

# Genetics Company Can Help Determine Gender When Breeding

Mix some HeiferPlus from EMLAB Genetics with thawed bull semen when doing artificial insemination (AI) and you can expect 80 percent females when calves are born. Go with BullPlus, and that same percentage of calves will be bulls. Similar results can be expected with sexing agents developed for horses, hogs, dogs, sheep, goats, and even deer.

“Our technology works very well in horses,” says Tim Williams, EMLAB Genetics. “FillyPlus and ColtPlus are available for use in both frozen and fresh semen.”

Apart from the thoroughbred industry, which doesn't allow AI, the sexing agents have been very well accepted in the horse industry. Which product is used depends on the individual breeder, explains Williams.

“A purebred breeder tends to want females to sell to other breeders,” he says. “We have one customer with a rare breed, who wants only females.”

Dairy industry customers tend to reflect

the moods of the market, adds Williams. “Right now, everyone wants heifers, so we are selling a lot of HeiferPlus.”

Dairy industry journalist Pete Hardin describes Williams, a cellular geneticist, as having pioneered embryo transfer technologies, including freezing, sexing, and cloning of embryos.

Hardin recently provided a detailed look at EMLAB and Williams in the November 2023 issue of *The Milkweed*. Hardin described how Williams stumbled on his sexing agents while working in Australia on in vitro fertilization.

“He discovered the solution of reagents with which he was treating the embryos was yielding significantly more female embryos,” wrote Hardin.

“One day, I started removing things from the composition of reagents and discovered it produced only males,” recalls Williams. “The element I removed was a catalyst for the reaction. High levels tipped it toward females, and low levels pushed it toward

males.”

It took Williams about 10 years of research to understand how it worked. He says he's still learning about the process today.

Acceptance of the technology has been slow, according to Williams. When he first brought out HeiferPlus and BullPlus, people didn't believe it could work. “When people tried it, they believed in it,” he says.

A growing segment of the business is custom semen collectors. They deal mostly with beef producers who have a prize bull that's getting old.

“They don't want to lose the genetics,” explains Williams.

EMLAB is more than just sexing agents. The company specializes in AI, embryo transfer, and in vitro fertilization technology for multiple livestock species. Williams currently does business on five continents, working with a wide variety of species from alpaca to zebu.

EMLAB sells its sexing agents and pregnancy tests online. Prices vary by species



**EMLAB Genetics technology can be used in both frozen and fresh semen for many different breeds.**

and use, whether with fresh or frozen semen or with a pre-freeze collection.

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The Cotter Crate design makes management tasks like dosing, vaccinating, tagging, and weighing easier and safer for handlers and animals.



## Sheep And Lamb Crate Offers Farmers Solutions

Brothers Nick and Jack Cotter of Limerick of Abbeyfeale, Ireland, have developed a new handling and weighing system for sheep and lamb farmers called the Cotter

Crate. This equipment is now combined with a targeted worming system.

“Vaccinating lambs is a difficult job,” says Nick Cotter. “It takes a long time, plus every-

one has to be around to help. On top of this, you're constantly bent over at 90 degrees. It's very physically demanding.”

The Cotter Crate design makes management tasks like dosing, vaccinating, tagging, and weighing easier and safer for handlers and animals.

The handling system brings the animals in a single file to the height of the standing operator. It uses V-shaped sides and a drop floor, taking their legs out from under and fully immobilizing sheep and lambs.

The Crate began as a college project, winning a few innovation awards before undergoing remakes and alterations in response to farmer feasibility studies and recommendations. The final version included lead-up ramps with anti-slip rubber mats, anti-backing flaps, a wheel kit, and holders for EID readers, weigh heads, and tablets.

Once satisfied with the unit, the brothers added a Bluetooth mobile phone application as a low-cost weighing option rather than owners having to buy a standalone weigh head.

On the heels of the weigh option, the brothers launched their SmartWorm app to

combine animal weight with nutrition, potential growth, rainfall, temperature, pasture availability, and quality.

Controlling worms is one of the biggest challenges sheep farmers face as modern controls are becoming unsustainable due to expensive drug resistance issues. The SmartWorm algorithm predicts which animals need deworming treatment and suggests a targeted selective worming procedure.

“Our hardware and software solutions are the most practical, simplest, and complete ways of reducing wormer use on-farm by 40 to 60 percent without compromising productivity or welfare,” Nick says. “It's a game-changer in terms of labor because you're only having to drench half or less of your flock. For the average Irish sheep flock (109 breeding ewes), a return on investment using our software solution is delivered within 18 mos.”

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Photo courtesy of pixabay.com via Pieryl.com

Common yarrow growing in field.

## These Pasture Plants Have Hidden Benefits

Healthy grazing takes more than just grass, according to Gabriel Francisco, conservation technician with the Van Buren Conservation District in Michigan. Francisco points to common yarrow and chicory as two prime examples. Francisco profiles such plants monthly in regional publications.

“People don't realize that common yarrow

is an important medicinal for sheep and goats on pasture,” says Francisco. “It's a very mild dewormer and helps keep them at bay if you overgraze. Grazing below a 4 in. height can lead to barber's pole worms, but common yarrow can help stop them from encysting in the animal's gut.”

Chicory can have a similar medicinal

impact on grazing animals, adds Francisco. “Chicory is also a natural dewormer and helps settle stomach issues like bloat,” he says. “Sheep and goats won't normally eat it, but if they're feeling ill, such as from eating too much legume, they'll seek out chicory to relieve bloat.”

Francisco points out a common misconception that grass is what's needed for on-pasture weight gain. “People forget about broadleaves and focus just on grass,” he says. “Grass is great, but straight grass isn't everything. Broadleaf plants have important benefits also.”

Chicory is one that deserves a closer look. Common chicory is high in protein, carbohydrates, and vitamins K, A, C, and B5. It's also high in soluble fat and low in insoluble fiber. All that makes it an excellent forage. In addition, it's a great source of calcium, iron and manganese, nutrients vital in bone formation, strength, and durability.

The only downside is that it's also fairly high in tannins. These make it bitter to grazing livestock. “Researchers in New Zealand and Australia are trying to breed out the bitterness and develop new strains of chicory,” says Francisco. “Ironically, it's thought that the tannins are what give it anti-parasite benefits.”

Yarrow has its place also, although not everything about it is as positive, warns

Francisco. Common yarrow can quickly overtake an area of mildly disturbed soils and seems to do well in sandy and nutrient-depleted areas.

“Common yarrow isn't very competitive or hardy when other plants arrive and shade it out,” he says. “Most livestock don't find the taste of the plant palatable, and some studies have noted that yarrow may be toxic to dogs, cats, and horses. Consumed by cows, a chemical in it can cause unfavorable flavors in milk.”

Where yarrow does shine as a pasture plant is with sheep and goats. While they won't eat much of it due to its bitter taste, when they need it, they'll seek it out.

Another positive aspect of yarrow is its ability to sink deep roots. It's drought-resistant, and its leaves are rich in vitamins. Researchers have identified high levels of niacin, vitamins A, niacin (B vitamin), and C, as well as iron, calcium, phosphorus, magnesium, and potassium.

Yarrow has long been used in folk medicine as a medicinal. Researchers have established that it contains flavonoids that increase saliva and stomach acid to help improve digestion.

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