BEAR, PG600 & Matrix use: Components in effective gilt development unit management

J. Patterson[1], W. Wilson[2], C. Francisco[2], N. Williams[3], G. Spronk[4], E. Beltranena[1] and G. Foxcroft[1]

[1]Swine Research & Technology Centre, 4-10 Agriculture/Forestry Centre, University of Alberta, Edmonton, AB T6G 2P5, [2]Intervet, USA, [3] PIC, USA, [4]Pipestone Veterinary Clinic, MN, USA. ***Email***: george.foxcroft@ualberta.ca

The objective of this study was to demonstrate that efficient gilt development unit (GDU) management would improve reproductive efficiency of a 3200 farrow-to-wean sow farm. The overall primary targets of the GDU were to achieve: 1) 80% *heat-no-serve* (HNS) gilts within a 28-day selection window (85-90% including opportunity gilts); 2) 100% of gilts bred at > 2nd estrus; 3) 100% gilts bred at target weight (135 to 150 kg). To achieve these targets, a selection program involving a 28-day stimulation period was implemented in the GDU: 1) d1-13; direct (and fenceline) contact with vasectomized boars in a BEAR (Boar Exposure ARea); 2) d14; remix and re-pen all gilts; 3) d23; all "opportunity" gilts without HNS receive PG600; and 4) d28; all eligible gilts are identified and all gilts without HNS are culled. As a secondary objective, all eligible gilts were allocated to weekly breeding groups to receive Matrix (15 mg/hd/d x 14 d) targeting at breeding 85% of gilts during a 5-day period. .

There was a variable response to direct boar contact between d1 and d23 due to poor animal health. 90.7% (n=881) of opportunity (known non-cyclic) gilts treated with PG600 exhibited a HNS within 10-d of treatment (4.1±0.9 d). No differences were detected between gilts with a natural HNS or a PG600 induced HNS (PGHNS) prior to Matrix treatment for farrow rate (91.6±1.2 vs 90.1±1.4 %), total born (13.2±0.1 vs 12.9±0.1) or born alive (11.8±0.1 vs 11.7± 0.1), respectively (P>0.05). Matrix was effective in synchronizing estrus: 91.3% (n=1550) of gilts were bred within 10 d (6.4±1.0 d) after Matrix withdrawal. However, the percentage gilts bred within 10 d of Matrix withdrawal was higher in HNS compared to PGHNS gilts (89.1±1.1 vs 80.1±1.6 %) (P<0.05).

Implications: This study provides "proof-of-principle" that the three essential components of effective GDU management (BEAR, PG600 and Matrix) are effective in meeting breeding targets, synchronizing breeding weeks and helping focus staff at the time of breeding to maximize 1st parity farrow rates, litter size and lactation length.