

Time for Technology

Innovations at Eurotier 2012

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The 2012 Eurotier agricultural trade show, November 13 to 16, in Hanover Germany, is one of the largest in the world with over 2300 exhibitors from 51 countries. One of the features of this show is the emphasis they place on innovation, with a high profile awards program for the newest and most novel technologies submitted by exhibitors. Many European companies choose Eurotier as the place to showcase their latest developments, likely in part because of the prestige associated with a winning entry. Winners for 2012 have just been posted on the website at www.eurotier.com/innovations. Three out of five gold and 5 of 19 silver awards have dairy applications and involve some form of automation or precision technology component. Most of the time these devices are not as market ready as one might expect, but they can provide an interesting insight into what we may see marketed commercially in North America in three to five years.



One of the big winners this year is GEA with a modular robotic milking unit that,



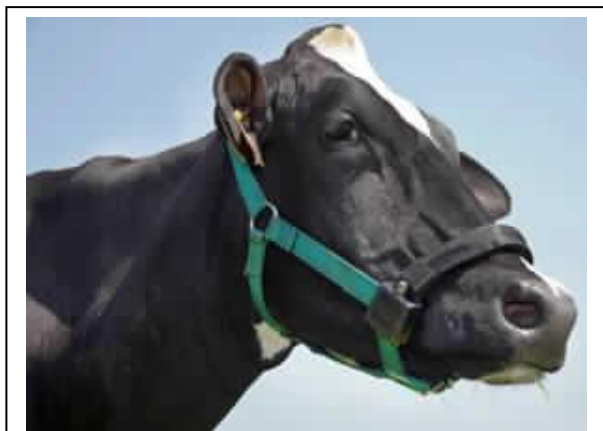
GEA's modular milking robot can be installed in any parlor.

according to the product description, can be attached to any existing herringbone, parallel, tandem or rotary milking parlor. The equipment itself looks like a stripped down Mlone milking robot, and there is no reference to the product on the company website. So it is likely not really market tested or market ready today. But if and when it makes it to the farm gate, it could be an interesting alternative to traditional robotic milking. While the notion of mounting a new piece of hardware in an existing parlor sounds appealing,

most milker claws in parlors milk between 1/6 and 1/2 the number of cows per day as a set of cups in a conventional robotic milking system. So unless a robot arm sold for parlor application is much cheaper than the others, robotic parlor upgrades could be a costly venture.

The German company Holscher + Leuschner won gold for technology that has been in development by a number of companies for several years. They are 3D imaging the rumps of cows with a high tech camera, and using the image to establish a body condition score. They also won for similar technology predicting the weight of finishing pigs. Their "optiCow" system claims to provide both weight and body condition information. While a monitoring tool like this is not likely going to make you rich, if the cost is reasonable it could prove valuable in monitoring weight and condition changes in order to predict fertility of individual cows and provide a measure of the success for the feeding program. One of the biggest benefits of these kind of tools is their objectivity. In various workshops I routinely ask groups of 15 to 20 feed advisors, veterinarians or farmers to tell me what percentage of the herd we are looking at is above condition score 4 and below condition score 2. The range of subjective answers I get from these workshop groups is all over the map. A 3D camera and computer image analysis cannot see any better than the human eye, but the answer it offers will be much more useful in benchmarking because it will be consistent across herds. Whether or not the market winner turns out to be optiCow, technology of this type is going to be in commercial use in the next few years.

Swiss company ITIN + HOCH, won gold for a device that is very similar to rumination/activity monitors that are already sold commercially. But rather than a neck strap, their RumiWatch system includes a halter that places the motion sensor lower on the jaw. According to the product description this allows it to differentiate between eating, drinking and cud chewing activity, while it also records pedometer style information on locomotion and resting behaviour. The tags have a two year battery life and transfer data wirelessly to a PC for analysis. Rumination monitoring is proving to be fairly useful for evaluating rumen health and the drop in feed intake at calving is a very good predictor of when a cow should go in the calving pen. But compared to competitors, the halter looks more troublesome than a neck strap. Unless differentiation between eating drinking and chewing proves to be very valuable, this product may not be of sufficient interest to displace the rumination tags already in our market.



The RumiWatch halter positions the motion sensor so it measure eating, rumination and drinking separately

Both DeLaval and GEA won silver awards for dairy barn "process control systems". De Laval's system is focussed primarily on controlling mechanical equipment by regulating

and coordinating electrical switching. By using a central device, barn equipment can be synchronized for greater efficiency. For example cooling systems involving fans, curtains and sprinklers can be regulated harmoniously to cool cows effectively at minimal cost by combining different settings based on temperature, wind speed and humidity. These kind of system with varying degrees of complexity, from a variety of companies, are starting to appear on farms now. Since this does not need to be a high cost item, there is probably more of this kind of development on the way. GEA won its silver award for software that monitors and "visualizes" the movement of cows, people and equipment in the barn to help management optimize work routines and monitor how they are carried out. Except for very large farms the benefits of this seem a little more futuristic. A third silver award went to a German company that has developed a paperless, uniform interface between cattle farms and their external partners like milk recording, AI and breed associations. Initiating that kind of innovation may be more difficult because it requires the participation of these service agencies, but the potential to save time and improve communication with this type of tool would be substantial. I have long maintained that it is high time the industry starts to look directly at information such as robot visiting behaviour of sire daughters, but it will not likely happen until the data is more easily accessed than it is today.

Other silver award winners included an on farm milk ELISA test for "haptoglobin" a protein associated with inflammation and hence an indicator of clinical mastitis. And then there is the "iVET birth monitor", a probe inserted into the vagina of a cow before calving. When the amniotic sac and calf begin to push the device out, It phones you to tell you the cow is calving, and it also monitors the cows temperature. And of course not all innovations involve high tech electronics. A French company Bioret Agri won with a "water filled brisket barrier" that can be placed in the front of a row of freestalls and filled to the desired size and elasticity. Simple ideas are sometimes best, and in the age of waterbeds and gel mats for cows, perhaps water pillows and headboards will be one of the big winners from the list of 2012 Eurotier innovations.