

Table 3. Average value and range in lot means for five selected traits.

Item	Average	Range
TDN in ration, %	59.1	51.0 to 65.0
Daily gain, lb	1.94	1.24 to 2.81
Carcass grade ¹	9.1	7.0 to 11.8
TDN conversion ²	0.165	0.103 to 0.229
Chilled dressing per cent ³	59.6	56.0 to 62.8

¹ Grades: 7, Standard; 8, High Standard; 9, Low Good; 10, Good; 11, High Good; 12, Low Choice.

² Gain per pound TDN consumed.

³ Chilled carcass weight ÷ market weight.

citrus pulp. It was shown by Hentges et al. (5) that replacing 47.4 to 63.2% of corn meal with an equal weight of pelleted citrus meal in the finishing ration reduced the efficiency of feed utilization for gains. These two groups of research workers found evidence of an apparently harmful alteration of the rumen papillae with high levels of either citrus pulp or pelleted citrus meal.

Fresh grapefruit fed with hay and cottonseed meal supplied 56.5% of the TDN in the ration. Oranges furnished 44.4% and grated oranges 58.8%, the difference in consumption being due to the greater palatability of grated over the ungrated fruit. Grapefruit and oranges in cattle rations resulted in rate of gain and feed utilization for gains comparable to the energy nutrients consumed. The amount of water in fresh citrus is a limiting factor in TDN intake in balanced rations. The removal of oil in skin of oranges increased palatability and consumption of fresh oranges, resulting in improved gains and conversion of total feed and TDN for maintenance and gain. Cost of fruit with labor involved in preparation will limit the use of fresh fruit in finishing rations.

TDN in the 73 rations was from 44.1% (Lot 103) to 65.0% (Lot 44). The National Research Council (16) shows that a ration for calves finished as short yearlings⁵ should contain 66% TDN and for yearling cattle 65% TDN. Thus only the rations fed Lot 65 approached the recommended TDN level. Daily gain per group ranged from 1.24 pounds (Lot 100) to 2.81 pounds (Lot 89). The average daily gain for all cattle not given stilbestrol (Table 3) is below the suggested rate of 2.1 pounds for calves and 2.4 pounds for yearlings. Roughage in rations was from 15.4% (Lot 91) to 58.9% (Lot 65). There was a correlation ($r = 0.29$) between ration TDN and daily gain and the

⁵ From 12 to 15 months of age.