

Project Outline;

7 moisture probes were installed the first of June to track and monitor soil moisture and soil temperature in 7 different treatments of woody biomass chips mixed with compost, plain woody biomass chips and a control with no treatment. There were 9 trials total, but due to some issues with two trials, two trials were not monitored with probes as the data wouldn't be consistent enough across the treatment to have confidence in the data.

The 7 probes were installed in;

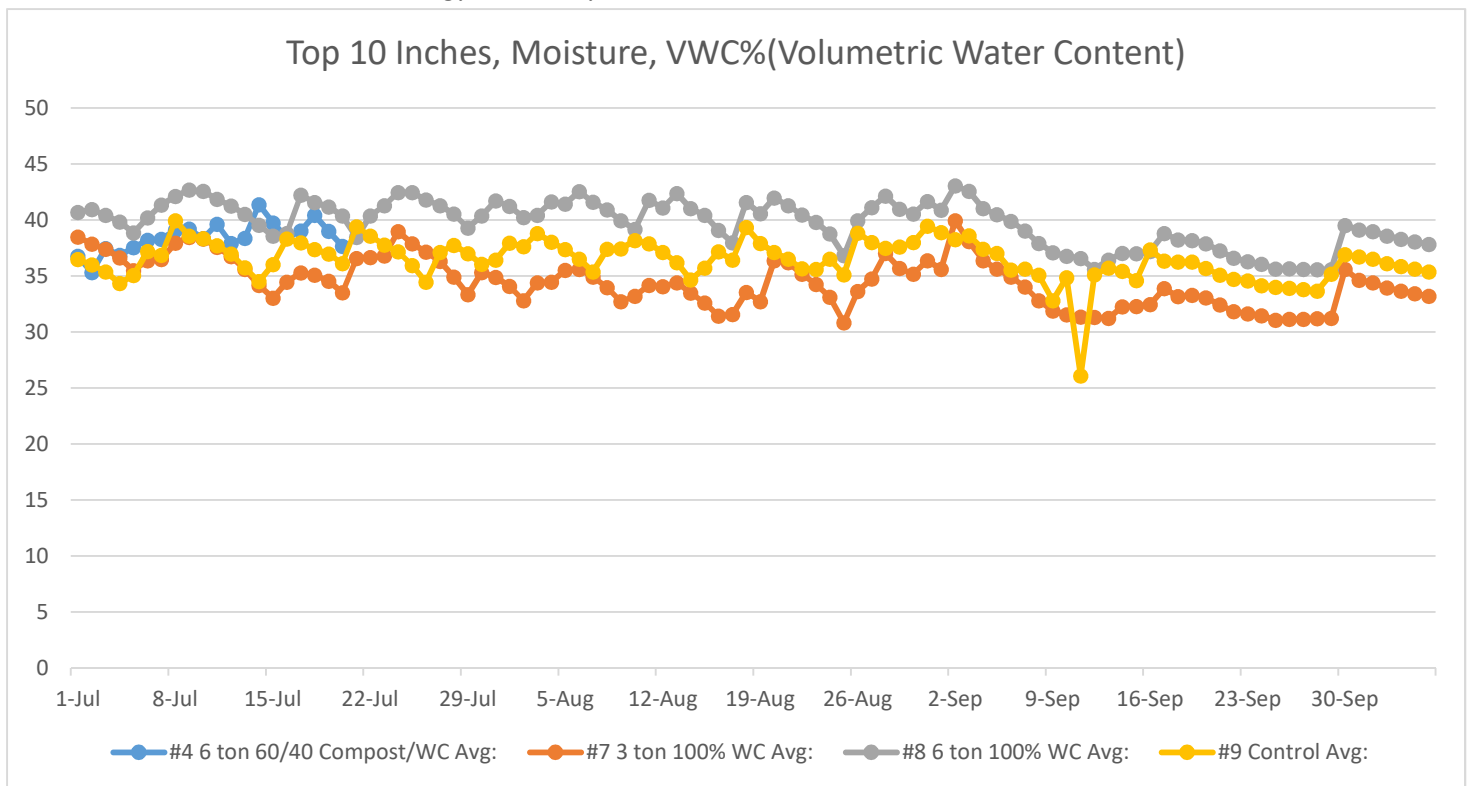
- 3 & 6 ton application rates of 60/40 blend of Compost and Wood Chips
- 3 & 6 ton application rates of 80/20 blend of Compost and Wood Chips
- 3 & 6 ton application rates of 100 % Wood Chips
- Control, with no application of anything

Unfortunately, due to in and out cell service, some probes did not send consistent probe data and we were not able to show all of the probe readings for the following information. Overall though, the data that was collected does show some interesting information.

