

(2) Estimate for the U.S. the ratio of energy consumed in food to energy consumed in fuel.

Remember that a food “calorie” is a kilocalorie, approximately 4000 J. Assuming a daily intake of 2500 food calories per person and a population of 2.4×10^8 , the annual use of energy in food is close to 10^{18} J. That is nearly one quad.

A quad is defined as 10^{15} Btu. The total annual energy use in the U.S. is 70 quads, approximately 7×10^{19} J. Conceding uncertainty in our estimate of mean dietary caloric intake, we could say with some confidence that food calories represent more than 1% but less than 2% of the total energy demand.