Amending soil pH for home conifers

Denver water has raised water supply pH to 8.8-9, which much literature says is detrimental or even fatal to many conifers. While we attempt to test this, there are some mitigation measures which homeowners may want to think about for their own conifers. It is standard practice in many places to lower soil pH using native sulfur (found at hardware stores and nurseries). If one searches on-line for sulfur to lower soil pH many articles will come up: one is given in the link below. Amending irrigation water pH is not so easy. A commercial operation (for blueberry greenhouses, for instance) may install 1,000 gallon tanks and add muriatic acid, but this is not practical or safe for homeowners.

The link below\(^1\) recommends 800 lb/acre sulfur powder application to reduce sandy soil\(^2\) pH from 7 to about 5. This works out to 0.02 lb/sq.ft, but it is not quite as simple as that arithmetic. We do not know the pH of the soil before Denver Water raised supply water to 8.8 – 9, do not know it now, and we do not know quantitatively how much soil lime or organics are present. Fortunately, adding sulfur is a gradual amendment, mediated by microbes, and the danger of overdosing is slight.

Calculating the area to treat is simple enough. If a tree has a circular dripline, estimate the circle of roots at 1.5 times the dripline diameter, times 3 (\(\pi\)): a ten foot diameter spruce has significant roots out to about 15 ft diameter and the area treated will be 45 sq.ft, with a dosage of about a pound. This should be spread uniformly, lightly raked and watered in, and the results observed.

Note if the watering-in continues application of Denver Water at high pH before the sulfur has a chance to convert to acidity, one could water that area with a can with a tablespoon of vinegar per gallon for a couple of weeks. This would give acidity about three times the alkalinity in the can water, and a pH in the can of 6.4, not harmful to lawn or ground cover. Indoor plants (my Schefflera is now stressed by tap water) may also benefit from a teaspoon vinegar per quart tap water. While a gallon is four quarts and a tablespoon is three teaspoons, the tsp/qt is close to tbsp/gal, given the strength of vinegar is anywhere between 5 and 8%.

Please post observations on tree stress and sulfur application results for general information. The reactions of pets to sulfur or vinegar applications are not known and might be of interest too. If female dogs are inclined to pee on top of vinegar it might need countermeasures.

Notes:

2. South Denver soils are predominantly quartz sand-silt, the white to tan material seen in excavations. It has very little lime, like the sand soil in the link for which sulfur application dosage is low.
3. Dosages:
   a) Under trees, treat area in square feet calculated as dripline diameter times 4.5, with 1 lb sulfur powder per 40-50 sq.ft. Spread sulfur, rake lightly in, and continue tap water irrigation. Repeat sulfur approx. every 2 months through irrigation season.
   b) Water sulfur in with vinegar 1 tbsp/gal tap water
   c) Water indoor plants with 1 tsp vinegar/qt tap water
   d) One might add more vinegar to aim for the pH of rainwater (5.5), but the uncertain acidity and other constituents make us hesitant to recommend this.