*Supplementary Text: Fatty Acid Methyl Ester Extraction Method.* Approximately 2g of hearth soil was weighed out into clean glass centrifuge tubes and 5µg internal standard (1000ppm nonadecanoate) was added to each sample. Lipids were extracted in a single-phase with 10mL DCM:M (dichloromethane:methanol; v/v 1:1) in 15mL glass centrifuge tubes. Samples were sonicated for 20 minutes and centrifuged for 15 minutes at 4000 RPM and the supernatant was filtered through glass wool into a clean glass tube. Repeated solvent addition, sonication, centrifugation, and filtration from the first tube to the second tube. Centrifuged filtered extract for 15 min at 4000 rpm. Filtered a third time into new 15mL glass sample tubes. Placed extracted fatty acids under a gentle stream of nitrogen until all solvent had evaporated.

Methyl esters were derivatized by adding 5mL sulfuric acid (4%) in methanol and heating samples to 85ºC for 60 minutes. After cooling for 20 minutes, 5mL sodium bicarbonate solution was added to quench the reaction and derivatized lipids were extracted with 3mL hexanes. Samples were then vortexed, and supernatant was removed to a new 15mL glass sample tube. Repeated hexane addition, vortexing, and supernatant removal. Placed vials on a heat block set to 30ºC and under a gentle stream of nitrogen for 30 minutes. Added 1mL dichloromethane to each and transferred contents to a new gas chromatography mass spectrometry (GC/MS) autosampler vial. Extracted and derivatized fatty acid methyl esters (FAMEs) were analyzed via GC/MS within 48 hours at the University of Michigan. Aliquots of these samples were mailed overnight on ice to the Stable Isotope Facility at the University of California, Davis for compound specific isotopic analysis of FAMEs.

Throughout laboratory preparation and analysis, great care was taken to maintain a clean environment and protect sample integrity. Glassware was thoroughly washed with alkaline laboratory cleaner, fully rinsed, and air dried. All glassware was given an additional solvent rinse and left to air dry again before use. Nitrile gloves were worn at all stages of laboratory analysis. A sample blank was prepared and submitted to GC/MS analysis in parallel with samples to identify possible contaminants.