

# CONTINUOUS IMPROVEMENT IN Equine Ranching



PHOTO: SHUTTERSTOCK/RITA KOCHMARJOVA

## Canadian breeders producing quality foals

By Shelagh Niblock, PAS

North American horse owners may not be aware that Canada is the home of Linwood Ranch, an equine breeding facility that has generated peer reviewed research in recent years on subjects such as equine behaviour, equine welfare, stall design, and the requirements for lying down time for healthy horses. Linwood Ranch is a PMU or “pregnant mare urine” ranch in Manitoba, and is also where active research is conducted on many equine welfare issues affecting all of our horses.

Equine ranching for the production of pregnant mare urine (PMU) for pharmaceutical use has been

happening in Canada and some parts of the United States for many years, but horse owners often know little about what the industry is all about. Although social media offers anecdotes on what is supposedly wrong with equine ranching, the reality is that all horses and our Canadian equine industry have benefitted from the PMU industry.

### What is PMU?

In the 1930s, researchers in Canada discovered that pregnant mare urine was a safe, concentrated source of biologically active, water soluble

estrogens. At that time, it was becoming known that the symptoms of menopause and the progression of diseases such as some cancers and osteoporosis could be arrested by supplementing those affected with conjugated equine estrogen, or CEE, derived from the urine of pregnant mares. The new medication was called “Premarin,” short for “pregnant mare urine.”

The medication was approved for use in Canada in 1942, and in the USA in 1943. The pharmaceutical company initially behind the development of this product was Ayerst Laboratories. Ayerst merged with Wyeth Laboratories in 1987,





PHOTO COURTESY OF NORMAN LUBA/NAERIC

**Mares foal while on pasture and stay on the pastures with their foals until early autumn. Foals are weaned at four months of age or older.**

with the product thereafter produced by Wyeth until the company was taken over by Pfizer in 2009. Premarin has been produced by Pfizer since that time, and all equine ranches producing PMU are under contract to Pfizer. Equine ranchers are paid according to the concentration of estrogen they ship, not by the volume of urine they ship.

### History of equine ranching in Canada

In the early days of equine ranching, the collection of urine from pregnant mares was a haphazard process, with most of the farms located in Quebec. Eventually, it was realized that the quality, consistency, and cleanliness of the product collected could be greatly

improved if the farms were larger with purpose-built facilities dedicated to the housing and care of the pregnant mares. A processing facility was built in the 1960s in Brandon, Manitoba and at that time, the farms caring for the mares moved primarily to the provinces of Alberta, Saskatchewan, and Manitoba as well as some in North Dakota, USA.

The 1960s were a time of increasing knowledge about the benefit of replacement hormones for menopausal women, and the number of farms expanded to approximately 500, mostly in Canada, with the urine of literally thousands of mares being collected. Since that time, due to improvements in harvesting and processing, and concerns raised by a study conducted under The Women's Health Initiative in

2003 (which suggested that hormone replacement in menopausal women could be related to an increased incidence of some cancers, though the research has since been discredited) there remain, in total, 18 equine ranches under contract to Pfizer. All are located in Saskatchewan and Manitoba, including the Linwood Equine Ranch research facility. At the time of this writing, there are no other PMU ranches under contract for the pharmaceutical industry in North America.

### What does ranching for PMU entail?

Collecting pregnant mare's urine is built around the mare's gestation period. Mares spend the summer out on pasture with their foals at foot. They are



Today's PMU ranches specialize in producing quality, pedigreed foals. All PMU broodmares are registered stock, as are the stallions used to breed them.

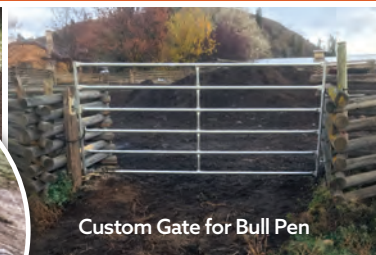


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pastured with a stallion who is registered and has a pedigree determined to be the best for the group of mares he is covering. Virtually all PMU broodmares and the stallions used to breed them are now registered stock. The typical equine ranch of today will specialize in producing quality foals of one of several different breeds, including Appaloosas, Quarter Horses, Draft breeds, Sport Horses where a Draft stallion is used on a Thoroughbred mare, and Warmblood breeds.

