compared to calf-feds. When corn price was $6.50/ bushel yearlings fed WCGF were $46.45/steer ($P = 0.04$) and CORN was numerically $31.62/steer more profitable ($P = 0.13$) than calf-feds. When yearlings were supplemented WDGS, profitability was not different for yearlings when corn price was $2.50/bushel ($P = 0.30$). However, profitability was greater for yearlings fed WDGS compared to calf-feds when corn price was $4.50 ($P = 0.03$) and $6.50/ bushel ($P < 0.01$). As corn price increased profitability for long yearlings compared to calf-feds increased when yearlings were supplemented CORN (- $11.08 to $31.62/steer), WCGF ($9.19 to $46.45/steer), and WDGS ($22.70 to $81.56/ steer). From this study we conclude that as corn prices increase supplementation programs can have a large impact on profitability differences between calf-fed and long yearling programs.

Crude Protein, Ash, Phosphorus, Neutral Detergent Fiber, and Starch Concentrations in Particle Size Distributions of Corn Steam Flaked to Varying Bulk Densities *K. E. Hales[1], N. A. Cole[2], A. Leytem[3], M. L. Galyean[1], [1]Department of Animal and Food Sciences, Texas Tech University, Lubbock; [2]USDA-ARS Conservation and Production Research Laboratory, Bushland, TX; and [3]USDA-ARS Northwest Irrigation and Soils Research Laboratory, Kimberly, ID*

The particle size distribution that results from steam flaking cereal grains could be related to differences in the chemical composition of steam-flaked (SF) vs. unprocessed grain. Particle size distribution and associated CP, P, NDF, and starch concentrations in corn steam flaked to bulk densities of 22, 26, and 30 pounds/bushel was evaluated by tempering whole shelled corn with 13% added moisture (wt/vol) for approximately 18 h and steam conditioning for 20 min, followed by flaking to the desired densities. Resulting SF corn was sieved to determine the proportions in particle size categories of > 8,000 μm, 4,760 to 8,000 μm, 2,360 to 4,760 μm, 1,180 to 2,360 μm, 600 to 1,180 μm, and < 600 μm. Concentrations of CP, P, NDF, and starch were analyzed in the particle size fractions and in the whole flakes. Data were analyzed as a completely randomized design with batch (5 to 6 batches per bulk density) as the experimental unit using the Mixed procedure of SAS. There were interactions ($P < 0.01$) between sieve size and bulk density for the proportions of chemical components within each sieve size. The proportion of starch, CP, ash, and NDF in particles collected on the largest sieve (>8,000 μm) decreased ($P < 0.05$) as bulk density decreased. In addition, the proportion of total starch within particles of 4,760 to 8,000 μm was greater ($P < 0.05$) for 22 and 26 than for 30 pound/bushel flakes. For total CP, the proportion collected on the 1,180 and 4,760 μm screens was greater ($P < 0.05$) for 22 than for 30 pound/bushel flakes. The proportion of P in particles greater than 4,760 μm in size decreased ($P < 0.05$) with more extensive grain processing, whereas it was greater ($P < 0.05$) for 22 than 26 and 30 pound/bushel flakes in the particles smaller than 1,180 μm. The proportions of total NDF and ash in the 1,180 μm particles increased ($P < 0.05$) with decreasing bulk density. Concentrations of starch, CP, ash, P, and NDF in the whole flakes were not affected by bulk density. The greatest proportion of corn grain particles was in the 8,000-μm screen, whereas the 600-μm sieve had the least particles. Therefore, within the range of bulk density we evaluated nutrients are not lost during steam flaking; however, some nutrients accumulate in finer particles created during the steam flaking process. If smaller particles are disproportionately sampled, flaked corn would seem to differ in composition from the intact grain.

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