



Sheep and Goat Newsletter—Sheep AI Article

A Summary of Sheep Artificial Insemination (AI)

We are fortunate to have a summer intern because of a grant Extension received to educate sheep producers about sheep AI. Tristan Peterson is a student at SUNY Morrisville and comes from a sheep farm in western New York. He is also helping with everything else going on around the Extension Farm. Tristan put together this article on sheep AI for the Ag News. What makes Sheep AI different from cattle?

There are many different factors that separate sheep AI from the dairy cattle. First of which is the size and shape of the cervix. The cervix on a sheep is approximately 12 centimeters in length and has 6 to 7 offset rings that make getting an AI gun through difficult. This compared to a cows cervix which is only 10 cm in length with onset rings making it much easier to pass an AI gun through. There is also no way to know if you have passed through the cervix of the ewe or not. With a dairy cow you can feel if you have placed the tip of the gun in the uterine horn or not. All these factors make it much more difficult to breed a sheep through typical AI practices than a dairy cow.

Why it is difficult to use frozen semen?

Most of the semen used in the dairy industry is frozen to preserve it over long periods of time. Due to the structure of the sheep's cervix and the viability of the thawed semen the sperm cannot pass through the cervix and fertilize the egg. Due to this, a minimally invasive laparoscopic surgery is performed by making two small incisions on the underside of the ewe. By doing this, it makes it so the frozen-thawed semen is placed directly into the uterine horn so the semen can fertilize the egg easier.

Another method in to AI a ewe, used extensively in Europe where they have progeny tested rams, is to use fresh semen. By doing this we do not kill as many sperm by freezing it, so the success rate is generally higher. First the ewes to be bred need to be synchronized. The vaginal AI method is done by collecting the ram on the appropriate day at one central point, extending the semen to last for 6-8 hours, transporting the semen to the location it is to be used at, and then implanting the semen at the start of the cervix. By doing this the sperm is still lively enough to swim through the cervix and fertilize the egg.

The benefits of practicing sheep AI:

In the north east we find it difficult to get new genetics into our flocks that are cost effective. With using AI on our ewes we will be bringing in new genetics to the flocks at a minimal cost. With the use of AI we would now be able to use superior genetics from other countries where they test the rams for production values, to greatly improve the genetics of the flocks in the Northeast. We also would like to see more

uniformity throughout our flocks. This would make it so the lambs that we see harvested every year would uniform in the shape, size, and overall structure of the carcasses. The Extension Learning Farm has been using AI sired rams for 5-10 years. We have used rams with sires from Ireland and the UK where the genetics for production on grass have been developed and tested.

How we got the grant and the seminar dates:

A group of North Country producers with input from other producers in the northeast have been discussing the idea of sheep AI for a long time. We worked together to develop the idea of a training to teach farmers what the possibilities for sheep AI are, and how they are done. We were fortunate to receive a Partnership Grant from Northeast Sustainable Agriculture Research and Education (NESARE – www.nesare.org) which includes a lab for semen collecting and extending at the Extension Learning Farm and the money to pay an instructor to come and tell us all about it. We have hired Glen Erickson of New Frontier Genetics who has 25 years' experience breeding sheep and deer. The workshops will be September 20 and 21, 2013. The first day is open to everyone and will cover laparoscopic AI, vaginal AI, collecting and extending semen, methods of using AI in your flock, health issues and more. The second day will be for producers and veterinarians that are interested in actually using AI on their farms and will be limited to 15-25 people. There will be a charge for the meetings that has yet to be determined.

Some resources for more information:

<http://www.sheepandgoat.com/articles/ai.html>

Video of Laparoscopic AI on a deer

<https://www.youtube.com/watch?v=7HQTko1hGQE>

Website with types of semen available and some good descriptions of the LAI procedures

www.toprams.com



These fact sheets are made possible through the collaborative efforts of the CCE County Associations of NNY (Clinton, Essex, Franklin, Jefferson, Lewis & St. Lawrence) To contact any of the NNY CCE offices directly: Clinton: 518-561-7450; Essex: 518-962-4810, Franklin: 518-483-7403; Jefferson: 315-788-8450; Lewis: 315-376-5270; St. Lawrence: 315-379-9192.