Mares foal while on pasture, and in order to keep a roughly 12-month breeding cycle, it is desired that the mares be bred back on their foal heat, the first heat cycle after foaling, or soon after. Mares and foals are monitored while on pasture with veterinary attention to their health and details like vaccinations and parasite control for both. The mares and foals come off summer pasture in early autumn, and the mares get a health/pregnancy check at that time. Foals are typically weaned at approximately four months or older, but never younger, as is set out in the contractual obligations with Pfizer. Pregnant mares typically go into housing in insulated barns by the end of November, and the urine collection process is then



initiated. Collection is discontinued at approximately the end of February when the mares will go back into a herd arrangement, and eventually be put out on pasture for foaling when the weather will support it.

Mares are in tie stalls of specific dimensions with bedding type and amount dictated by the *Code of Practice for the Care and Handling of Horses on PMU Ranches* (COP). The COP for Equine Ranches collecting PMU was first established in 1990 and predates the NFAACC *Code of Practice for the Care and Handling of Equines*. The most recent COP was issued in 2018. All equine ranches contracted to Pfizer must follow the COP or they risk having their contract cancelled.

Urine is collected through use of apparatus called a "boot," which is placed over the vulva of the mare. The boot is attached to hoses which take the urine away. The design of the system is such that they are comfortable for the mare to move around and lie down. At least twice per week, the boots are removed and PMU mares are given exercise periods in a field or yard where they can move around and socialize.

All feed provided for PMU mares must be tested for nutrient content, and all rations fed must meet or exceed nutrient levels as laid out as minimums in the 2007 National Research Council *Equine Nutritional Guidelines* for pregnant mares of a specific body weight. Water is generally delivered automatically five times per day. Peer reviewed research done at the Linwood Ranch has determined that repeated water delivery at regular times of the day is superior for the health of the horses rather than free choice water (Freeman et al., 1999; McDonnell et al., 1999).

### Are PMU horses well cared for?

Through the 1960s and up to the end of the 1980s, the PMU industry saw rapid growth, with increasing numbers of farms and mares being collected. In the early days, there was not a lot of concern regarding the care and future for the foals, which at the time were the by-product of the PMU industry. Foals were often consigned to feedlots for the human food industry. Open mares and broodmares past their prime were also frequently shipped to auction.

In the early 1990s, concerns began to mount from animal rights and welfare advocates for mares being continuously housed for the collection of PMU. Questions were raised about the welfare of the mares and their foals. One of the first responses of the industry to these concerns was the creation of the *Code of Practice for Care*

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The mare turnout pen at a PMU ranch. During the urine collection period, mares at the PMU ranches are turned out for exercise and socialization at least twice weekly.

verify that the COP was being followed.

Inspections were conducted without prior notice to ensure that the visits represented an accurate assessment of ranch conditions. In general, inspection findings were that equine welfare on PMU ranches was very good, but that there were areas that could benefit from attention, including stall design, equine behaviour research, exercise needs, and water intake.

### Research and the Continuous Improvement Process

As a result of recommendations, Wyeth Laboratories, which was responsible at that time, established the Continuous Improvement Process (CIP) with the purchase and establishment of a PMU research ranch, Linwood Equine Ranch, to support peer reviewed, scientific research on animal welfare issues for housed horses. Wyeth also established scientific committees including veterinarians, animal welfare

and Handling of Horses on PMU Ranches, issued in 1990. In 1995, a variety of welfare organizations — including the Canadian Farm Animal Care Trust (CanFact), US Department of Agriculture (USDA), Royal Society for the Prevention

of Cruelty to Animals (RSPCA), American Association of Equine Practitioners (AAEP), Canadian Veterinary Medical Association (CVMA), and International League for Protection of Horses (ILPH) - were invited to inspect PMU facilities and

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specialists, and equine researchers to oversee their planned research program, resulting eventually in the creation of Equine Ranching Advisory Board (ERAB), an independent board that advised Wyeth (and now Pfizer) of research that needed to be done in specific areas of equine welfare. Research goals include matters of importance for PMU mares, but the findings of the researchers have been of benefit to all horse owners. A great deal of published scientific research has arisen from the work initiated by ERAB in their oversight of the PMU industry.

After the initial inspections and recommendations by welfare organizations in 1995, a follow up was completed two years later in 1997 by veterinarians from the AAEP, the CVMA, and the ILPH to review how well industry was responding to criteria set out in the initial review. The report generated (*Equine Veterinarians' Consensus Report on the Care of Horses on PMU Ranches*) found that the care of horses on PMU ranches was good and that the CIP was being followed.

