Experiences With CIDRs in the Virginia Tech Dorset Flock

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Fall lambing appeals to sheep producers for a variety of reasons. Fall-born lambs typically are well-suited to take advantage of strong winter or early spring market prices. Additionally, there is growing demand for fall-born lambs to meet the needs of youth which have spring market lamb shows. Favorable weather and forage production associated with fall lambing compliment these marketing opportunities. The primary limitation to fall-lambing is the ability to get a suitable percentage of ewes pregnant during a spring breeding season. Among the options producers have to enhance spring breeding success is hormonal control of the estrous cycle to induce ovulation in ewes. The sheep EAZI-BREED CIDR provides producers a user-friendly, readily available option to enhance spring breeding. The CIDR is a vaginal insert which releases progesterone, and is labeled to induce estrus in ewes during seasonal anestrus. The CIDR is a simple, easy-to-use device that is inserted into the ewe for five days, with ram introduction to immediately follow. Following is a summary of results of utilizing CIDRs in the Virginia Tech Dorset flock located on campus.

The use of CIDRs to enhance fall lambing in the VT Dorset flock was initiated in Spring 2010. The primary goal was to increase the number of ewes lambing in the fall for use in the APSC teaching program as well as meet the demand for fall-born rams for commercial producers. The following summary will present results from spring and fall breeding and lambing seasons over the past three years. Breeding season protocols were similar across years. For spring breeding, CIDRs were administered late April through mid-May. All ewes had been isolated from rams prior to synchronization. Ewes were mated in single-sire breeding groups, and rams had passed a breeding soundness evaluation prior to the breeding season. Any ewe not conceiving in the spring breeding season was subsequently exposed to rams starting in August to lamb in January-February. No synchronization protocol was used in the fall breeding season. Rams remained with the ewes for approximately three estrus cycles. Differences in synchronization treatments over the three years are outlined with results below.

<u>2011-2012 Season</u>

In 2011, a total of 59 registered Dorset ewes were synchronized with CIDRs. CIDRs were administered in late April or late May, and removed after 5 or 7 days following insertion. Ewes were mated to Dorset rams in single-sire breeding pastures. A control group (no CIDR) of 32 ewes were introduced to the same rams on the same day as the synchronized ewes. All ewes had lambed either fall 2010 or winter 2011. Open ewes from the Spring 2011 breeding were bred August-September for subsequent lambing in winter 2012. The following table summarizes breeding and lambing information for each lambing season.

	Fall Lambing 2011		Winter Lambing 2012
	CIDR[a]	Control	
No. Ewes	59	32	36
No. Ewes Lambing	35 (59%)	14 (44%)	34 (94%)
Lambs born/ewe lambing	1.48	1.46	1.76
Lambs weaned/ewe lambing	1.21	1.31	1.67
[a] Includes ewes receiving CIDR for 5 or 7 days.			

	All Service Sires		Service Sire A		Service Sire B		Service Sire C	
	CIDR[a]	Control	CIDR[a]	Control	CIDR[a]	Control	CIDR[a]	Control
No. ewes	59	32	23	13	15	8	21	11
No. ewes lambing	35 (59%)	14 (44%)	16 (70%)	9 (69%)	2 (13%)	0 (0%)	17 (81%)	5 (45%)

As shown above, overall pregnancy rate for ewes synchronized with CIDRs was 59% compared to 44% for control ewes. Lambs born per ewe lambing was similar for synchronized vs. control ewes. Evaluation of the effect of service sire revealed one sire group (Sire B) had much lower pregnancy rates as a result of poor ram performance. Excluding ewes exposed to Sire B, overall pregnancy rate was 75% (33 of 44 ewes) for ewes receiving CIDR and 58% (14 of 24) for control ewes. Comparing fall vs. winter lambing ewes reveals a substantial difference in number of lambs born and weaned per ewe lambing.

