Module 2: Baseline Assessment

Session 10: Introduction to Kilojoule Calculations

ANSWER SHEET 2

Converting food sources into percentages of annual food needs

1. Question

You find out that an average household has access to the milk of **5 cows for 6 months** of the year. Average milk yields are **1.3 litres per cow** per day. For a **household of 6**, how much of their food needs does the milk from these five cows fulfil?

Answer

Total milk production: 5 cows x 1.3 litres milk x 6 months x 30 days = 1170 litres

Annual household food needs in milk:
3.28 litres x 365 days x 6 members = 7183 litres

Proportion of household annual food needs provided by the milk:
(1170 ÷ 7183) x 100= 16%

i.e. **the milk from the cows provides 16% of the household's annual food needs.**

2. Question

In April, the same household trades **two calves** at the local market and receives **1.5 sacks of maize for each calf** (1 sack = 100kg). What proportion of their annual food needs will this trade cover?

Answer

Total maize purchase: 2 cows x 1.5 sacks x 100 kg = 300 kg

Annual household food needs in maize: 0.58 kg x 365 days x 6 members = 1270 kg

Proportion of household annual food needs provided by the maize:
(300 ÷ 1270) x 100= 24%

i.e. **selling the calves covers 24% of the household's annual food needs.**

3. Question

A woman tells you that for the past three months she has **only eaten pumpkin leaves**. Is this nutritionally possible? How many kilograms of leaves would she have needed to consume each day in order to survive?

Answer

Daily food needs for one person: 8800 kJ

1 kg pumpkin leaves provides 1172 kJ

Quantity of pumpkin leaves needed to meet daily food needs: 8800 ÷ 1172 = 7.5 kg

i.e. **a person would have to 7.5 kg of pumpkin leaves a day in order to survive for more than a short period.**

4. Question

If a household of **six** kills one average sized bull (**150 kg** of edible meat) **per year**, how much of their total annual food income does the contribution meet?

Answer

Total meat consumption: 1 bull x 150 kg = 150 kg

Annual household food needs in beef meat: 0.89 kg x 365 days x 6 members = 1949 kg

Proportion of household annual food needs provided by the bull's meat:
(150 ÷ 1949) x 100 = 8%

i.e. **the bull's meat provides 8% of the household's annual food needs.**