Public Abstract

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Title:IMPROVEMENT OF FEED EFFICIENCY IN BEEF CATTLE THROUGH SELECTION UPON RESIDUAL FEED INTAKE (RFI)

Profitability of beef production can increase by identifying methods to reduce feed cost. Selecting beef cattle which metabolically are more efficient at converting feed into gain or other sources of production is one way to reduce feed cost. Residual feed intake (RFI) is one trait to identify animals which are metabolically feed efficient or inefficient. Trials in the current study investigated whether animal RFI varies between trials conducted at two different stages of maturity, the influence on progeny feed efficiency when sires and dams of known RFI values were mated. We further investigated whether RFI measured postweaning in dams or RFI measured as mature cows were a more accurate prediction of progeny feed efficiency in addition to whether ribeye area and body composition varied between steers from either RFI- or RFI+ dams. In summary, reranking in RFI does occur between trials, however; RFI phenotype was correlated between postweaning and mature trials indicating animals identified as feed efficient or inefficient remain feed efficient or inefficient further into maturity. Progeny from more efficient matings of RFI- sires and dams produced progeny with higher feed efficiency with no difference in average daily gain to progeny from RFI+ sires and dams. Postweaning measurement of dam RFI more accurately predicted progeny feed efficiency while steers from RFI- dams tended to have larger ribeye areas with no variation in body composition to steers from RFI+ dams. Selection upon RFI is an accurate tool for beef producers to use to increase profitability in their production system.