**Figures:**

Fig. 1. Effect of biochar concentration and soil cover (black plastic mulch or bare soil) on concentration of ammonium in a Clarion loam soil on 6-18-2013.

**A**

Fig. 2. Nitrate concentration of water samples from a Clarion loam soil. Samples were obtained using lysimeters buried 2 feet deep. Means are averages of four samples. Bars indicate LSD of means (α=0.05) for a specific date.

Fig.3. Nitrate concentration of water samples from a highly altered sand soil. Samples were obtained using lysimeters buried 2 feet deep. Means are averages of four samples. Bars indicate LSD of means (α=0.05) for a specific date.