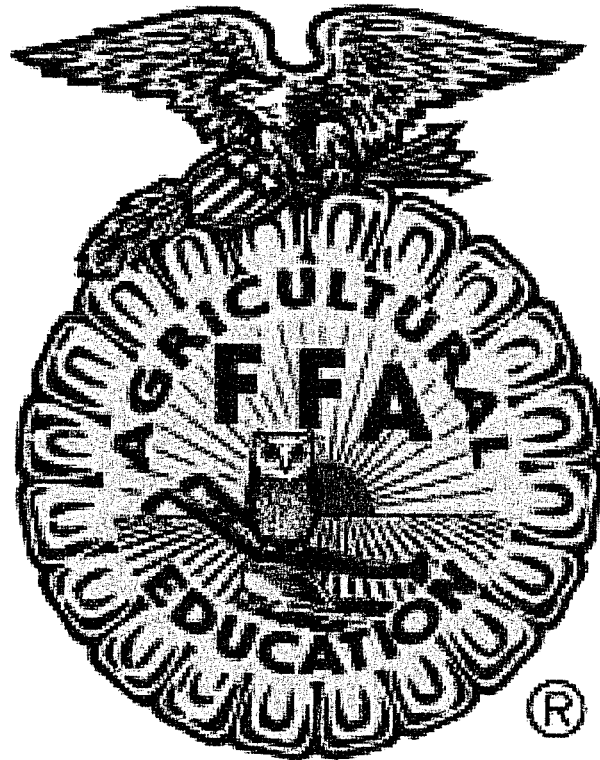


Making a Miracle



Madison McGolden

Animal Science

Fairview FFA

Making a Miracle

“Catastrophic Injury.” “Never walk again.” “Paralyzed.” These were the words that were said over and over again last fall when Buffalo Bills’ tight end Kevin Everett fell limply to the turf after making a tackle. The world held their breath as we watched the devastating hit that forever changed the life of Everett. After loading him into the ambulance, Dr. Andrew Cappuccino, an orthopedic surgeon and a member of the team’s medical staff, looked at the injured player and knew that at the moment Everett was a quadriplegic and decided to make the gutsy call that will never be forgotten. As the football player was rushed to the hospital, Dr. Cappuccino began the process of mild hypothermia or the cooling of Everett’s body temperature. Later at the hospital, he was placed in the CoolGard where his body temperature was lowered to 91.5’ which helped control the swelling and ultimately changed his life’s destiny.

A few days later, after it was determined that Everett might just survive the devastating injury and regain use of his legs, Dr. Barth Green was interviewed on news shows all across the U.S. and asked, “Isn’t this a miracle?” Highly offended, Dr. Green retorted back, “We don’t consider this a miracle at all. It is a result of twenty years of lab research that finally paid off.” This wasn’t just a shot in the dark for those surgeons, it was truly a process they had been working on for years.

Such is the case with a similar instance of years of scientific research finally paying off. It was not uncommon several years ago to hear reports of Mad Cow Disease. People cringed when the news reported of another finding. Hysteria and pandemonium often prevailed. Unfortunately, cows weren’t the only species with a devastating disease.

Sheep also are affected with their own transmissible spongiform encephalopathics or TSE. Scrapie affects sheep in much the same way that Mad Cow affects cattle.

Scrapie has been around for almost three centuries now. It was inadvertently introduced from Europe and has spread from flock to flock in the United States. Scrapie is transmitted in the amniotic fluid during lambing, affecting the brain and the central nervous system. It basically turns the brain to mush. Sheep can harbor scrapie for up to eight years without showing any symptoms and until recently, scrapie could only be detected by harvesting the head of a dead lamb. Symptoms include repeated rubbing or scratching of the body, changes in behavior such as depression or aggression, trembling, stumbling and losing weight or wool. However, there was no way of knowing for sure if it was truly scrapie until the lamb died.

The sad part of all of this is that inadvertently, scrapie could be passed and spread throughout generations of lambs before the rancher truly knew he had a problem. And once scrapie was identified in your flock, the eradication process began. Eradication simply meant that the entire flock was destroyed. Many sheep producers were often put completely out of business. Scientists and sheep breeders immediately realized this solution was not going to work and knew they had to turn to the laboratory for answers.

Dr. Katherine O'Rourke, a microbiologist from the state of Washington was perhaps the most important scientist who turned to the lab. After years and years of research, she determined that scrapie susceptibility could be found on the Codon 171 gene. Her exhaustive research was simplified for sheep breeders into a simple blood test. By testing the Codon 171 allele, sheep breeders could determine whether or not their lambs could contract or carry this devastating disease. There are only three possible

results for the Codon 171 blood test: RR, QR and QQ. If the test results are RR, the lamb is resistant to scrapie. If the results are QQ, then the lamb is susceptible to scrapie. And if the results are QR, the lamb is still resistant to scrapie, but careful consideration must take place before breeding. It's a simple Punnett square. A QR ewe bred to a QR buck has a 25% chance of producing an RR offspring, 50% chance of a QR offspring and a 25% chance of producing the undesirable QQ offspring.

As sheep producers, yes, we do take more into consideration now at breeding time. Producing quality offspring is still a major goal, but we also want to produce desirable Codon 171 results. Our breeding markets fluctuate in price with QQ and RR ewes and rams. An RR buck is often the only route smaller producers will go to ensure the safety of their herd.

Today, through the efforts of Dr. O'Rourke and her staff, eradication no longer means the entire flock is destroyed. If scrapie is detected in a dead animal, then only the QQ breeding animals at the farm are destroyed. This has virtually saved the livelihoods of producers all across the U.S. As sheep producers, we can forever be grateful to the years of research by these scientists.

I believe because of the genotyping selection of sheep, our scrapie numbers have been reduced. A slaughter study conducted between 2002 and 2003 by APHIS, the Animal and Plant Health Inspection Services, determined that the prevalence of scrapie in mature U.S. sheep is 0.4 % or one out of 250 testing positive. Today, this number has been reduced to less than 0.1 %.

Kevin Everett's treatment was a gutsy call by his doctors. And although his care has been exhaustive, controversial, and has encouraged and divided the medical

community, the fact remains, Kevin Everett is walking again. Three months after his injury Everett walks unaided at a slow, steady pace. Some consider it a towering victory to see him walk across the room. Some see it as false hope to other quadriplegics. Some see it as breakthrough science. I simply see it as a hope for the future. Hope for a better tomorrow just as Dr. O'Rourke's scrapie breakthrough was a hope for sheep producers. I am an optimistic person and I relish the idea that there is always a hope for a better tomorrow. Because of hope our sheep producers have been able to survive and because of hope, Kevin Everett is walking again.

Thank you.

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