

SPRAY-DRIED PLASMA SUPPLEMENTATION AIDS RECOVERY OF LOW BODY WEIGHT PIGS AT WEANING

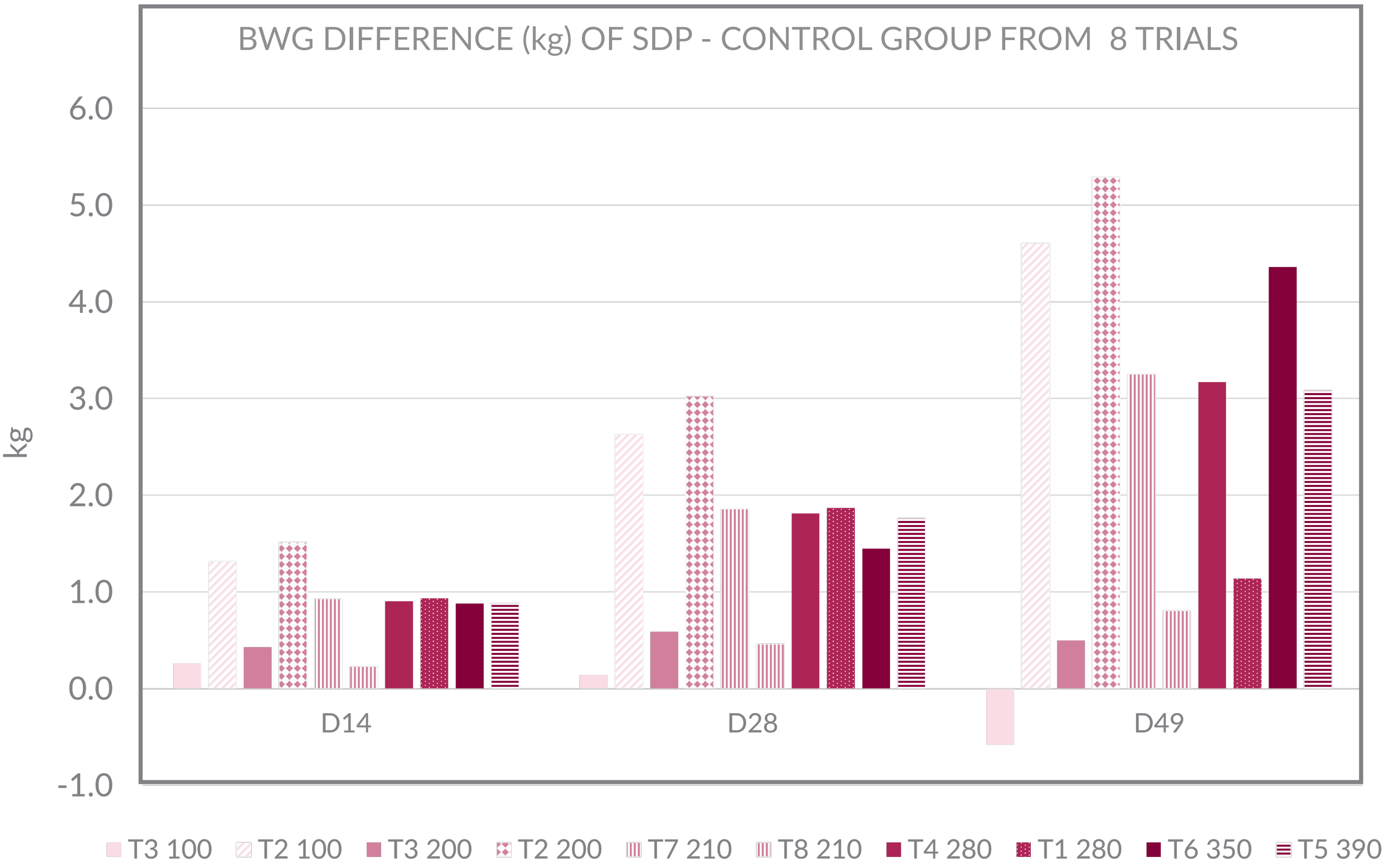
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INTRODUCTION

