MEASURING DECOMPOSITION USING SODA LIME
DATA FORM 3: SAMPLES

Complete this form for each soil sample.

Name(s) _____________________________________________________________

Today’s date _________________

Soil sampling ID number _________________________ Sampling date _______________

Soil sampling location ________________________________________________

Type of area sampled (e.g., forest, schoolyard) ______________________________

Soil description _________________________________________________________

Date and time soda lime incubation started _________________________________

Date and time soda lime incubation ended _________________________________

Total # days incubation (should be 2 days) _________________________________

Protocol 4c, Part 2. Prepare soil samples

Before incubation

Weight of container (without lid) (G) = ____________ g

Weight of container (without lid) and soil (H) = ____________ g

| Total soil wt (I) | = H – G | = ____________ g |

Protocol 4c, Part 3. Prepare soda lime

Before incubation

Weight of petri dish bottom = ____________ g

Weight of dish and soda lime before drying = ____________ g

Weight of dish and soda lime after drying (J) = ____________ g

Protocol 4c, Part 5. Calculate the amount of CO₂ produced

After incubation and redrying of the soda lime

Weight of dish and soda lime = ____________ g

Weight of dish and soda lime after redrying (K) = ____________ g

| Sample soda lime wt gain (L) | = K – J | = ____________ g |
Calculating the rate of CO₂ production

1. Calculate the corrected weight gain for soda lime using:

Corrected soda lime wt gain = sample soda lime wt gain - blank soda lime wt gain

\[ Y = L - C \]

\[ \text{________ g} = \text{________ g} - \text{________ g} \]

The answer will be in grams of CO₂ produced. For use in the final equation, you’ll need to convert this to milligrams:

\[ \text{________ g} \times 1000 \text{ mg/g} = \text{________ mg CO₂} \]

2. Calculate the dry weight of the total soil sample (using soil weights from this form and moisture content from Part 1, step 5 on the Measuring Decomposition Using Soda Lime Data Form 1. Soil Moisture Content):

\[ \text{Dry wt} = \text{total soil wt} - (\text{moisture content} \times \text{total soil wt}) \]

\[ Z = I - (\text{moisture content} \times I) \]

\[ \text{____ g} = \text{____ g} - (\text{____ x ______ g}) \]

This answer will be in grams of dry soil. For use in the final equation, you’ll need to convert it to kilograms:

\[ \text{_______ g} \times 0.001 \text{ kg/g} = \text{___________ kg dry soil} \]

3. Calculate the rate of CO₂ production in milligrams CO₂ produced per day per kilogram of dry soil. Use your answers from the previous two steps in place of the Y and Z in this equation:

\[ \text{CO₂ production rate} = \frac{Y \text{ mg CO₂} \times 1.69/\text{days incubated}}{Z \text{ kg dry soil}} = \text{_______ mg CO₂/day/kg dry soil} \]