

gain and produce good quality beef. Many cattle on test rations gained at a slower rate, consequently requiring more nutrients per unit of gain but with only a slight difference in carcass yield and grade. In general, rations high in roughage and low in concentrates were fed during the first weeks, with the per cent of concentrates being increased during the latter part of a trial. The data shown are the averages for the entire trial.

Citrus feed products were used in all but one ration, and citrus pulp was the main source of energy nutrients in all but three rations. The amount of citrus pulp eaten averaged 5.2 pounds daily by animals started on trial as calves, and fed citrus molasses and corn meal in addition, to 16.6 pounds by long yearling steers⁴ with pulp as the only energy feed in the ration.

Citrus pulp furnished from 52.1% to 66.1% of the TDN in the ration in which no other energy feed was provided. In one series steers self-fed citrus molasses ate an average of 7.9 pounds daily which provided 32.4% of the TDN in their ration (Lot 25); citrus pulp supplied 33.0% of the TDN. The remainder of the TDN in this ration came from hay, cottonseed meal, and complete mineral. Total citrus feeds supplied as much as 76.1% of ration TDN (Lot 190), citrus pulp 57.1%, and citrus molasses 19.0%.

Fresh grapefruit fed with hay and cottonseed meal supplied 48.6% of the ration TDN. Oranges furnished 44.4% and grated oranges 58.8% of the TDN, the difference in consumption being due to superior palatability of the latter.

The rations, feed intake, feedlot performance, and carcass values for each group of cattle used in preparing Figures 1 to 10 are given in Appendix Tables 2 and 3. Average values for factors which apply to the 73 lots of cattle used in this study are given in Table 3. Points of interest shown in each group are briefly discussed below.

Figure 1 shows the relationship between daily gain and per cent TDN in the ration. Daily gain was increased by 0.023 pounds for each 1% increase of TDN in the ration. The correlation coefficient between these two traits, (r), was 0.29 (Table 1). That this relationship was not more strongly positive is explained by the variation in age and weight of cattle fed and by the number of ingredients used in making up the rations.

⁴ Steers 21 to 24 months of age.