Low body weight (BW) pigs at weaning have lower survival and growth relative to heavier BW cohorts and need special care and nutrition. As spray-dried plasma (SDP) percentage in pig feed increases to 10%, there is a linear increase in feed intake and growth regardless of BW or age at weaning. Commercial nursery feed with none or low levels of SDP may not support growth recovery, viability and survival of low BW pigs. Eight trials involving 1644 pigs (average wean BW, 4.04-5.18 kg) evaluated growth effects of supplementing (top-dressing) SDP on nursery feed to low BW pigs compared to non-supplemented control groups. SDP supplementation (10-26 g/pig/d), feeding duration (10 to 28 days) and total SDP fed per pig ranged from 100 to 390 g/pig and varied by trial (T1-T8). Differences in body weight gain (BWG) between groups and across trials was adjusted to 14, 28 or 49 trial days. BWG differences at D49 favored the SDP group ranging from 0.5 to 5.3 kg in 7/8 of the trials (**Figure 1**). Overall, supplementing SDP (10-28 d) enhanced growth while fed and maintained a BWG advantage thereafter to nursery exit (D49).

Figure 1. SDP-Control group body weight gain differences by trial (T) and amount of SDP fed (100-390 g/pig).



OBJECTIVES AND METHODS

Based on earlier trial results in **Figure 1**, an experiment was done at two separate commercial farms (Farm 1; Farm 2) to compare growth, survival and viability of weaned pigs in the lowest 15% BW category when provided supplemental SDP hand-mixed on commercial feed at 20 g/pig/d for the initial 14 d postweaning (280 g SDP fed/pig) vs a non-supplemented Control group.

Farm 1 provided 335 pigs weaned at 20-27 days of age, allotted to 26 pens with 12-13 pigs/pen providing 13 pens/group. Individual pig BW at d0 and d14 postweaning and pen feed consumption was recorded to d14 postweaning.

Farm 2 provided 368 pigs weaned at 17-27 days of age, placed in 4 pens (2 pens/group). Individual pig BW at d0 and d14 was recorded, but feed consumption was not recorded.

Nonviable pigs (culled and not moved to finisher) and mortality to the end of the nursery (d42 on feed) were analyzed by weaned pig BW categories <3 kg, 3-4 kg, and >4 kg using the NPAR1Way statistical procedure for both farms.

RESULTS

Farm 1, d0 BW (3.30 kg; 3.58 kg), d14 BW (5.44 kg; 5.46 kg) and average daily feed intake (177.5 g/d; 177.5 g/d) did not differ for respective SDP and Control groups. Average daily gain (SDP, 152.3 g/d; Control, 133.1 g/d) and FCR (SDP, 1.17; Control, 1.34) was improved ($P<0.05$) for the SDP group.

Figure 2 shows the difference in BWG (kg) at d14 for SDP vs Control at Farm 1 and 2 and the reduction in FCR units for SDP vs Control at Farm 1.

Respective Farm 1 mortality at d14 or d42 did not differ for SDP (2.4%, 4.8%) vs Control (3.0%, 6.0%) groups. At d42 there was an interaction ($P<0.05$) of BW category and group for mortality and non-viable pigs. Mortality within respective BW categories (<3 kg, 3-4 kg, >4 kg) was 9.3%, 2.1%, 5.6% for SDP and 17.9%, 3.9%, 2.6% for Control and differed ($P<0.05$) by group for <3 kg BW category (**Figure 3**). Nonviable pigs within respective BW categories of <3 kg, 3-4 kg, >4 kg was 42.9%, 31.2%, 11.8% for SDP and 82.6%, 28.6%, 24.3% for Control groups and differed ($P<0.001$) by group for <3 kg or >4 kg BW categories.

Farm 2, d0 BW was 3.75 kg for SDP and 3.68 kg for Control group. D14 BW was higher ($P<0.01$) for SDP (6.17 kg) vs Control (5.54 kg) and for average daily gain (SDP, 172.7 g/d; Control, 132.8 g/d). D14 mortality (SDP, 1.6%; Control, 1.6%), D42 mortality (SDP, 5.4%; Control, 7.9%) and nonviable pigs (SDP, 18.6%; Control, 24.7%) did not differ by group. Nonviable pigs within respective BW categories (<3 kg, 3-4 kg, >4 kg) was 45.5%, 25.4%, 4.2% for SDP and 59.3%, 20.3%, 13.5% for Control and differed ($P<0.001$) by group for <3kg and >4kg BW categories.

