BIOCHAR EFFECTIVENESS:
PHOTOMONITORING CROP SUCCESS, ESTIMATING WATER FOOTPRINT, AND WEIGHING BIOMASS

Sonoma Biochar Initiative
Building Healthy Soils
Redirecting Carbon

SONOMA ECOLOGY CENTER

CROP SUCCESS

What is it?	**Crop success** is positive plant progress according to several indicators. Factors to be evaluated include increased biomass, acceptable seedling growth, good leaf color, healthy plant vigor, limited pest/disease activity, and good crop taste.
What changes it?	Environmental factors such as soil quality, water quantity, seed variability, and sunlight availability. Application of biochar will potentially improve some factors.
Why measure it?	Observing changes in crop success with varying applications of biochar will yield information about the value of biochar as a soil amendment.

Photomonitoring

To assess the effects of biochar, all factors are kept constant among plots being evaluated--except for the quantity of biochar applied. For biochar assessment, evaluating crop success is done comparatively, observing the varying progress of crops in different plots. Photomonitoring is the simplest US EPA-approved method of demonstrating plant success. **Equipment needed: Measuring tape, this sheet, clipboard, pencil, clock, camera, and email or mail access.**

Instructions

Step 1. Sketch planting plan for each 3' by 3' plot. Note plot contents (common names of plants installed) below, as well as time and date of planting.
Step 2. Plant plot as sketched and amend as instructed with compost and biochar.
Step 3. Photograph plot from identical compass point on both plots. (Ensure permanent landmarks are in photo to help locate follow-up photographs.) Mark X for location of camera points next to boxes, below.

	PLOT 1: Compost Only		PLOT 2: Compost + Biochar	
Plot contents: Planted: Date _____ First photograph: Date/Time _____				Plot contents: Planted: Date _____ First photograph: Date/Time _____

Step 4. Email photo jpgs, one for each plot during four separate photography rounds, to research@sonomaecologycenter.org. File name must be in this format: YearMonthDay_YourName_ControlPlot0 (or TreatmentPlot0). Example: 20130401_JoeBloe_ControlPlot0. After 1 month, 2 months, and 4 months, you will email identically photographed photos of your plots to the same e-address. Follow-up photo files must be jpgs also and named in this format: YearMonthDay_YourName_TreatmentPlot# (or ControlPlot#) for 1 month, 2 months, and 4 months (final photo). Each participant will email a total of eight photographs in the course of the monitoring. Or, if working with hard copy, print photos, mark them, and mail along with scanned and completed datasheets to Research Director, SEC, P.O. Box 1486, Eldridge, CA 95431. See instructions for more details or go to sonomabiocharinitiative.org/citscience.

Instructions continued other side
www.sonomabiocharinitiative.org