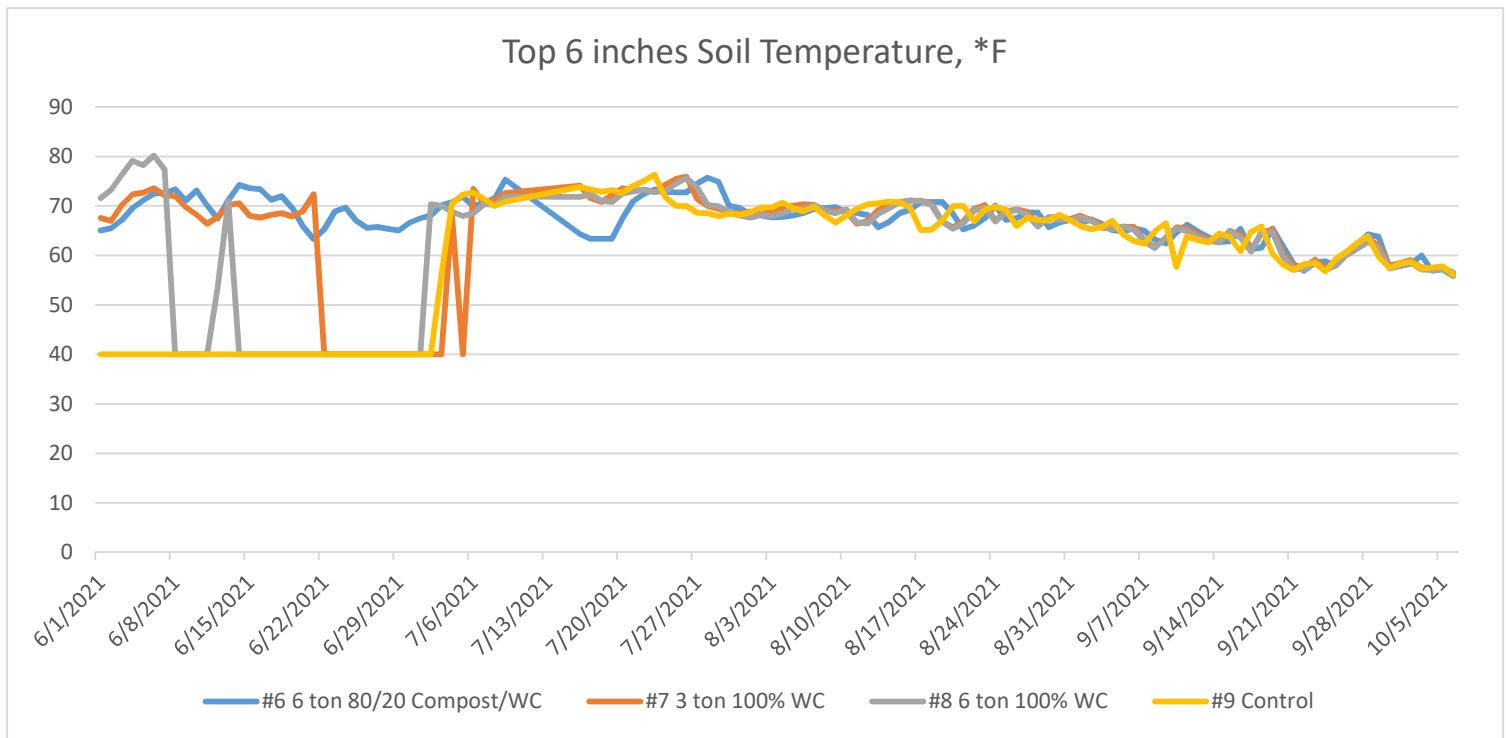
The graph below shows the top 3 sensors (10 inches) soil moisture readings on 4 treatments. Starting July 1 for almost the whole rest of the season, you can see that the #8 treatment of 100% Wood Chips maintained more moisture in the top 10 inches than the other 3 treatments. What's interesting is the control stayed close to the 3 ton 100% Wood Chip treatment thru most of July, but then started to 'move above' as the season progressed.

Without a little more information, it'd be easy to conclude that the wood chips kept the soil moisture levels higher, which does make sense. It would be nice to know what was going on with the 3 vs 6 ton treatments of 100% wood chips; I would like to think those numbers would have been closer to each other, but just enough soil texture difference could influence those numbers.

I chose to graph the top 10 inches as that is where most of our soil nutrients 'hang out' and we need water for plants/roots to take up nutrients. Keeping the top profile more moist benefits soil biology as well; they want moist and cool environments. An increase in soil biology and biology activity benefits crops by increasing nutrient creation and biomass breakdown, which is more food for biology and the cycle continues.