Figure 4 shows percentage of nonviable pigs at D42 by group and BW categories for both farms.

Figure 2. Body weight gain (Farm 1 and 2) and feed conversion rate (Farm 1) improvements over controls of low body weight pigs supplemented with SDP.

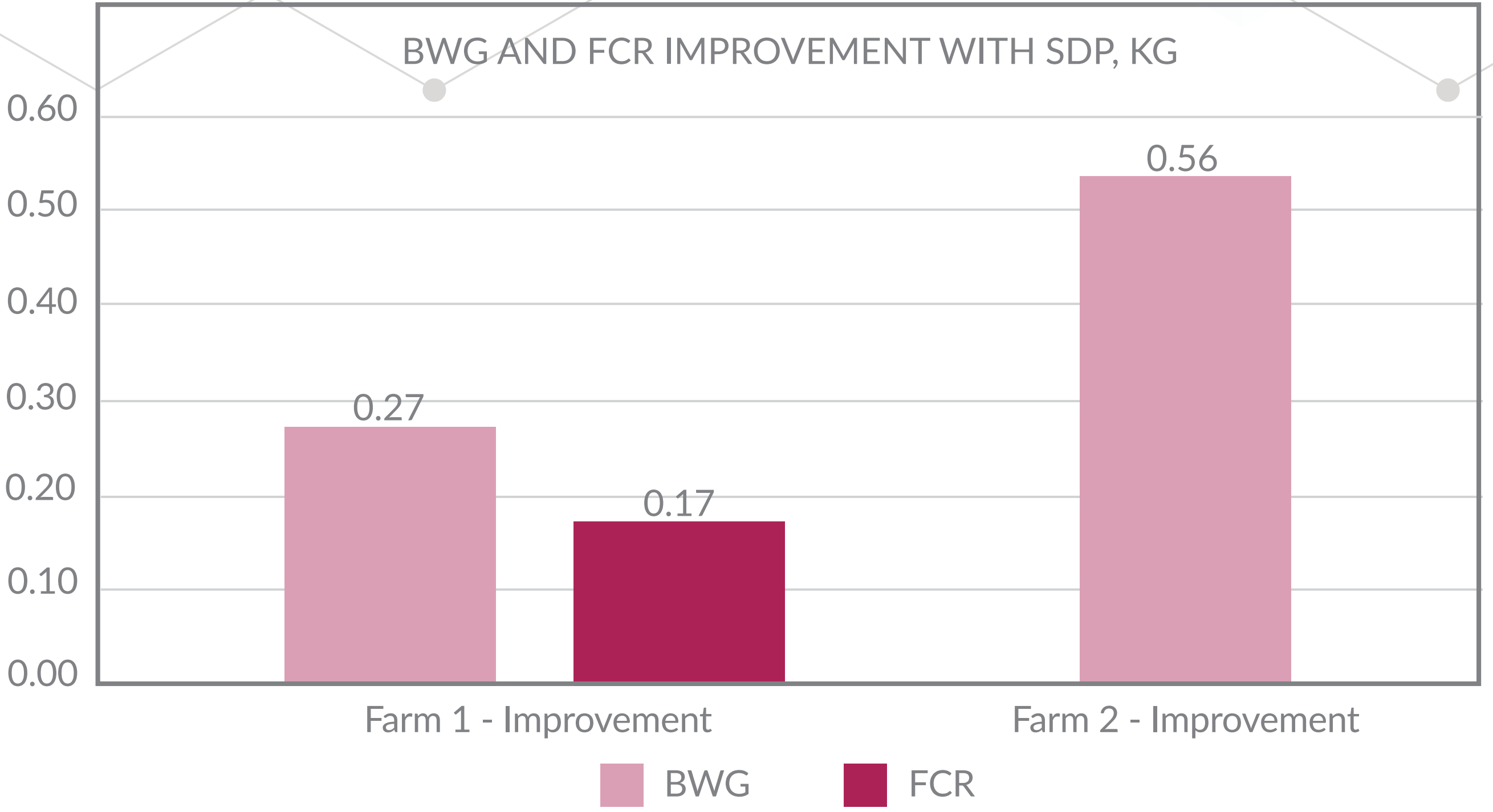


Figure 3. Mortality of Control vs SDP Group by wean BW category at Farm 1.

