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PG600® FOR IMPROVEMENT OF PRODUCTIVITY OF PRIMIPAROUS SOWS

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Maximizing breeding efficiency of a sow herd can be challenging, particularly among females weaning their first litters. Even when particular care is taken in managing body reserves and in carrying out appropriate feeding strategy, females weaning their first litters often fail to return to estrus within 7 days of weaning. This failure disrupts sow groups, complicates flow of sows through the breeding phase, and has a negative effect on herd productivity. Furthermore, when replacement rates are high, primiparous sows comprise a large proportion of each breeding group and so overall herd productivity is sensitive to the breeding performance of primiparous sows. This report is a retrospective observational study of the use of PG600® (Intervet, Millsboro, DE) to enhance the breeding performance of first-litter females.

METHODS. Twin 1400-sow breeding units were studied, one which initiated PG600 administration to most primiparous sows at the time of weaning beginning in May, 2001, and one which did not. Data consist of breeding and subsequent farrowing performance of monthly cohorts established at the time of weaning and comprised solely of primiparous sows. Each female in both units which was mated after weaning her first litter in 2000, 2001, or 2002 was included in one of 72 cohorts. During the study period of 3 years, 2050 primiparous sows were weaned and mated in the non-PG600 herd, 1742 in the PG600 herd. Data were aggregated using PigCHAMP and analyzed in a univariate ANOVA with independent variables for herd and treatment.

RESULTS & DISCUSSION. Following PG600 implementation, average wean-to-first-service interval of primiparous sows was reduced from 9.0 to 6.1 days ($P < .0001$).

Percent primiparous sows bred by 7 days post-weaning was increased following the introduction of PG600 (89.4% vs 71.6%, $P < .0001$), and remained unchanged in the non-PG600 herd. Percent bred by 7 days post-weaning sustained at around 90% is remarkable performance for primiparous sows.

Percent repeat services was reduced in primiparous sows by the use of PG600 (9.3% vs 12.5%, $P < .05$) and remained unchanged in the non-PG600 herd.

Farrowing rate was unchanged by the use of PG600 (91.2% vs 94.4%, $P = .08$).

To accurately assess the effect of PG600 on fecundity, primiparous sows females receiving PG600 were defined as responders if they exhibited a fertile estrus within 7 days of injection. There was no significant difference between first-litter females which did or did not respond to PG600 (10.0 vs 10.3, $P = .17$). There were significantly more pigs born dead per litter in both herds in 2002 as a consequence of severe outbreaks of PRRS ($P < .01$).

Non-productive sow days were reduced in both herds over the time horizon of the study ($P < .02$). An increase in non-productive sow days per record from 15 days to 25 days among sows weaned during the summer of 2002 in the non-PG600 herd was avoided in the PG600 herd.

Pigs produced per productive sow day was calculated and then multiplied by the number of non-productive sow days to determine pigs forgone due to non-productivity. Forgone pigs was reduced by PG600, providing the return of 0.4 live pig per dose of PG600 ($P < .0001$). Presuming 10% preweaning mortality, the benefit:cost ratio of PG600 was 2.5:1 when weaned pigs were worth \$30 each.

The results of this study indicate that, if PG600 use results in an increase of 7 percentage points in percent sows bred by 7 days, then use of PG600 to improve productivity of primiparous sows will be cost-effective.

The effects of PG600 on performance seen in this study have required reconsideration of targets for breeding performance of first-litter females.