

Lenka Doskocil
Bean Plants in Biochar

The purpose of this experiment was to investigate the effects of Biochar on the health and growth of bean plants. I hypothesized that if a plant is placed in $\frac{1}{4}$ Biochar : $\frac{3}{4}$ Soil then it will grow better than plants placed in $\frac{1}{2}$ Biochar : $\frac{1}{2}$ Soil or Plain Soil because Biochar will help to retain nutrients and help to increase water infiltration but too much Biochar will cause the soil to become too basic.

This investigation involved planting bean seeds in 3 different soil mixtures, each with a different Biochar content. Each plant was watered with 10 ml of rain water every day. The plants were observed and records were taken concerning the height, leaf color, and leaf number of each bean plant for 40 consecutive days.

The data collected did not support the original hypothesis. On Day 40 the average height of the bean plants in $\frac{1}{4}$ Biochar, $\frac{3}{4}$ Soil was 29.812cm while the average of the $\frac{1}{2}$ Biochar, $\frac{1}{2}$ Soil was 34.125 cm and the Plain Soil: 34.333 cm. This data demonstrates that something in the soil content of these plants caused their growth to be stunted.

These findings led me to believe that if bean plants are placed in a soil content of $\frac{1}{4}$ Biochar, $\frac{3}{4}$ Soil then their collective growth will be less than bean plants in a soil content of $\frac{1}{2}$ Biochar, $\frac{1}{2}$ Soil and those in Plain Soil. The current method of simply changing the soil content did not prove as effective as hoped.