

Current Research

Impact of C20™ on Soil Biology & Structure

Carbon contained in C20 acts as a microbial stimulant. Soil microorganisms respond to the additions of C20 through increased reproduction and metabolism. This increase in activity can be assessed by measuring microbial respiration rates of CO₂ (Fig.1). Microbial respiration rates from C20 additions to soil are 157 times the rate of the same volume of standard compost.

Enhanced microbial activity results in significant changes to the structural characteristics of the treated soil. The enhanced activity of indigenous soil fungi and bacteria results in the clumping of soil particles into colloids (Fig 2). Fungal hyphae and bacterial ooze serve as sticking and clumping agents. This reduces the bulk density of the treated soil and increases soil porosity and water holding capacity while decreasing soil compaction (Fig. 3) These changes create better opportunities for plant root growth and proliferation.

While the primary burst of microbial activity and consequential soil building occurs within the first two weeks, soils treated with C20 remain active over six months (Fig. 4).

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Figure 1. Cumulative microbial respiration as influenced by additions of C20, compost and fertilizer.

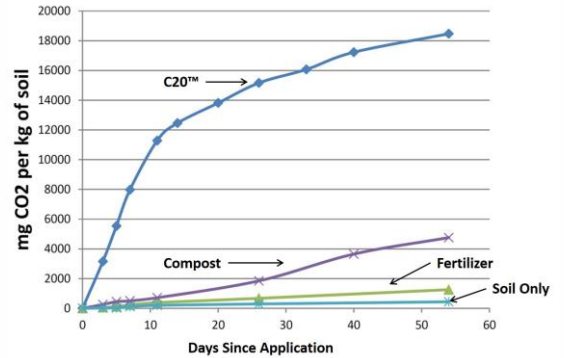


Figure 2. Soils magnified 10X to show creation of colloids by soil microorganisms in soils treated with C20 as compared to soils treated with fertilizer.

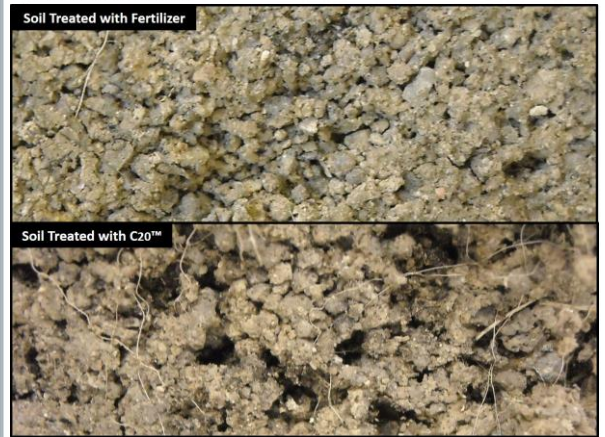


Figure 3. Additions of C20 decrease the bulk density of soil.

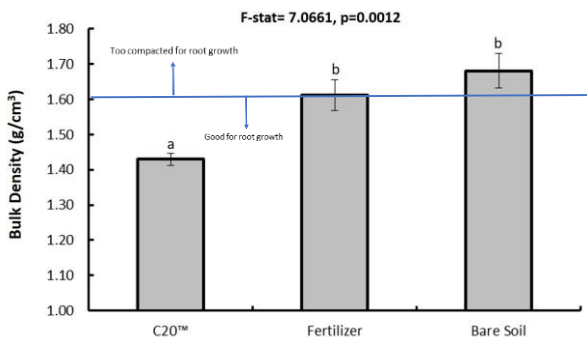


Figure 4. Microbial respiration 4-6 months after C20 treatment.