2012-2013 Season

In spring 2012 a total of 40 Dorset ewes were synchronized with CIDRs. All synchronized ewes lambed January 15 –February 15 and were weaned on April 5. CIDRs were inserted on May 3 and removed after 5 or 7 days. A control group of 41 ewes were introduced to rams the same day as the synchronized ewes. All control ewes had lambed fall 2011. Control ewes received no CIDR. Open ewes from the Spring 2012 breeding were bred August-September for subsequent lambing in winter 2013. Results are presented below.

	Fall Lambing 2012		Winter Lambing 2013
	CIDR[a]	Control	
No. Ewes	40	41	43
No. Ewes Lambing	25 (63%)	19 (46%)	36 (84%)
Lambs born/ewe lambing	1.25	1.58	1.79
Lambs weaned/ewe lambing	1.05	1.42	1.68
[a] Includes ewes receiving CIDR for 5 or 7 days.			

In the spring 2012 breeding season, there was no difference in pregnancy rate among the four sires utilized. Overall pregnancy rate (54%), and pregnancy rate for CIDR and Control ewes was very similar to that observed in Spring 2011. Additionally, there was no difference in pregnancy rate between 5 vs. 7-day CIDRs in either 2011 or 2012. At breeding, all ewes were weighed and Body Condition Scored. There was a tendency for thinner ewes (BCS = 2) to have slightly lower pregnancy rates than ewes in BCS 3 or 4 (50% vs. 56%). Ewes that became pregnant were an average of 13 pounds heavier at breeding compared to ewes which failed to breed in the spring. Pregnancy rates were similar across ewe ages (all were mature ewes). As was observed in the previous year, Dorset ewes lambing in the winter vs. fall drop and wean a larger lamb crop. Additionally, observations from fall lambing ewes in both 2011 and 2012 showed fall lambing tended to have a higher incidence of stillbirths and low birth weight lambs resulting in more mortality from birth to weaning compared to winter lambing ewes.

2013 Season

In spring 2013 a total of 38 Dorset ewes were synchronized with CIDRs. All synchronized ewes lambed January–February and were weaned on March 27. CIDRs were inserted on May 16 and removed after 5 or 7 days. One half of the ewes receiving CIDRs were administered PMSG 24 hours prior to CIDR removal. A control group of 41 ewes were introduced to rams the same day as the synchronized ewes. All control ewes had lambed fall 2012. Control ewes received no CIDR. Results for the synchronization treatments are shown below.

	Fall Lambing 2013		
	CIDR[a]	CIDR+PMSG[b]	Control
No. Ewes	19	19	36
No. Ewes Lambing	14 (74%)	14 (74%)	21 (58%)
Lambs born/ewe lambing	1.53	1.79	1.43
Lambs weaned/ewe lambing	1.31	1.79	1.19
[a] Includes ewes receiving CIDR for 5 or 7 days. [b] Includes ewes receiving CIDR for 5 or 7 days, + PMSG.			

In spring 2013, pregnancy rates were similar for ewes receiving CIDR compared to those receiving CIDR+PMSG. Both synchronized and control ewes had higher pregnancy rates in spring 2013 compared to the spring breeding seasons of 2011 and 2012, and this difference was

most notable for the control, non-synchronized ewes (58% pregnant vs. 44% and 46% previous two springs). No differences in pregnancy rate among the three sires utilized in Spring 2013 were observed. Ewes receiving CIDR+PMSG had higher lambing rates than those receiving CIDR alone, although pregnancy rate was the same. Given the small number of ewes in both treatment groups, this observation requires further investigation.

Collectively, these on-farm experiences underline several key points when synchronizing ewes for spring breeding:

- Ram fertility and libido is critical, conduct BSE on rams and observe closely; use of a marking harness will increase accuracy of monitoring
- Ewe:ram ratio should not exceed 18:1 and may need to be lower depending on the age and capacity of the ram. Single ram flocks should stagger CIDR removal (every 2-3d) to avoid overworking the ram
- Ewes should be in good body condition, weaned and recovered from the weaning process
- Ewes should not be exposed to rams prior to synchronization
- Minimize stress on ewes during and immediately following breeding season (heat, transportation)
- Lambing rates will be significantly lower for fall vs. winter/spring lambing ewes