

Effects of Sow Parity and L-arginine (Progenos™) Treatment during Early Gestation on Litter Size and Birth Weight

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L-arginine, a key regulator of embryogenesis, as well as placental and fetal growth, has been reported to increase litter size born. L-arginine could also counteract effects of intrauterine growth retardation (IUGR) due to intra-uterine crowding established in the higher parity sows used in the present study. However, the optimal dose/duration of L-arginine treatment is not known.

Sows in estrus within ten days after weaning (n = 735) were bred by artificial insemination and allocated with respect to parity (parity 2–6) to one of six treatments. For the 586 sows that were pregnant, litter data were collected within 24 hours after farrowing.

Litter size born was highest in parity 2 and 3 sows and then decreased in higher parity females. Although litter size was inversely related to birth weight, within litter sizes of 10-15, factors other than numbers born contributed to major differences in average litter birth weight. There were no proven benefits of Progenos™ treatment on either numbers born or litter birth weight.

Implications: Litter size and birth weight were not affected by Progenos™ treatment; however, litter size was affected by parity. Effects of Progenos™ treatment on sub-populations of larger litters are being explored further.