

Earthworm Extraction Procedure

Earthworms can be measured in the soil by directly removing them with an extraction technique. We measured earthworm density from an area about the size of a bucket in circumference. The method only requires a few instruments and a source of ground mustard. The procedure uses the following sequence:

- Cut the bottom out of a plastic bucket-like those that contain sheet rock plaster (280 cm diameter), so that the ring is 6 inches (15.24 cm) tall and includes the handle.
- Each ring is 1/16 m² ($A=\pi r^2$; $r=140\text{cm}$, $A=61,575\text{ cm}^2 = 1/16\text{ m}^2$)
- Each ring is placed in the soil and pounded to a depth of about 2 inches.
- A 0.33% mustard solution is made up by adding 6.6 g of ground mustard flour (this amount is one level tablespoon of ground mustard) to a 2 L volumetric (a 2 L soft drink container) and bringing to volume.
- Make the above 2 L mustard solution up three times and add the first 2L to the surface of the interior ring
- Check the ring for earthworms after about 3-5 minutes; collect any that have surfaced; add another 2 L to the ring after about a total of 10 minutes; repeat one more time if worms are collect the first or second time.

The ground mustard can be purchased from a local organic store or from a grocery store. We purchased from a local organic store for about \$2.50 per pound (454 grams to a pound); the non 'organic' mustard was \$2.50 per pound while the organic mustard was \$9.00 per pound. Both the organic and non-organic mustard seemed to be comparable as far as earthworm extraction.

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