

Appendix 5. News article on the first SNRE Distinguished Achievement Award, 3-Jan-12

SNRE Distinguished Achievement Award – Dr. Victor E. Cabrera

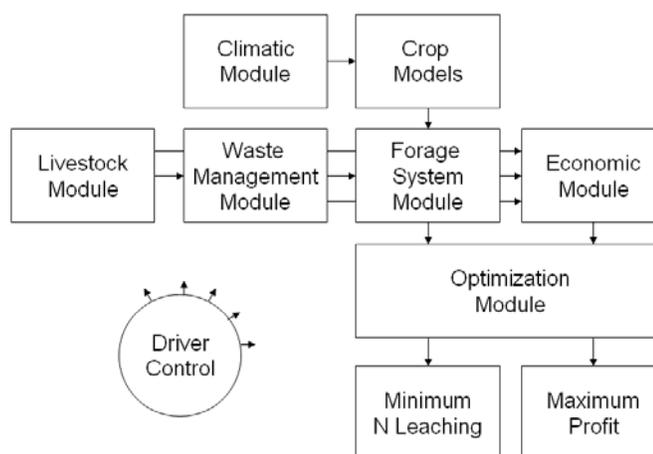
Few stop to think about what dairy producers are doing to make this white beverage green. SNRE Alumnus Victor Cabrera is being recognized with a SNRE Distinguished Achievement Award for his innovative work to reduce environmental impacts, while maintaining profitability of dairy farm operations. Victor developed simulation models to be used as tools by producers, regulatory agencies, and extension services to examine the economic and ecologic sustainability of dairy farms in Florida and Wisconsin.



Now, Victor is an Assistant Professor and Extension Specialist at the University of Wisconsin-Madison in the Department of Dairy Science, but his journey did not begin in The Dairy State. Victor is from Peru, where he earned his B.S. and Agricultural Engineer degrees from the Universidad Nacional Agraria La Molina, in Lima. In Peru, Victor worked as a farm manager, extension agent, and extension planner.

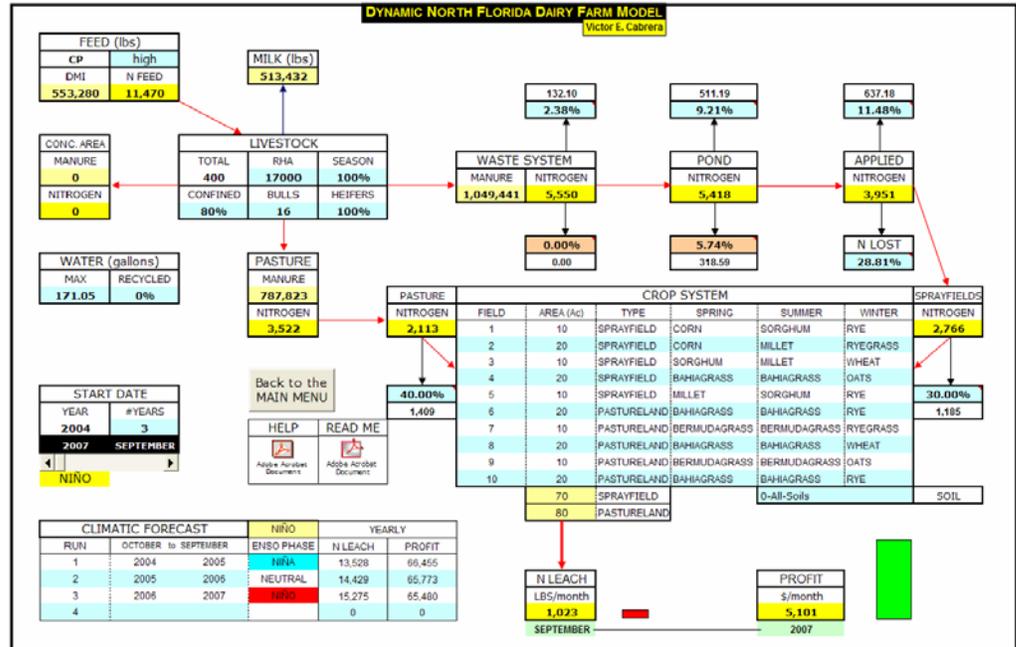
Victor came to the University of Florida in 1997. Here he earned his Master's in Agricultural Education and Communication before he earned his Ph.D. in Interdisciplinary Ecology, under Peter Hildebrand in 2004. James W. Jones, Robert McSorley, Albert De Vries, and the late Hugh Popenoe served on Victor's committee.

