowed us to develop a separate office suite to house all of our DHI activities. Extra space will be required to house the new Operations Manager. At the recent DHI meeting, Mike Rector was hired in that position and will begin work April 16.

Special Thanks

Once again I wish to thank all the Florida Dairymen who make the milk check off possible. The program has made a major financial contribution and has been a real moral boost to the scientists. Dairymen, especially those on the Project Review Committee, are taking a very intense interest in our research. We welcome that.

Finally, I wish to thank those dairymen who help to make animals available to us and allow us to carry out research projects on their farms. Without that cooperation, the amount of research would be greatly reduced.

As I review what has happened over the last few years, I sense a stronger bond developing between our faculty and the dairymen. That strong working relationship will allow us to make dairying in Florida a profitable and growing industry.