



10-1-2011

Ensuring a Safer Egg

Sally Silverman
University of Pennsylvania



Mare and foal behavior is just one of the many interactions Dr. McDonnell and her team study in the semi-feral pony herd.

pasture, they likely also get supplemental treats from young neighbors despite a large “don’t feed the ponies” warning on the fence.)

“It’s not exactly like going to see wild horses. They are contained, but that’s the beauty of it,” said Dr. McDonnell, who has been at Penn Vet since 1981. “We’ve seen them every day since 1994, and because their wandering is limited to the pasture enclosure we can observe the whole herd so we know a lot more about their natural social organization than we would if they were out west where the terrain is so tough and the forage is so sparse that the horses are spread out. There, the best you can do is stay with one family at a time, so you are unable to readily understand the social interactions among families.”

But it’s more than just convenience that lures researchers and students (from places like the University of Delaware, Delaware Valley College of Science and Agriculture, Penn State, Cazenovia College and Penn’s own psychology department) to this classroom on the hoof. It’s also what’s been — and can be — learned there.

“Once you get students attuned to natural horse behavior, they see that most health problems in horses have resulted from how we manage them,” said Dr. McDonnell.

The Penn Vet herd doesn’t experience the same health problems as domestic equines. There’s no colic, no laminitis and no sexual dysfunction, the bane of many breeders who also come to consult with Dr. McDonnell.

Since the herd has become a lure for students, said Dr. McDonnell, the center has created short courses specifically for them that their own institutions have neither the resources nor faculty to provide. As a bonus, she says, “these courses generate funds that help to support the herd.”

There have been some other unanticipated benefits of what could be called Penn Vet’s open pasture gate policy.

Ensuring a Safer Egg

Penn Vet researcher leads charge in developing safe-egg testing kit for FDA

In August 2010, an outbreak of *Salmonella* Enteritidis (SE) was responsible for illness in almost 2,000 people in at least 25 states. More than 550 million eggs were recalled from the market. While methods have been in place to test for the presence of SE in eggs, the traditional methodology is time consuming, requiring up to 10 days to determine the presence or absence of SE in egg samples.

Recognizing that this timeframe wasn’t acceptable, the microbiology laboratory at Penn Vet’s New Bolton Center has played a significant role in the development of rapid SE-specific molecular diagnostic methods. The polymerase chain reaction (PCR) test developed at Penn Vet allows quick determination of the presence or absence of SE in egg samples, and provides accurate results in approximately 27 hours — a tenfold reduction in waiting time for results.

This methodology came in handy for the Federal Egg Safety Program, which requires all large-scale producers in the US to test for SE before products reach consumers.

As a result, the *Salmonella* Enteritidis Detection Kit was developed by Shelley Rankin, PhD, associate professor of microbiology at Penn Vet and chief of NBC’s microbiology, in collaboration with The Life Technologies Corporation, which allows producers to quickly test their eggs for SE. FDA-approved for use in the Federal Egg Safety Program in early 2011, the kit was validated by Dr. Rankin’s lab.

“Penn Vet has been collaborating with the Commonwealth of Pennsylvania to ensure food safety for decades,” said Joan C. Hendricks, VMD, PhD, the Gilbert S. Kahn Dean of Penn Vet. “The adoption of our egg-testing protocols by the FDA illustrates our researchers’ success in their field and the importance that veterinary researchers play in ensuring public health and food safety. I am thrilled that Penn Vet is continuing to lead the way in setting the standard in food safety and public health.”

“The FDA equivalence determination for this test marks a milestone for the egg industry in this country,” said Dr. Rankin. “The Commonwealth was the first state in the nation to initiate a voluntary egg quality assurance program and the Pennsylvania Animal Diagnostic Laboratory System will be the first to implement this new level of testing. It’s very exciting that the FDA has adopted this test for the Federal Egg Safety Program. This action demonstrates their commitment to delivering the safest quality food to the consumer and I’m proud to be a part of that trend.”

Penn Vet has been active in the development and implementation of the state’s PEQAP (Pennsylvania Egg Quality Assurance Program), and much of what has been learned and shared by PEQAP forms the basis for the national Egg Safety Program. Dr. Rankin has more than 20 years experience in the detection and characterization of *Salmonella* from human and animal sources.

—Sally Silverman