

Farm simulation important

Computer modeling of farm systems looks at key characteristics and functions of a farm in order and then simulates how different conditions and courses of action will affect the farm.

Farm enterprises are complex, interrelated systems with multiple interacting components. Each component or factor affects and is affected by its counterpart components. Any change triggers a "domino" effect in the system. Simulation models play an important role forecasting responses of these systems to any internal or external stimuli.

Computer simulation models are constantly being developed for agricultural farm systems.

More and more journal papers are being published based on experiments entirely performed on computers.

Simulation of farm systems is

gaining popularity because it is quick and inexpensive and offers spatial dimension for research. Costs for the development of models are a fraction of field experiments.

Once a simulation model has been tested, experimentation is only a "click" away.

Simulation modeling does not replace or contradict field experimentation. Instead, simulation modeling relies heavily on field research to shape its equations and validate its results.

AG SENSE



By Victor Cabrera

Simulation modeling also allows researchers to travel in time as quickly as they want to foresee potential impacts of today's changes without disturbing the actual systems they study.

For example, a dairy farmer could assess the overall long-term impact on the decision whether to raise or buy replacement heifers without having to actually do it. In addition, modeling does not need to rely on sampling because it is capable of simulating entire populations. A dairy farm model could represent and perform analyses on every animal on a farm.

In order to simulate farm systems, scientists need a deep understanding of these systems, which usually is accomplished working collaboratively with farmers. A new trend toward modeling with the participation

of both groups promises to reduce the gap between scientists and farmers as the simulation work becomes more meaningful for final users. This plays an important role in the communication and dissemination of technologies as part of the mission of NMSU's Cooperative Extension Service.

New Mexico State University's Agricultural Science Center at Clovis is keeping up with current scientific trends and developing modeling frameworks that are adapted to dairy and cropping systems in New Mexico and West Texas.

Victor Cabrera is an Extension dairy specialist at New Mexico State University's Agricultural Science Center at Clovis. He can be contacted at 985-2292 or by e-mail: vcabrera@nmsu.edu.