

# Jack Hammer

## SOIL CONDITIONER

Soil Conditioning, Irrigation Line Cleaning, Soil Nutrient  
Uptake Enhancers and Soil Chelators

CONTAINS: PROPRIETARY BLEND OF ACIDS, CHELATING AGENTS, AND SOIL SURFACTANTS.  
ALSO CONTAINS NON PLANT FOOD INGREDIENT FULVIC ACID.

**Weight Per Gallon 9.56 lb/gal (1.14 kg/Liter)**

**CAUTION: KEEP OUT OF REACH OF CHILDREN**

**WARNING: HARMFUL IF SWALLOWED.** Causes Mild skin irritation, severe eye irritation.  
Wear protective gloves/ face and eye protection.

### GENERAL INFORMATION

**JACK HAMMER** soil conditioner, a commercial anionic, soil-amending agent, effects changes in the surface tension of the hygroscopic (bound) water in the soil, similar to the way a wetting agent acts upon surface water, but with dramatically different results. The ionic nature of soils, particularly clays, and the polarized molecular structure of waters, result in very strongly bonded (hygroscopic) water in the soil system. It is the strength of this soil-water adhesion, which leads to soil compaction, resulting in poor water infiltration; low overall water-holding capacity, reduced soil aeration, and high soil shear strength. By penetrating to vertical depths of three to four feet, and by acting upon the bound water (unlike wetting agents which act on surface water), **JACK HAMMER** demonstrates long-lasting improvements in each of these soil properties. The use of **JACK HAMMER** is also useful in managing the insoluble and soluble salts in soils and irrigation water that affect plant and soil interaction by chemically bonding to Calcium and Magnesium and other bicarbonates that normally bond with sodium, thus freeing these sodium ions so they can move downward through the soil profile away from crop roots. The use of **JACK HAMMER** as a fertilizer additive will also chemically bond to Phosphate fertilizer as well as many key micronutrients and protect the fertilizers from bonding in the soil with calcium and clay and other soil matter that normally will result in "fertilizer tie up". **JACK HAMMER** contains proven acids that aid in cleaning irrigation equipment and sprayers without the worry of corrosive damaging results common to other acid containing materials available. **JACK HAMMER** will convert insoluble calcium carbonate and other bicarbonates into soluble minerals that can become available to pass through irrigation lines or within the soil profile. **JACK HAMMER** will render these minerals available for root adsorption while again releasing harmful salt to pass through the soil profile and away from roots.

### APPLICATION:

**JACK HAMMER** can be applied through all types of irrigation systems. It can also be applied mixed with most types of liquid fertilizer. Always perform a jars test with fertilizer to confirm compatibility. It can be applied as a surface spray to soil. When metering **JACK HAMMER** directly into an irrigation water a back-siphon prevention system must be in place. Multiple applications of **JACK HAMMER** will yield the best long term results. It is suggested that applications be started at the pre-Plant and or immediately after planting and continue in season as need to control bicarbonates and protect fertilizer applications or to keep irrigation lines free of bicarbonate build up (scale).

### RATES

#### Soil Conditioning:

Soils with severe compaction and/or high salinity problems:

Use 4 Pints/acre/application

Soils with moderately severe compaction and/or moderate salinity problems:

Use 2-3 Pints/acre/application

Soils with low compaction and/or salinity and general soil maintenance:

Use 1-2 Pints/acre/application

#### Fertilizer Additive:

Liquid phosphate fertilizer solutions

Use 1-2 gallons per ton of liquid fertilizer solution

Dry phosphate fertilizer blends

Use ½-1 gallon per ton of dry fertilizer blend.

**CONDITIONS OF SALE:** 1. Seller warrants that this product consists of the ingredients specified and is reasonably fit for the purpose stated on this label when used in accordance with directions under normal conditions of use. No one, other than an officer of Seller, is authorized to make any warranty, guarantee of direction concerning this product. 2. Because of time, place, rate of application and other conditions of use are beyond sellers control, Sellers liability from handling, storage and use of this product is limited to replacement of product or refund of purchase.



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