

## Mustard Extraction Procedure

### Materials:

- Quadrat kit
- Mustard Water (3 x 2L jugs of water with 20 grams of mustard powder)
- Plastic cups
- Bottles of tap water
- Magnifying Glass
- Worm iPhone App
- Species identification pamphlet

### Procedure:

1. Locate a flat area within the sampling area that your teacher has identified.
2. Mark out a 25cm x 25 cm quadrat with the materials provided by your teacher.
3. Record information about the location, environment, and weather on your data sheet. Record the GPS coordinates on the datasheet using the iPhone's Compass app.
4. Check the area to see if any worms are already present on the surface of the ground. These worms should be removed and put in the cup with water.
5. Measure the depth of your leaf litter. Record this on your data sheet.
6. Remove any leaf-litter from the soil or remove any tall grass that covers the soil. Collect any worms you find in the leaf litter or grass.
7. Pour approximately  $\frac{1}{2}$  of the 2L jug of mustard water onto each of the quadrats that have been marked off. Gather any worms that come to the surface and place them in your cup. **Remember** to wait until the worms are fully out of the soil before picking them up.
8. Wait 5 minutes and remove any worms that emerge.
9. After 5 minutes pour the remaining 1 Liter of the mustard water to the soil.
10. Wait another 5 minutes and collect any new worms.
11. Record on the data sheet the length of each worm, the type of worm it is, and any specific notes you have about that worm. Take photos of any worms that you collect.
12. Once you return to the classroom, input your data into the Worms Website.
13. Repeat this procedure for each quadrat sampled.

