

## My virtual dairy farm

The complex dairy farm structure and management can be challenging for new veterinarian students to learn and understand. For this reason, a team from the veterinary university in Barcelona, Spain, developed a web-based virtual dairy herd with the purpose to teach students the management of dairy farms (<http://www.virtualdairyfarm.org/>). The objective of the team was to create an introductory tool to dairy farming where the student can interact with all the disciplines around dairy production (reproduction, nutrition, management, physiology, health, economics, and others) and to test the efficacy of the tool to teach students against traditional teaching in short and long term.

Simulations of the virtual dairy farm are based on cow-by-cow and day-by-day. The simulation of the tool starts with the birth of the calves (50% chance of male or female) and with its genetic traits of milk production potential. Furthermore, the development of the tool is designed to guide the students to make management decisions from the start of calf's life on the dairy farm (navel disinfection on the first day of life), to forage production, disease treatment, selling culled cows and many others in depth factors in the production chain.

First semester veterinarian students were enrolled to evaluate the efficacy of the virtual dairy herd tool. Three factors were considered to evaluate the performance of the tool. i.e. 1) the students' performance after 150 d using the tool, 2) a survey on the students comparing the tool with traditional teachings, and 3) an initial test on dairy production vs other species, and two years later a similar test with the same students to assess knowledge retention in comparison with traditional teachings.

The results of this study showed that students using the tool had an average score of 87.8 points out of 100 which the authors considered as highly efficient in comparison with traditional teaching methods. The majority of the students also rated the tool as an effective and motivating way of learning, compared to traditional methods, and finally, results from the test comparing what was learned with the tool vs other species learned with traditional methods showed a significant improvement in short and long term comparisons.

**Our conclusion:** This study has shown that self-learning with engaging tools proved to perform better for knowledge retention in short and long term than traditional teachings. Although this tool had great results for theoretical and introductory purposes, students should always have the opportunity to apply the knowledge gained with this tool on the field for better results. (jc)

Source: Calsamiglia, et al. (2020), J. Dairy Sci. 103, in press