



# Pregnancy and Lambing Rates in Seasonally Anestrous Ewes

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Ewes out of their natural breeding season have poor reproductive performance even after the application of conventional controlled breeding techniques. Maximizing reproductive performance is important for producer profit and to remove seasonality of lamb production. Ovarian follicle (the egg-bearing structure) development and ovulation are more predictable in seasonally anestrous ewes treated with sponge-estrogen-Folligon® vs. sponge-Folligon®. Sponges were discontinued and replaced by controlled internal drug releasing devices (CIDRs).

Recently, the Barrett lab compared the hormonal and ovarian response in out of season ewes treated with either sponge-estrogen-Folligon® or CIDR-estrogen-Folligon® and observed no differences in the hormonal or ovarian response. The next step was to determine the reproductive performance of ewes out of the breeding season that are treated with a CIDR-estrogen-Folligon® protocol within commercial farm settings.

The objectives of this project are to compare the effects of a CIDR-estrogen-Folligon® treatment or CIDR-Folligon® treatment on the ovarian/hormonal response, heat, pregnancy, and lambing rates in seasonally anestrous ewes bred by laparoscopic timed artificial insemination (TAI).

A total of 99 seasonally anestrous ewes from three commercially operating farms received CIDRs for 12 days followed by an intramuscular injection of Folligon® at CIDR removal. Half the ewes on each farm were randomly assigned to receive an intramuscular estrogen injection 6 days before CIDR removal. Ewes were teased with rams starting one day after CIDR removal and subjected to laparoscopic TAI two days after CIDR removal. Blood samples and ultrasound images were collected, and heat, pregnancy, and lambing data were recorded.

The animal handling phase of this project was completed in June 2013. Pregnancy rates were 40.0% vs. 40.8% for

estrogen and non-estrogen treated ewes. There was significant variability in pregnancy rates among farms: 54.5% vs. 36.4%; 24.0% vs. 20.8%; 57.1% vs. 78.6% for estrogen and non-estrogen treated ewes. Lambing rates were 34.0% and 34.7% for estrogen and non-estrogen treated ewes. Variability in lambing rates among farms was also observed: 45.5% vs. 36.4%; 16.0% vs. 16.7%; 57.1% vs. 64.3% for estrogen and non-estrogen treated ewes. Much of the analysis for this project still needs to be completed.

Overall, there appear to be no differences in pregnancy or lambing rates in seasonally anestrous ewes treated with estrogen or no estrogen in a CIDR-Folligon® heat synchronization protocol. Variability in pregnancy and lambing rates was large among farms, which could be associated with factors such as management practices, ram semen used for TAI, and breed and age of the animals. The full story about this new synchronization protocol will be available when all of the data is analyzed.

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This project is a collaboration of Dalhousie University (David Barrett, Miriam Gordon, and Samantha Turner), AAFC (Julie Small and Traci Gowan), the University of Guelph (Pawel Bartlewski), three NS sheep producers, and OC Flock Management.

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