OXY BOOSTER™

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JH Biotech Biotechnologies for Safer Agriculture

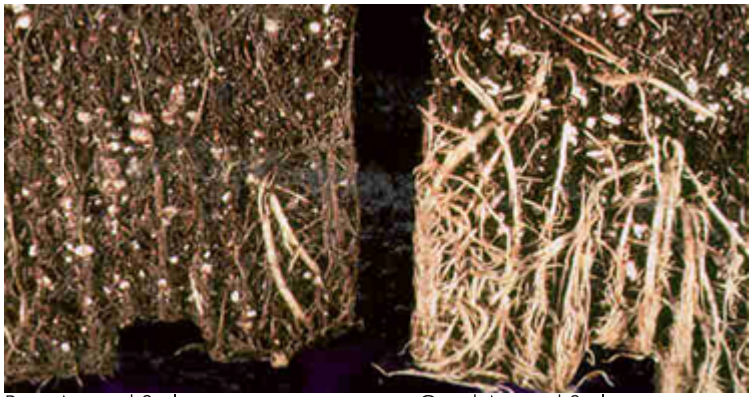
Oxy Booster is a functional plant food product which increases oxygen in the root zone that may help in promoting a healthier root system and prevent problems that may occur from oxygen deprived soils.

Oxy Booster is a healthy, environmentally safe product for root growth and beneficial microorganisms.

Healthy soil will have about 24% air, 25% water, 45% minerals, 3 - 5% humus, and up to 1% living organisms. Oxy Booster can help restore the oxygen levels in waterlogged soils, and provides better root penetration as shown in Figure (1) and (2).

Reduced plant vigor and growth from low (or no) oxygen in the root zone can be expressed several different ways and vary from species to species. The first sign of inadequate oxygen supply to the roots is wilting of the plant during the warmest part of the day when temperature and light levels are at the highest. This wilting is accompanied by slower rates of photosynthesis and carbohydrate transfer, so that over time, plant growth is reduced and yields will be affected. Insufficient oxygen reduces the permeability of roots to water which can lead to the accumulation of toxins, thus both water and minerals cannot be absorbed in sufficient quantities to support plant growth particularly under stressful conditions. If oxygen starvation continues, mineral deficiencies will begin to show, roots will die back and plants will become stunted. Under continuing anaerobic conditions, plants produce a stress hormone - ethylene which accumulates in the roots and causes collapse of the root cells.

Figure (1)



Poor Aerated Soil Good Aerated Soil

Once root deterioration caused by anaerobic conditions has begun, opportunist pathogens such as Pythium can easily and rapidly destroy the plant. Oxy Booster ensures that your plants are healthy and stress free. You will not only get the highest growth rates possible, but also prevent problems caused by low levels of oxygen.

Oxy Booster increases oxygen in the soil.

Figure (2):

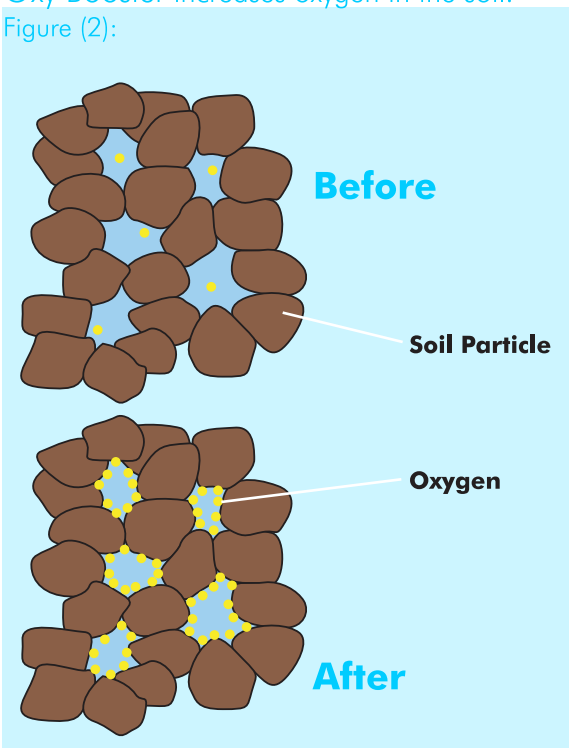
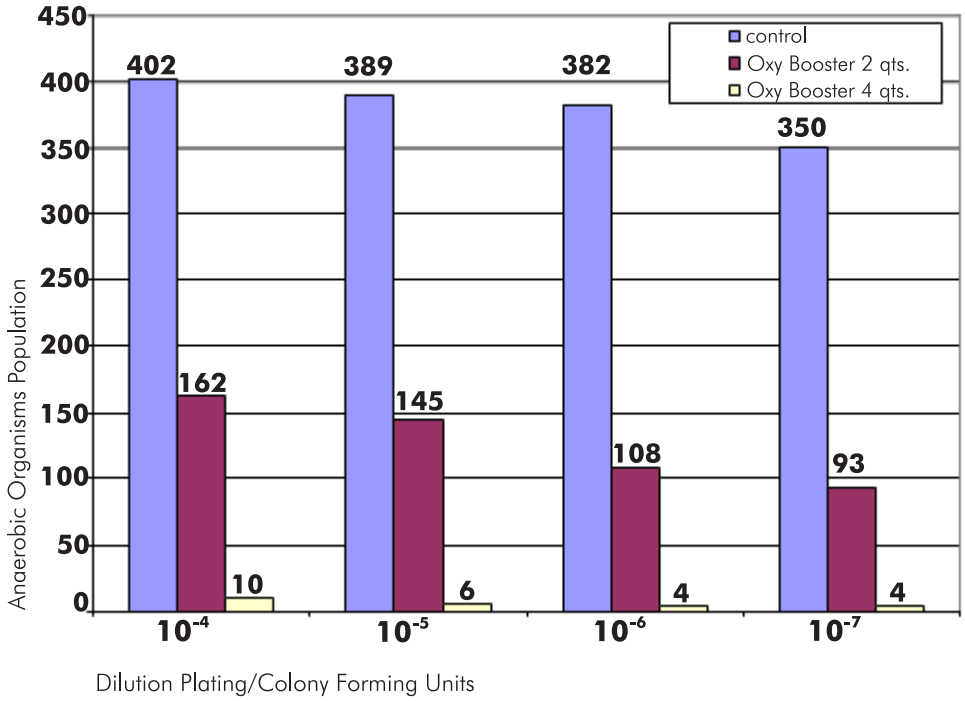


Figure (3): Effect of Oxy Booster Treatments on Soil Anaerobic Organisms Population



A plant's oxygen requirement is linked to the size of the root system, temperature and nutrient uptake rates. Since plants such as tomatoes tend to have a rapidly developing root system at the time of flowering, it is important to maintain adequate oxygen levels. With tomatoes, the requirement of oxygen in the root zone increases gradually up until the time of maximum fruit load and rapid fruit expansion, where the high rates of nutrient uptake increase the oxygen requirement quite dramatically. On the other hand, if oxygen is deficient during flowering, then the flowers and subsequent fruit may drop off as a result, or they may be undersized.

Effect of Oxy Booster on Soil Anaerobic Organisms Population

Good aeration will reduce the growth of anaerobic microorganisms in the soil. Oxy Booster treated soils recorded significantly lower number of anaerobic microorganism populations as shown in Figure (3). This may greatly improve the quality of the microenvironment surrounding the roots and hence improve functionality of the root system root system and maximize crop yield.

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For labels and MSDS visit our website at www.jhbiotech.com or phone us at 805.650.8933