The outcomes of the research and the CIP have been impressive to say the least. There are few other animal agriculture systems where animal welfare is monitored as stringently. Mares have come to be regarded as an investment, not only because they can produce PMU, but because good mares with good pedigrees can produce valuable foals. Mares are chosen for their bloodlines instead of their body size, and like any valuable broodmare, those that fail to conceive one year are worth keeping for rebreeding the following year.

### How is the health of PMU mares monitored and regulated?

The regulation and oversight of the PMU Equine Ranching industry is extensive and multifaceted, but it is particularly stringent around requirements for the care of the mares. In Canada, legislative oversight includes federal policies such as the *Health of Animals Act* and the related regulations, and the *Reportable Diseases Regulations*. Provincial regulations include adherence to the NFACC *Code of Practice for the Care and Handling of Equines*, as well as the *Code of Practice for the Care and Handling of Horses on PMU Ranches*.

All equine ranches producing PMU must abide by the rules laid out in the contract with Pfizer. These include

that the rancher abide by all federal and provincial regulations as well as the COP. In addition to this, all PMU farms have a contractual requirement to provide mandatory vaccination, turnout programs, feed testing, hoof care requirements, and the promotion of mares and their foals as a valuable addition to Canadian horse owners.

To facilitate oversight of these contractual requirements, all PMU ranches must be part of the Field Audit Ranch Management System (FARMS) Audit program, which requires weekly

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submission of herd health data through a digital program. All ranches are required to undergo a review of herd health protocols and weekly data by an independent veterinarian once per month. In addition to these requirements, all horses on PMU farms must have a minimum of two health checks per year by their veterinarian. The contractual obligations for the ranch owner are, without a doubt, some of the most stringent in animal agriculture in Canada, and they certainly far exceed the practices on many private farms.

### What is NAERIC?

The North American Equine Ranching Information Council (NAERIC) is a non-profit association of its equine rancher members. Based in the state of Kentucky, USA the objective of NAERIC is to provide information on equine ranching to the public; to support its members with research and information; and to develop innovative marketing programs for horses bred through the PMU programs. NAERIC advocates for the use of good research and science in the pursuit of superior equine husbandry and welfare. NAERIC

facilitates the sharing of information between the equine ranches, most of which are family farms, and the public. The NAERIC website is very interesting to visit even if you are not in the market for a well-bred performance weanling.

### Marketing and incentive programs

The NAERIC website includes links to the NAERIC registered PMU ranches, making it a resource for the person who is interested in the availability of pedigreed foals produced on PMU ranches. Foals produced on equine ranches that are registered with NAERIC are eligible for “the NAERIC Advantage,” a value-added incentive program including futurities with a financial payout when competing successfully at approved events.

### Youth programs, research funding, and more!

All equine ranches contracted to Pfizer support research into equine health through financial contributions from their PMU revenue. This money goes into the *Townsend Equine Health Research Fund* at the Western College of Veterinary Medicine in Saskatoon, Saskatchewan. NAERIC also supports equine research through other avenues. At the time of writing this article, NAERIC was a sponsor for Student Research presented at the Equine Science Society Virtual Symposium scheduled for June, 2021. NAERIC also supports growth in the equine industries by supporting youth groups such as 4-H with the Young Horse Development Project, as well as clinics and workshops in equine husbandry

and horsemanship skills. In 2009, NAERIC was awarded the Lavin Cup by the AAEP. The Lavin Cup is the Equine Welfare Award given by the AAEP to “a non-veterinary organization or individual that has demonstrated exceptional compassion or developed and enforced rules and guidelines for the welfare of horses.

The accomplishments of the equine ranchers and their organization NAERIC are significant in a world where there is increased concern about the welfare of animals used by humans. The PMU ranchers have taken the initiative to improve the welfare of the animals for which they care. Their proactivity has reduced the number of horses going for slaughter, and Canadian and American equine ranches also provide a source of well-bred horses for performance, pleasure, or working ranch jobs. These equine ranchers fund a variety of research efforts at numerous research facilities aimed at improving equine welfare in North America, not to mention their own industry research at the Linwood Ranch. Moreover, they also happen to provide the raw material to improve women’s health and the health of those dealing with a growing number of other ailments and illnesses in over 100 countries around the world. 🍁

*For more information about NAERIC, the equine ranching business in North America, and more about the horses they breed for sale as performance or working horses, have a look at the NAERIC website: [www.naeric.org](http://www.naeric.org).*

> **Shelagh Niblock** is a regular contributor to this magazine. Read her bio on page 90.



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