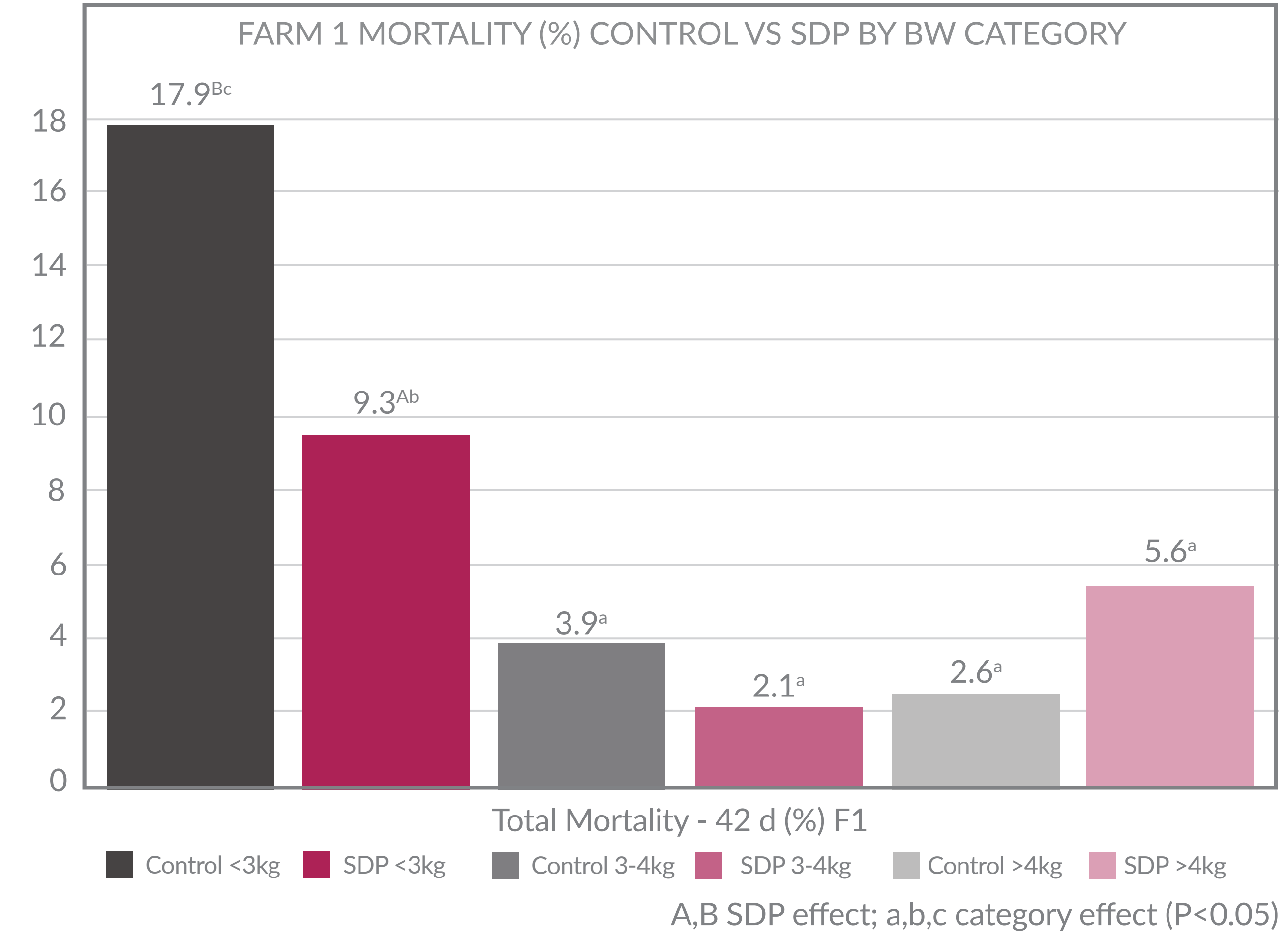
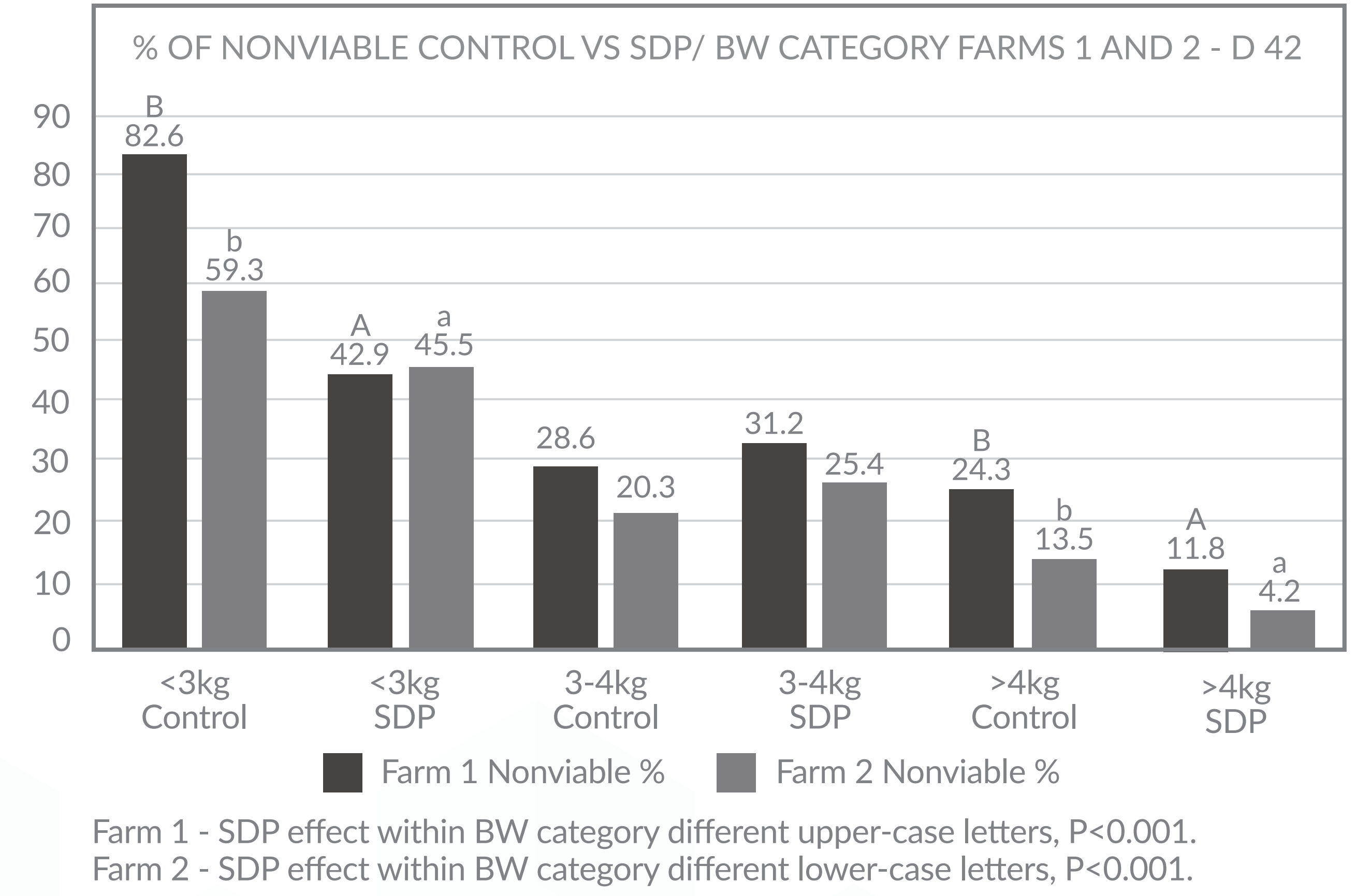


Figure 4. Percentage of nonviable pigs at D42 by group and BW category at Farm 1 and 2.



CONCLUSIONS

Supplementing SDP on commercial feed for 14 d postweaning is a successful nutritional strategy to increase growth and survival of low BW pigs at weaning and to produce more viable opportunity pigs to move to the finisher.

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