It was for his doctorate research that Victor began to study dairy farm operations in North Florida. Dairy farms in North Florida are being examined closely by regulatory agencies because of increasing emphasis on nitrogen levels in the Suwannee River Basin. Victor's research assessed best management practices (BMPs) aimed at reducing the environmental impact of North Florida dairy farm operations, specifically focusing on nitrogen pollution in groundwater. The product of his research was the Dynamic North Florida Dairy farm model (DyNoFlo Dairy). The model simulates the amount of pollution resulting from specific farm activities, in addition to ways the



farm managers can mitigate the pollution. This user-friendly computer application is a decision support system that takes into account environmental variables (e.g., climate and soils), different management practices (e.g., livestock, waste, and crop system management), and economic analyses.

The DyNoFlo Dairy farm model can be used to evaluate both the economic and the ecologic sustainability of these farms under varying climatic conditions. The model first simulates the flow of nitrogen through cows to weight gain, reproduction, milk production, and waste. It also



simulates the waste management, including flushing the waste into storage ponds and its application to crop fields via irrigation. Then the model estimates the accumulation of nitrogen into different crops or its leaching into soil. It examines how nitrogen leaching differs between years that are wet and cold (e.g., El Niño years), neutral, or dry and warm (e.g., La Niña years). The economic component then calculates a monthly profit from the livestock, waste, and crop simulations. With this information, the model uses linear programming to develop management strategies that maximize or minimize these functions given certain restrictions. For example, the model can minimize nitrogen leaching under different farm conditions (e.g. number of cows or different crop rotations) and profit levels or the model can maximize the farm's profit, which is limited by the levels of nitrogen leaching. This allows the farm managers to make seasonal adjustments to cow feed, cow numbers, and sprayfield crops so levels of nitrogen leaching remain low without impacting profit.

After leaving the University of Florida, Victor spent two years as an Assistant Professor and Extension Dairy Specialist at New Mexico State University. Then Victor moved on to the University of Wisconsin-Madison. Victor's recent research focuses on modeling the effects of intensification of Wisconsin dairy farms on farm performance and economic decision-making of improved dairy farm management technologies. The results of this work provide important information concerning factors that determine the efficiency of dairy farms. He is currently working on three large projects: one on improving feed efficiency of dairy cattle, another on improving dairy cattle reproductive efficiency, and another on assessing the impacts of feed supplementation on organic and grazing dairy farm systems.

In Dr. Hildebrand's words, "Victor Cabrera is quite an amazing individual." It has only been six years since Victor received his Ph.D. and he has amassed an impressive list of publications, accomplishments and awards. Victor has 22 refereed journal articles, 45 extension publications, and co-authored three book chapters. His work has also resulted in 35 decision support tools. Victor received the Alfred Toepfer Faculty Fellow Award from the University of Wisconsin and the Foundation Scholar Award in Dairy Production from the American Dairy Science Association. The National Dairy Science Association said that ". . . Cabrera combines applied research, interdisciplinary approaches, and participatory methods to deliver practical, user-friendly, and timely decision support tools for dairy farm management. Cabrera's major contribution to the dairy industry is the creation and dissemination of decision support tools together with the development and maintenance of an effective dairy management webpage supported by scientific applied research and scholarship work. The scientific tools are aimed to improve dairy farm profitability, environmental stewardship, and enhance the resilience and long-term sustainability of the US dairy farm industry."

In addition to his research and university teaching, Victor has also done a considerable amount of work internationally. He has worked as a consultant in eight countries. Victor has also presented internationally, discussing rural sustainable development, farm management, and adaptability analysis. Now, Victor continues to work closely with county-based extension faculty, dairy producers, and consultants to help enhance farming systems and improve the quality of life for rural people.

Image 1- Dr. Victor Cabrera discussing management options with a dairy farmer.

Figure 1- Diagram of the components of the model and their connections.

Figure 2- The DyNoFlo Dairy farm model main screen.