Problem 12

The fastest growing plant on record is a *Hesperoyucca whipplei* that grew 3.7 m in 14 days. What was its growth rate in micrometers per second?

Solution

To obtain the average growth rate, divide the distance it grew by the amount of time it took.

$$\text{Growth Rate} = \frac{\text{Distance}}{\text{Time}} = \frac{3.7 \text{ m}}{14 \text{ day}}$$

$$= \frac{3.7}{14} \frac{\cancel{\text{m}}}{\cancel{\text{day}}} \times \frac{10^6 \ \mu\text{m}}{1 \ \cancel{\text{m}}} \times \frac{1 \ \cancel{\text{day}}}{24 \ \cancel{\text{hours}}} \times \frac{1 \ \cancel{\text{hours}}}{60 \ \cancel{\text{min}}} \times \frac{1 \ \cancel{\text{min}}}{60 \text{ sec}}$$

$$\approx 3.1 \ \frac{\mu\text{m}}{\text{s}}$$