(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 $2.4 \times 10^8$, 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 $7 \times 10^{19}$ 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.