

ABSTRACTS
AMERICAN SOCIETY OF ANIMAL SCIENCE
NORTHEAST SECTION
February 23–24, 2001
Pennsylvania State University

* Author Presenting Paper

NE2 Effects of iron or grain supplementation on the growth, feed efficiency, and meat characteristics of dairy goat kids. James Lechner*, James Wohlt, and Patricia Schoknecht, Rutgers, The State University of New Jersey.

The consumption of goat meat in the U. S. is increasing due to ethnic demand, but most Americans consume very little. Expanding the consumer base for goat meat may require a specialty item, such as veal. This study was performed to determine if surplus dairy goat kids could be raised as veal. Forty-five, 1 d old Saanen and Saanen cross kids were fed a customized goat milk replacer (MR) containing 8 mg Fe/kg MR. Kids were blocked by BW and sex and assigned to 3 dietary treatments: 1) MR + liquid iron to 108 mg/kg MR, Control (C); 2) MR alone, Low-iron (LFe); 3) MR + supplemental grain (SG) free choice. The MR was fed 3x/d during wk 1 and 2x/d during wk 2-4 with respective supplementations. At d 28, the SG group was reduced to one MR feeding/d. Kid BW on d 1 and 28 did not differ among treatments, but SG kids weighed less ($P < 0.05$) on d 56 (13.4 ± 0.40 kg) than kids fed the C (15.1 ± 0.6 kg) or LFe (15.0 ± 0.4 kg;) diets. ADG did not differ among treatments during wk 1-4 (P1), but was significantly lower ($P < 0.05$) for SG kids (150 ± 8 g) during wk 5-8 (P2) than kids fed the C (211 ± 13 g) or LFe (207 ± 8 g) diets. Daily DMI of milk did not differ among treatments during P1, but was less ($P < 0.05$) during P2 for kids fed SG (257 ± 9 g) than those fed C (344 ± 13 g) or LFe (327 ± 13 g) diets. Total daily DMI during P1 was greater ($P < 0.05$) for kids fed SG (267 ± 10 g) than those fed C (232 ± 7 g) or LFe (231 ± 6 g), but not during P2. The feed:gain during P1 and P2 was higher ($P < 0.05$) for kids fed SG than kids fed C or LFe. SG carcasses were lighter (8.5 ± 0.3 kg) than either C (9.7 ± 0.4 kg) or LFe (9.7 ± 0.3 kg;), with no difference in dressing %. Loins were lighter ($P < 0.05$) for kids fed SG (153 ± 6 g) than kids fed C (190 ± 8 g) or LFe (182 ± 6 g). Feeding a low-iron diet did not influence growth rate, feed efficiency, or carcass characteristics; however, feeding supplemental grain when milk was restricted for 4 wk resulted in decreased growth rate and smaller carcasses of kids.

Key Words: goat kids, veal , milk replacer

NE6 Embryo preservation and transfer technology for swine production. J. R. Dobrinsky*¹, ¹USDA-ARS, GGPL, Beltsville, Maryland.

Embryo preservation and transfer enable an increase in the efficiency of transmitting improved genetic potential. Breeds possessing beneficial production characteristics or disease resistance traits are desired. Today, large numbers of pigs are transported by air from nucleus herds to countries/regions where breeding units are being established. Transport costs are high, risk of disease transmission is a threat, and health testing and regulations are difficult and limit live animal transport. The risks, costs and constraints can be reduced by shipping preserved embryos rather than live animals. In this way, desirable genetics could be collected, aseptically washed, preserved, and shipped to the location where repopulation occurs. Development of long-term preservation and transfer of swine embryos would provide applications for production, research and medicine, including: transport of maternal germplasm, rapid regeneration or expansion of lines, ability to increase selection pressure in nucleus herds, desirable genetics from diseased herds could be rescued and regenerated in a disease-free environment. We developed novel methodology to cryopreserve morula/early blastocyst stage pig embryos. Embryos were frozen or vitrified with protocols described by Dobrinsky et al. (2001). Following cryopreservation, embryos were cultured 48h or surgically transferred to recipient females. Frozen/thawed (96%) and vitrified/warmed (cVIT; 84%) embryos developed to blastocysts at high rates. cVIT embryos were warmed and surgically transferred to recipients. In the first trial, 3 of 4 gilts farrowed 19 live and healthy offspring. In a second trial, 6 of 7 gilts farrowed 42 offspring. Total recipients farrowing was 82% (9/11) with 61 live piglets born. This novel methodology produced the first live offspring from cryopreserved morula/early blastocyst stage pig embryos and shows realistic opportunity to utilize this technology in pig production. Further work is needed on pathogen-embryo interaction and methodologies for aseptic washing of embryos prior to preservation/transfer. Further, there is need to improve reproductive management and pregnancy rates of recipient pigs in embryo transfer programs, including methodology for maternal maintenance of pregnancy and development of non-surgical embryo transfer.

Key Words: Swine embryo, Preservation, Transfer