

Cannabis and Terreplenish

Measuring pH: pH Meters vs. pH Paper

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Feed Earth Now

pH Meters

- Daily Calibration with buffers required
 - Cost of buffers: \$50-\$100/year
- Moderate level of skill required to maintain and use
- Large number of brands and capabilities are available from
 - Manufacturers
 - Distributors
- Electrodes need to be routinely replaced
 - Frequency depended on use and maintenance: 6 months-5 years
 - Price Range of electrodes: \$100-\$300+
- pH meter price range: \$50-\$2000+
- Accurate to 0.01 pH units

pH Paper

- Ready to use: No Calibration required
- No special skills required for use
- Widely available for different levels of sensitivity requirement
 - Researcher
 - Consumers
- Paper price range: \$3/100 strips-\$50/pack
- Accurate to 0.2 pH Units

Terreplenish (TP) pH at Various Dilutions

- TP to water: 1 part to 10 parts 1/10
 Mixing TP's pH at 4.8 with Water's pH at 7.2
- **Final pH of mixture= 5.8**

- TP to water: 1 part to 25 parts 1/25
- Mixing TP's pH at 4.8 with Water's pH at 7.2
- **Final pH of Mixture= 7.0**

- TP to water: 1 part to 50 parts 1/50
- Mixing TP's pH at 4.8 with Water's pH at 7.2
- **Final pH of Mixture= 7.2**

pH Meters: Caveats for the User

- Hydrogen ion concentration (pH) not directly measured with meters
- Electro-conductivity of water is measured and is used to predict pH
- Many things affect conductivity of water leading to incorrect pH readings*, such as:
 - Organic solutions
 - Incorrect electrode for the use intended
 - Calibration errors
- *http://www.astisensor.com/minimizing_user_errors_ph.pdf

Common Cause of pH meter Measurement Error with Terreplennish

- TP is an organic solution so that pH readings may be faulty unless the right electrode is used
- The correct electrode is a low glass resistance electrodes, e.g., Thermo Scientific Orion ROSS Ultra (Price: \$473)

pH and Growing Marijuana

- Soil
 - Best pH: 6.0-6.5*
- Hydroponic
 - Best pH: 6.0-6.5*
 - Will grow with pH as low as 5.5

Adjust the dilution of TP to achieve a pH
in the ideal range

<https://www.royalqueenseeds.com/blog-the-perfect-ph-value-for-a-cannabis-plant-n87>

<http://www.theweedblog.com/what-is-the-best-ph-level-for-marijuana-plants/>