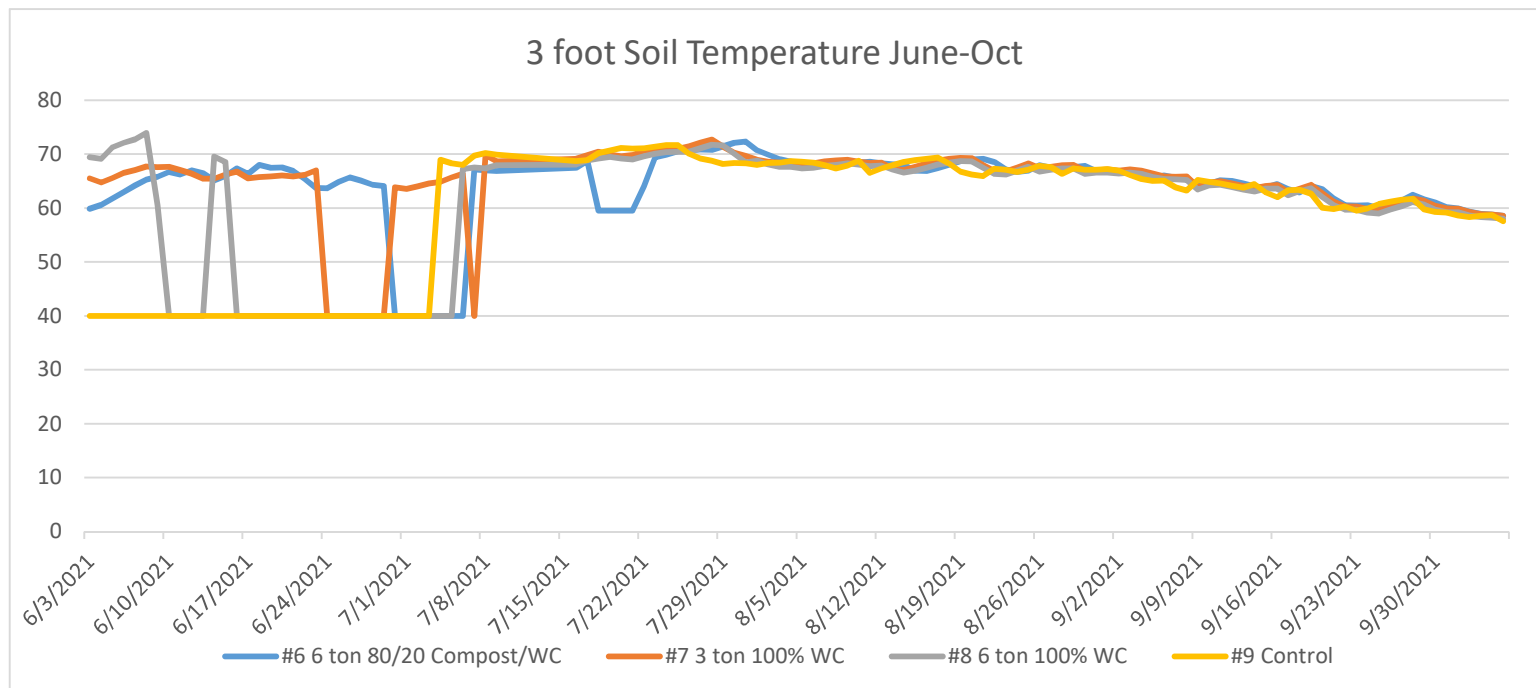
Top 6 inches Soil Temperature, *F



Looking at soil temperature underneath treatments shows that in general, there isn't much difference over the course of the season. The three treatments stayed relatively close to the control in readings with similar trends. There are times in-season that the treatments stayed more constant in temperature readings, especially in the 6 inch zone. This is a good sign; drastic and fast changes in soil temperature can affect nutrient cycling and soil biology activity. Soil biology is similar to us; we don't like crazy up and down temperatures, it shocks the system and can slow us down.

The 40* readings are actually data points with no information; I defaulted them to 40 to keep the graph/data readings easier to see and understand.

3 foot Soil Temperature June-Oct



Overall, what was collected for data is good information that gives us some insight to what the treatments can do. It would be worthwhile and interesting to continue monitoring the treatments and control with more applications as the years go on. Along with soil samples for nutrient tracking and soil health, in time, in theory, we should start to see some major changes in moisture and temperature. I predict we'd see temperature increase as an increase in biology should raise temperature; more bugs is more movement and more movement creates heat. It's all about the biology.