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A retrospective evaluation the relationships between of out-of-feed events and group closeout metrics in finishing data

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Objective: To evaluate the associations between out-of-feed events and finisher group performance through retrospective analysis.

Materials and Methods: The number and type of out-of-feed events (OOFs) experienced by a total of 104 finisher groups in two systems (Systems A and B) were determined through BinTrac® hourly feed disappearance data and matched with group closeout data. OOFs were defined as eight or more consecutive hourly feed disappearances of 6.25 kg pounds or less extending, at least, through 8 AM, or seven or more consecutive hourly feed disappearances of 6.25 kg or less during daytime feeding hours (7AM-5PM). OOFs were additionally categorized as follows: AM (morning OOF with no feed delivered by 8AM), PM (afternoon OOF where outage begins between 12PM and 5PM), LD (long duration where outage overlaps AM and PM as either AM/PM or PM/AM, etc.), and LDDays (the cumulative number of daily feeding periods affected by single LD event). Analysis of variance was used to determine associations between OOFs and group mortality, average market weight, average daily feed intake and feed conversion. Linear regression was used to generate parameter estimates.

Results: System A. Closeout mortality was significantly associated with Site (P=0.0098), StartQtr (P<0.0001), GrpDays (P<0.0006) and LDDays (P=0.0044). Using linear regression and adjusting for Site, StartQtr, and GrpDays, the parameter estimate for LDDays was 0.315

(95% CI: 0.111, 0.519). Average market weight was significantly associated with Site (P=0.0057), StartQtr (P=0.0026), Grpdays (P=0.0002), average head start weight (P=0.0078), and PM (P=0.0438). Using linear regression and adjusting for Site, StartQtr, GrpDays, and average head start weight, the parameter estimate for PM was 8.96 (SE=4.13). There were significant associations between OOFs and ADFI or FC.

System B. Closeout mortality was significantly associated with StartQtr (P=0.0014), CloseYear (P=0.0061), Hopper (P=0.0325), GrpDays (P=0.0023), and trended linearly different across LDDays (P=0.0723) and an interaction between StartQtr and CloseYear (P=0.0502). Using linear regression and adjusting for StartQtr, CloseYear, the interaction between StartQtr and CloseYear, Hopper and GrpDays, the parameter estimate for LDDays was 0.186 (95% CI: -0.017, 0.389). Average market weight was significantly associated with StartQtr (P=0.0026), SingleSource (P<0.0001), Site (P=0.0018), CloseYear (P<0.0001) and AM (P=0.0286). Using linear regression and adjusting for StartQtr, SingleSource, GrpDays, Site, and CloseYear, the parameter estimate for AM was 1.120 (SE=0.500). There were significant associations between OOFs and ADFI or FC.

Conclusions: Long-duration OOFs have a detrimental effect on group mortality. The relationship between short-duration OOFs and compensatory gain needs further investigation.